THE UNIVERSITY
OF ILLINOIS
LIBRARY

634.05
W E
v.23

Digitized by the Internet Archive
in 2015

https://archive.org/details/westernfruitgrow2319unse

Volume 23 Number 1

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

"The National Farm Magazine"

January
1912

Spraying Number

Title Registered in U. S. Patent Office
Copyrighted, 1911, by The Fruit-Grower, St. Joseph, Mo.

Classified Advertisements, Pages 78, 79, 80
Index to Advertisements, Page 82
Table of Contents, Page 82

Ten Cents a Copy
One Dollar a Year

HURST SPRAYERS

On Free Trial

No Money in Advance

Let Us Send You One of These Sprayers

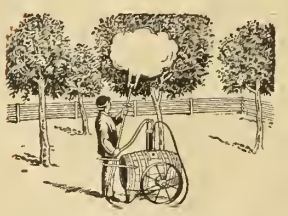
at our expense, to test in your field or orchard. You needn't send us a cent of your money, make any bank deposit or in any way advance any money until you are fully satisfied.

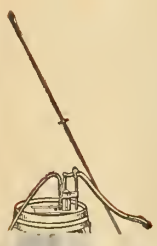
THERE are no strings to OUR free trial offer. If, after testing the machine you decide to keep it you can pay us in full or you can pay a small amount each month until it is paid for, or you can wait until next November 1st, and pay for the machine out of the extra profit that it will surely make for you.

Big Profit in Spraying

No matter how you buy a Hurst Sprayer it will not only not cost you a cent but will make you money besides, for the increase in yield from spraying will more than pay for out best machine even though you have only a couple of acres. You cannot raise fruit, potatoes or any crop that suffers from fungus or insect pests without spraying, any more than you can keep up the fertility of your farm without fertilizing. You insure your buildings from loss of fire and you should by spraying insure your trees against the deadly San Jose Scale and other insect pests which not only cut your crop in half but destroy your trees.

"Fitz-All" Barrel Sprayer





Not an ordinary barrel sprayer, but an exceptionally well-made and perfectly constructed apparatus. It fits any barrel or tank. It can be placed in center or at side of the barrel end, or on the stave side. Movable adjustable brackets hold pump solidly in place. Develons high pressure and easy to ate. Parts exposed to the nicals as plunger, plunger , valves, strainer, are all le of solid brass. Most dur- pump made. Perfect agi- on—a long paddle working nd vacuum agitator at base keep the mixture thoroughly churned and strainer clean at all times. The only all metal strainer cleaner on the market and the only one that will not give out and cause trouble. Can be used with one or two leads of hose as desired. Equipped with the Hurst Improved Never-Clog Nozzle. 5-year warranty. Send coupon or post card today. Be first to write.

Horse Power Potato and Orchard Sprayer

"No tree too high, no field too big for this king of sprayers." For the big growers of fruit, grapes, potatoes, etc. Most powerful horse-power machine made; 60 to 100 gallon tank for one or two horses. One man with the machine can do more work than two men with the old style sprayers. Works "automatically" in orchard or field—no hand pumping required. If you are tired of back-breaking hand pumping, and of paying out half your profit for hired labor, get this labor saving machine—it will pay for itself the first season.

It is made for hard service. Heavy steel axle, cypress wood tank, one-piece heavy angle iron frame, metal wheels, brass ball valves, plunger, strainer, etc. Big pump gives powerful pressure. Produces vapor spray and prevents scab, rot and insects from cutting your crop in half. Spray-arms and nozzles adjustable to any width or height of row. Light draft. Guaranteed for five years.

Spraying Guide Free

This complete spraying guide showing cuts of all the insect and fungus pests with full description, remedy and complete instructions, is free to our customers. It is printed in plain language easily understood by anyone and is the only book that will tell you just what is wrong with your trees and what to do for them. No fruit grower or farmer should be without it.

How They Are Made

All Hurst Sprayers develop high pressure and produce a vapor spray that penetrates to every part of the foliage effectually controlling all fungus and insect pests. They have brass ball valves, brass plunger, packing band, strainer, etc., and are made to last. Only the best of materials are used throughout. Each machine has a thorough agitator which insures an even distribution of the chemicals. They are simply constructed and can be operated by anyone.

Won the Gold Medal

In the spraying machine contest held by the National Horticultural Congress at Council Bluffs, Iowa, in November, 1910, the gold medal for sprayers in our class was won by a Hurst Sprayer. This contest was open to the world and surely proves the superiority of our machines.

5-Year Guarantee

An iron-bound steel-riveted guarantee for five years goes with every Hurst Sprayer, which is further evidence that they are made right. This guarantee protects you.

Get a Sprayer Free

If you are the first in your locality this season to get a Hurst Sprayer on free trial, we have a plan that will give you your sprayer entirely free—without you paying even the freight. This offer does not require you to do any canvassing or soliciting. It will take only 15 minutes of your time. We do the work. Fill out the attached coupon or write us a letter or post card **today** telling us which machine you are interested in and we will send you **free** our big catalog and condensed spraying guide and we will tell you all about our **free sprayer offer** and our **free trial proposition.** Don't delay but write us at once and save money.

The H. L. Hurst Mfg. Co.

1811 North Street CANTON, OHIO

Man Power Potato and Orchard Sprayer

Sprays anything, everything. Potatoes, truck, etc., 4 rows at a time. Also first class tree and vineyard sprayer. Develops high pressure and is easy to operate.

Cheap in price, light, strong and durable. Has 28-inch wheel with 3-inch wide tire, makes it easy to push along. The 10 or 20-gallon tank made of heavy galvanized iron, coated on inside with acid-proof enamel—will last 10 to 12 years.

Spray-arms adjustable to any width or height of row. Can be thrown straight up or at any angle for spraying vineyards, berries, etc. Equipped with Hurst Improved Never-Clog Nozzles. Handles all solutions.

In field spraying the machine generates its pressure automatically as you push it along, and in orchard spraying you operate the pump by hand the same as the barrel sprayer. Easily changed for either work in 5 minutes. No wrench required to do it. No leather or rubber about this pump to cause you trouble. Brass ball valves, plunger, strainer, etc. Warranted for 5 years. Write today—be first.

Gasoline Power Sprayer

For the large fruit grower. The special features of this sprayer are: short turn gear, large capacity, light weight, high pressure, automatic pressure regulator (without relief valve) cyclone agitator and a never-failing engine. The engine on this outfit is a 2½-horsepower four-cycle vertical frost-proof water-cooled engine which is very simple in construction and does not require a mechanic to keep it running. The engine can be removed from the sprayer by simply loosening four bolts and can be used for general farm work. The pump is of the duplex type with outside packed plungers, which are kept lubricated at all times by means of grease cups. At 200 pounds pressure the pump will discharge from 5 to 6 gallons per minute. The tank is made of cypress wood and is of 200-gallon capacity. The agitator is of the propeller type, which fairly boils the solution. The frame is steel which is light, strong and durable. This is the power sprayer you have been looking for. We also build this machine in the low-down type of 100-gallon tank for hilly orchards or for use with one horse. Send in the coupon below and get our special introductory offer.

☞FILL OUT, MAIL TODAY☜

COUPON H. L. HURST MANUFACTURING CO.
1811 North Street Canton, Ohio

Please send me full detailed information about your.....

.....Sprayer,
also catalog, condensed spraying guide and copy of "TRIAL OFFER."

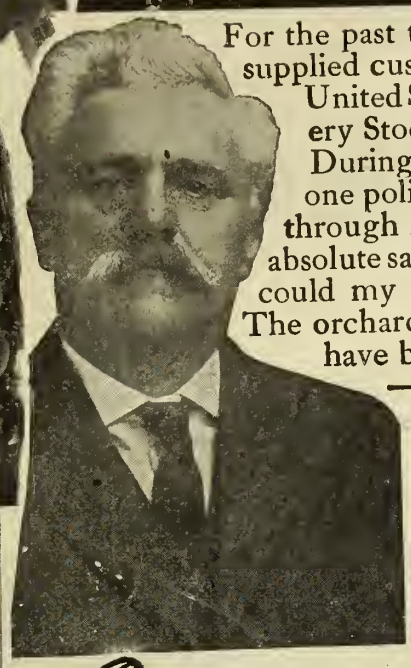
Name.....

Town.....State.....

634.05
N
v.2

I SELL TREES & SEEDS THAT GROW

SAXONIA PEA



For the past twenty-five years, I have supplied customers in all parts of the United States with Reliable Nursery Stock and Seeds of all kinds. During that time, I have pursued one policy—Sell direct to planters through my catalogue, and to give absolute satisfaction. In no other way could my business have succeeded. The orchards planted from my trees have borne fruit for many years—and the stock was satisfactory, else I could not have continued my business under the same policy, by the same management, for twenty-five years. I test them and see that they measure up to the catalogue—then you will know why my business increases in volume every year.

TREE HYDRANGEA

Carl Sonderegger

Trees That Grow

For 1912 we have a complete assortment of FRUIT TREES, FOREST TREES, ORNAMENTAL AND SHADE TREES, FLOWERING BULBS, SMALL FRUITS, GRAPE VINES, ROSES, PERENNIAL PLANTS, FLOWERING SHRUBS.

Our stock of Hardy Perennials, such as Phlox, Asters, Chrysanthemums, Peonies, Hollyhocks, Coreopsis, Achillea, Golden Glow, etc., is especially large. We can quote right prices on any quantity.

Besides all Standard Varieties, we have some specialties and novelties of great value. Gooseberries and Currants raised in tree form 4-6 feet high; Dwarf Apple and Dwarf Pear for the small garden or as so-called fillers; New Everbearing Red and Black Raspberries that yield herries all summer. We have also a good stock of Himalaya berries and offer them at very low prices. All are fully described in our catalogue.

We have some bargains in budded Apple, one year old, and have an exceptional good assortment of Peach, especially in the 2-3 and 3-4 feet sizes.

WE PAY FREIGHT ON ALL ORDERS FOR NURSERY STOCK AMOUNTING TO $10.00 OR OVER

See Some of Our Prices

Apple, budded	7c each
Pear, budded	12c each
Plum, budded	15c each
Cherry, budded	12c each
Peach, budded	7c each
Concord Grape, 1 year No. 1 plants	$3.50 per 100
Currants	.75 per 10
Black Locust, 8-12 inch	$1.60 per 1000
Catalpa Speciosa, 8-12 inch	$3.50 per 1000
Larger sizes of seedlings accordingly.	
California Privet, 18-24 inch	$3.00 per 100
Tree Hydrangea, as per picture hereby, 4-5 feet	75c each

Big 10-Cent Special Seed Offer

1 5c pkt. Mixed Colors Petunias
1 10c pkt. Extra Fine Mixed Pansies
1 10c pkt. Giant Single Pinks
1 5c pkt. Finest Mixed Poppies
30c Worth for 10c, Postpaid

36 Vegetable Packages, $1.00

1 full sized package of 36 varieties of reliable vegetables, including 2 beans, 2 cabbage, 2 lettuce, 1 sweet corn, 3 melon, 2 onion, 2 radish, 2 tomato, 1 beet, 1 cauliflower, 1 carrot, 1 celery, 1 cucumber, 1 endive, 1 leek, 1 parsley, 1 peas, 1 parsnip, 1 pepper, 1 pumpkin, 1 spinach, 1 squash, 1 salsify, 1 turnip, 1 rutabaga, 1 kale, 1 garden cress and 1 mixed herbs. **All, postpaid, only $1.**

REID'S YELLOW DENT

Seeds That Grow

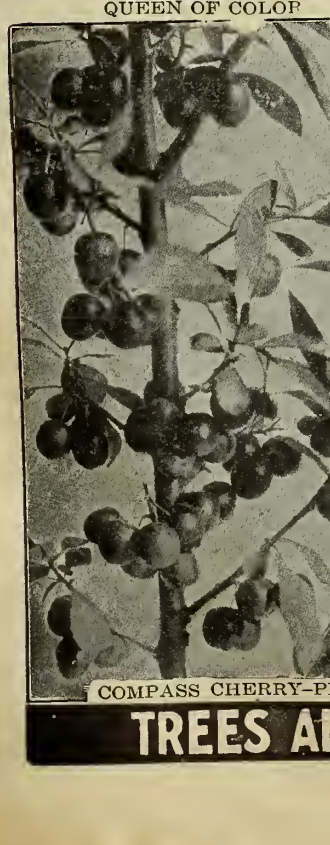
Our stock of Seeds comprises a complete assortment of the best seeds that can be produced.

Alfalfa, Clover and Grass Seeds, Grass Mixtures, Seed Corn, Seed Grain, Seed Potatoes, Sugar Cane, Kaffir Corn, Rape, Millet, Plants for Bee pasture, Tree Seeds, etc.

Vegetable and Flower Seeds. Garden Tools, Sprayers, Insecticides.

We have a new law in Nebraska specifying the purity and germination of Grass, Clover and Farm Seeds. After this, we will only furnish seeds that come up to the Nebraska Standard.

Do not overlook our Special Flower and Vegetable Seed Collections



QUEEN OF COLOR

Vegetable Seeds We wish to call your special attention to our large line of Vegetable and Flower Seeds. Aside from the Standard Varieties we have a goodly number of the Best Novelties for this season.

Our "German Ice Head Lettuce" is unequaled in quality, tenderness and size. The "Prizetaker Onion" is the largest and handsomest and most delicate flavored onion on the market. For the home garden you cannot find a better Musk Melon than the "Rust-Resistant Rocky Ford." You will also find the Sweet Corn and the New Tomatoes we offer in our novelties real Novelties of Merit.

Flower Seeds are always in demand and we furnish you the best that the world produces. We get them from the foremost European and American specialists. You will get seeds that grow.

Send for Our Big Catalogue

It is a book of 104 pages, with finely lithographed cover, containing full descriptions and hundreds of natural illustrations of fruits, vegetables and flowers. It is the most complete catalogue of nursery stock and seeds now published in America. These books cost us 15c apiece in hundred thousand lots; you can get a copy for the asking, if you write us now and mention The Fruit-Grower.

YOUR ORDER

whether large or small, will always receive our careful attention. You can send us your combined seed and tree order and need not buy two money orders, nor send to two different firms; and you will get what you order.

COMPASS CHERRY-PLUM

JONATHAN

German Nurseries & Seed House

Box 500 BEATRICE, NEBR.

TREES AND SEEDS THAT GROW TREES AND SEEDS THAT GROW

302155

L. W. Cushman, President

The CUSHMAN The World's Power Sprayer

Save $25 to $40 By Placing Order Early

More orchardists will spray **Right** this year than ever before—because more of them will use a **CUSHMAN.** A good many experiment first with a small, inefficient machine, get a taste of the extra profit and then get a **CUSHMAN** and do it thoroughly—and **get Enormous Profits.** The demand for **Fine Sprayed Fruit** is unlimited and the price high. You can hardly sell poor quality. **Fruit-Growers** are just like other folks—they wait until the last minute and then want a sprayer awful bad. Now we want to furnish you with sprayers; that's our business. We make the **Best Sprayer in the World**—no two ways about that—**Absolutely the Best,** the one you ought to have. We have never taken a second prize—have always won the **First Prizes and Gold Medals** in County, State and National Contests—we positively couldn't have done it if we didn't have the **Most Successful Sprayer**—the sprayer that will do the work best for **You and Make You More Money.** That's what you **want**—then why don't you get a **CUSHMAN and Make Your Orchard Pay Big This Year? Last year and every year**—late in the season we get hundreds of letters—and telegrams—to **Rush Sprayers.** We have to turn many of them down—we simply cannot fill all late orders—so **You Must Order Early,** or you may be forced to buy an inferior make and lose your crop and lots of money. **The Time to Order That Sprayer is Right Now**—You need not take it now—it can be shipped in the spring. **You can pay for it when you get it**—But place your order **now** and be sure of it. **We want Early Orders,**

All Sizes furnished with Tower or Without

so we can make them up before the rush. **We want your order** and we allow **You a Big Handsome Discount for Orders Placed Now. You save** from $25.00 to $40.00. Write us today and get our **Big Bargain Early Order Price.** Now don't put it off; fill out the coupon or write a letter **today, Right Now.**

L. W. Cushman

President, Cushman Power Sprayer Company

Cushman Patent Hi-Lo Spraying POLE

This is the handiest invention of the age in spraying pole equipment. The illustration shows how simple it is to have either a fine close spray or throw a heavy misty spray up into the highest limbs—with just the simple pressure of one finger. Releasing the finger instantly changes the spray to a fine close mist again.

Here Is What Prof. Thornber Says:

Washington State Horticultural Department.

Pullman, Wash., August 31, 1910.
Cushman Power Sprayer Co.

Dear Sir: Your letter of the 26th came to me today and in reply will say that thus far we have been more than pleased with the power sprayer that you loaned to us through Mr. Seaton of Spokane. While we did not receive it as early as we desired for a thorough test of our single spray work, yet we are satisfied from the pressure that we are able to secure and the manner in which the engine and pump worked, that we can do exactly what is desired with this outfit. During the spraying of our orchard we were able to maintain from 240 to 250 pounds pressure with four bordeaux nozzles and do a good thorough job not only on level ground, but on the steepest hillside orchards that there are in the country. I have used several outfits and have never found one that worked more satisfactorily than this one. I hope to get a good photograph of it on our steep lands as well as on our level lands and will be more than glad to use the outfit in demonstration work for our regular classes, short course work and demonstration trains wherever possible. Very truly yours,

W. S. THORNBER,
Horticulturist.

P. S.—Prof. Thornber is considered one of the greatest Horticulturists in the United States.

SPRAYING IS AN IMPORTANT BUSINESS PROPOSITION

No one needs to argue in this practical age that you need to spray. All successful orchardists are spraying their fruit crop—and they are getting a bigger crop and of far superior quality, and five times as much for it.

The orchardist who plants an orchard and fails to properly spray it is just as foolish as the farmer who plants a corn crop and fails to attend it properly—neither will ever get a cent of clear profit on his investment and labor.

But all orchardists do not do it RIGHT, not that their heart is not in their purpose or work, but just because they are not properly equipped.

You cannot take a one-horse shovel and properly tend 60 or 80 acres of corn—neither can you take a barrel pump or an inefficient power spraying machine and properly spray 20, 40 or 80 acres of orchard.

You Positively CANNOT Do It, no matter how earnest or how hard you work—you haven't the proper equipment, and you are losing many times the cost of such equipment in a single season.

THE CUSHMAN POWER SPRAYER is the most efficient spraying equipment manufactured—and we offer below undisputable proof, just such as you would be delighted to voluntarily give after using one of them yourself.

Mayview, Mo., June 10, 1911.

Cushman Power Sprayer Co.

Dear Sirs: I have been thinking for some time I would write you about my spraying operations. You will remember I got my machine late in 1910, and made but one spray. We were green hands, never saw a sprayer operated, and knew nothing about a gasoline engine, but got along fairly well, putting out some days eight tanks.

This season, I made dormant spray and two since bloom. We used 160 to 200 pounds pressure and sent mixture inside as well as outside tree. We had minor troubles, but when located were easily adjusted.

I cannot better express my appreciation of the outfit than to say, if from fire or any cause, I should lose this one, I sure would order another of your make. Its lightness of draft, adjustability, and "workability" are satisfying.

Auto and gasoline men pronounce engine a dandy. If you keep using good material, I wish you continued success. Yours truly,

EDWARD S. BUTT.

Peru, Neb.

Mr. L. W. Cushman, Pres.,
Cushman Power Sprayer Co.

Dear Sir: I am glad to note that you company has increased its capitalizatton for the purpose of manufacturing your sprayers on a more extensive scale. The machine which we purchased of you has given excellent satisfaction. In fact your sprayer is proving so satisfactory to orchard men in Nemaha County that it is being purchased almost to the exclusion of all other makes. Wishing you success, I remain. Very truly yours,

C. R. WELDON,
Secy. Peru Fruit Farms.

Cushman Standard No. 3 Spraying Equipment With Tower

—with Four Horsepower Engine, mounted on Cushman Standard Oak Beam Truck. Capacity of pumps Ten Gallons per Minute—2[illegible] fu[illegible]

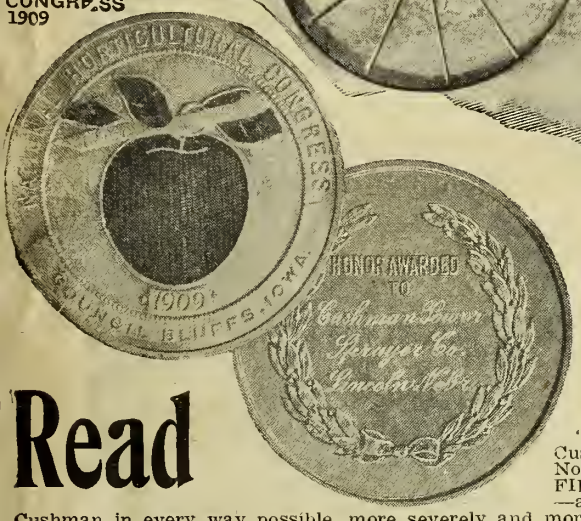
Best

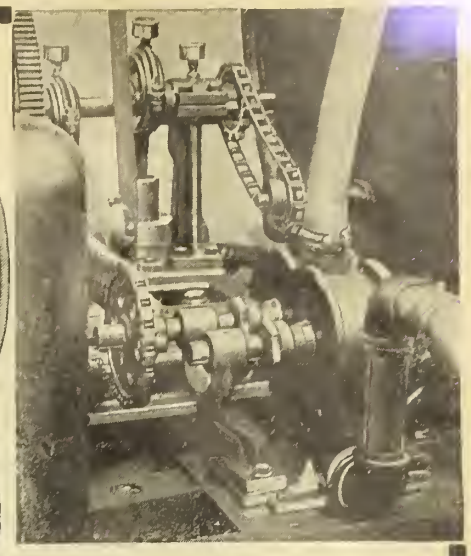
Cushman Standard No. 1 Spraying Equipment

with 3-Horse Power Engine mounted on Cushman All Steel Truck. Capacity of pumps six gallons per minute—250 pounds steady pressure GUARANTEED.

Also furnished on Cushman Standard Oak Beam Trucks.

GOLD MEDAL AWARDED US NATIONAL HORTICULTURAL CONGRESS 1909





Tank Refilling Pump

The Cushman Automatic Rapid Tank Refilling Pump will elevate fifty gallons of water per minute from stream, pond or shallow well—doing away with necessity and expense of building overhead tanks. Instantly thrown in or out of gear—the regular spraying engine furnishes all power required. Equipped with Cushman Improved Double Bearings.

Read

What the Expert Judges Said—

"Put the Gold Medal on the Cushman, it's the Best Sprayer." Notice that the Cushman won FIRST on every point, except one—almost won that. They tried the Cushman in every way possible, more severely and more exacting than you could ever have need to—it never balked, it never faltered, it never failed in even a minor part. It's the best built sprayer—it's the easiest operated sprayer—it's the most powerful sprayer. That's what the judges said.

Notice that these are three of the greatest horticultural authorities we have in this country—men with a big national reputation. They were appointed by the GREAT NATIONAL APPLE CONGRESS, absolutely impartial, and they tested the different sprayers thoroughly—point by point—and the CUSHMAN WON in every test with one exception.

IF YOU WANT THE BEST—you cannot afford to buy anything but the best, your orchard profits depend upon it. WE KNOW WE MAKE THE BEST SPRAYER—but leaving you as the whole judge of the matter—COULD YOU AFFORD TO IGNORE SUCH UNIMPEACHABLE PROOF? Now what the Cushman did in this contest it will do every day in your orchard, and it will do just as superior spraying too—as it did over all others in the hands of the judges.

We have hundreds of letters from users all over the country saying that it does all we claim for it—and we claim all that THE WORLD'S BEST SPRAYER OUGHT TO DO.

We have hundreds of letters also from inquirers, saying "one of your customers advised me to get nothing but a Cushman."

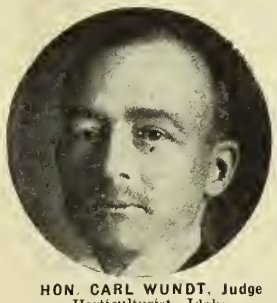
We have hundreds of letters too, from big orchardists and Agricultural Colleges who have used several makes and they say "The Cushman is far the best;" and when they order more, they invariably buy more Cushmans.

It is far better to get a Cushman to start with than to wish afterwards that you had. You need a Cushman—we want to sell you the Cushman.

Don't buy an imitation or a substitute—get a genuine Cushman and be satisfied.

Official Report Spraying Machine Contest National Horticultural Congress

Report of The American Society of Agricultural Engineers Held at Council Bluffs, Iowa, Nov. 10-19, 1910



HON. CARL WUNDT, Judge
Horticulturist, Idaho
Expert Orchardist.

PROF. F. W. FAUROT, Judge
Missouri State Horticultural Dept.
Spraying Expert.

PROF. L. W. CHASE, Judge
Nebraska State Uni. Mech. Dept.
Mechanical Expert

Abridged SCORE CARD Class "A" Power Sprayers

WON 1ST. | WON 1ST. | WON 1ST. | LOST BY ½Pt. | WON 1ST. | WON 1ST. | WON 1ST.

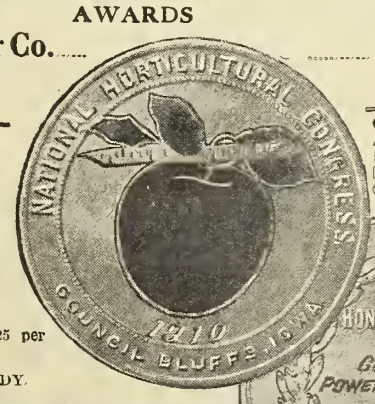
Entry No.	NAME	Capacity and General Operation	Economy of Operation	Construction	Conviences and Accessibility	Weight	Cost	Total
	Points	225	200	225	100	150	100	1000
5	Beck	150.8	129.1	168.5	75.5	122.5	82	728.4
4	CUSHMAN	165.54	155.2	185.0	84.5	127.5	85	802.7
3	Hardie	164.5	109.4	169.5	81.5	103.0	77	704.9
2	Deming	130.8	107.6	154.5	77.0	100.0	79	649.1
1	Peerless	129.4	109.2	166.5	85	109.0	71	670.1

AWARDS

Cushman Power Sprayer Co. ..... **GOLD MEDAL**

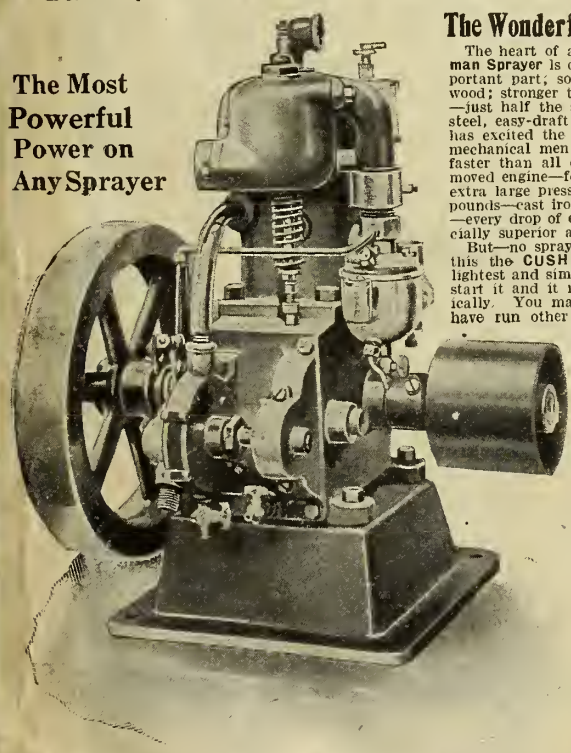
Beck Sprayer Co., Silver Medal

Hardie Mfg. Co., Bronze Medal



GOLD MEDAL AWARDED US NATIONAL HORTICULTURAL CONGRESS 1910

The Most Powerful Power on Any Sprayer



The Wonderful Power of Cushman Sprayers

The heart of a Sprayer is its **Power Supply. The Cushman Sprayer** is different all over— far superior in every important part; solid galvanized steel tank where others are wood; stronger truck frame and wheels; flexible short turn—just half the space others require to turn in; wide tire, steel, easy-draft wheels; a duplex spraying force pump that has excited the highest praise and admiration from expert mechanical men; a tank refilling pump that is better and faster than all others—50 gallons to the minute; easy removed engine—for other uses; solid steel tower—detachable; extra large pressed steel air-pressure chamber tested to 500 pounds—cast iron is very dangerous; a perfect mixing device—every drop of even strength;—and hundreds of other especially superior appliances found only in the **CUSHMAN.**

But—no sprayer is greater than its power supply, and in this the **CUSHMAN** far outshines all others. It is the lightest and simplest gasoline engine ever built—a child can start it and it runs and governs itself absolutely automatically. You may have seen other engines work—you may have run other engines, but if you have never seen the **CUSHMAN Sprayer Engine** work, you have a real pleasant surprise awaiting you. Runs just like a clock, pulls the hardest load, and never shirks—it is the most powerful power built. It will deliver a spray as fine as mist; put it in the highest trees—not just one lead of hose, FOUR of them, if you want them. It will maintain 250 pounds pressure with four nozzles—**Guaranteed to do it, and it uses less gasoline.**

Two men can easily lift the engine off or on the sprayer, the engine being furnished with an extra general purpose base Free of Charge; so you can use it for other work around the farm, such as grinding feed, sawing wood, pumping water, running the grain binder, fanning mill, corn sheller, cream separator, washing machine, etc.

The CUSHMAN Sprayer Engine is a wonderful little power-maker, developing **over four horsepower,** and is one of the big points of superiority of the **CUSHMAN POWER SPRAYER.**

This Test Convinced a Great Orchardist

Mason City, Ia., Nov. 19, 1910.

Mr. L. W. Cushman.

Dear Sir: Have just received a copy of the Council Bluffs paper giving a list of the awards there. Allow me to congratulate you on your success and that together with the satisfied customers I met there, makes me pleased to give you an order. Please find Chicago draft enclosed for 25 per cent as first payment on complete outfit.

Yours truly,
GEO. H. PURDY.

This Coupon Will Save You $25 to $40

Put YOUR Orchard-Spraying Problems Up to US. Furnishing Spraying Equipment to most of the largest orchards and to most of the successful horticulturists brings us into close observation of their methods of success and enables us to consult with you intelligently and help you to succeed—this advice is free, and we will be glad to have you write us freely. But don't neglect to take advantage of this Special Early-Order Bargain Offer—you must act now or you cannot get it later.

WRITE TODAY. ADDRESS ALL INQUIRIES AND CORRESPONDENCE TO

CUSHMAN POWER SPRAYER CO.

Main Factory, ST. JOSEPH, MISSOURI

Cut Out This Coupon And Send Today

Cushman Power Sprayer Company
St. Joseph, Missouri

SEND ME—Complete Information about your World's Best Sprayers and Your Special

Early Order Bargain Price

WHEREBY I CAN ORDER NOW, TO HAVE SHIPPED LATER, AND SAVE $25.00 TO $40.00

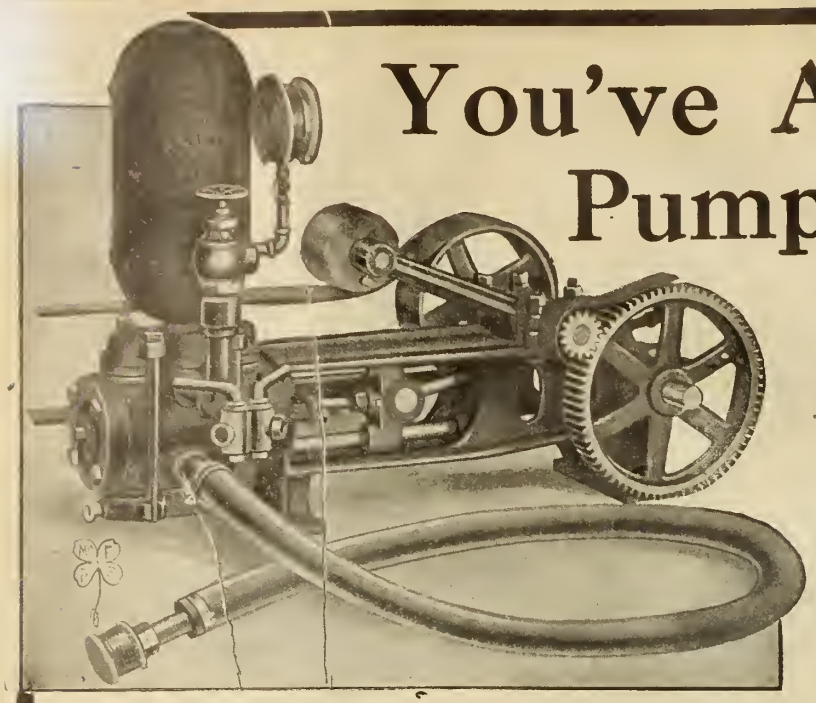
I have.....acres of Bearing Orchard.....

Name .....

Town .....

R. F. D. No. .....State.....

(It is understood this inquiry places me under no obligation to buy.)



You've Asked for a Spray Pump That You Could Run With the Engine You Already Have; Here it is, and it is Well Worth Waiting For, Too!

Heretofore, in order to have a Power Sprayer at all, you've had to do one of two things—get one from the makers, all complete, engine and all, or else rig up a pump as best you could to the engine you already have. This latter course *ought* to have worked all right, but it frequently *didn't*—because the pumps generally supplied weren't especially designed for the work. But the demand has kept growing, and so, during 1911, we looked carefully into the situation, decided that there was a big field for such a machine, and set to work in a thoroughgoing way to bring out a pump that would really answer the purpose. And here it is—

The Deming "Fig. 765" Power Spraying Outfit

Think over the things you'd require of such a sprayer. Of course, if you have very large orchards, you'll need some regular power sprayers beside, but think what a convenience such a machine as the Deming "Fig. 765" would be, particularly in a rush time, or when one of your other pumps is "laid off" for one reason or another.

The first essential in practical spraying work, of course, is **pressure.** There is lots of **vibration** to the average gasoline engine, even when it's firmly bolted down—and when you go to hauling the average "home-made" power sprayer over the ruts and bumps and hill sides of an orchard it isn't so very long till the engine begins to wiggle out of line a little, pulling the pump piston out of plumb, too. Even a sixteenth or thirty-second of an inch will make trouble which in this case means **friction**—the pump plunger pulls **sidewise** instead of straight forward and back, and a lot of the power that ought to go to **make pressure** goes to waste instead.

And here is another trouble you'd have if you were to try to fit up your engine to an ordinary spray pump—that of getting it connected up properly. If you were to use a belt, it would probably be so loose as to always be jumping off, or so tight as to waste power. If you used gearing, it would be still worse; for then you'd have the question to settle of speeding the pump—how to run it fast enough, yet not race it to death.

The Deming "Fig. 765" Spray Pump Comes to You Ready to Run—and Run RIGHT

Please take a good long look at this picture—we've made it large, so you could see all the details. Notice first of all how stout and substantial it is—every inch of it planned carefully, and figured over and over again.

It is made on a rigid framework of cast iron and weighs about 200 pounds. We do not think there is an unnecessary ounce of metal anywhere about it, and the weight is distributed so the machine is well balanced. It stands 25 inches high to the top of air chamber, and is about 35 inches by 14 inches over all. It can be operated by any engine of two horsepower or more.

The connection with pump and engine is with a belt which cannot jump off. We furnish the iron pulley; all you need to do is to tell us how fast your engine runs; we'll send a pulley of the proper size to speed your pump just fast enough. We also furnish the belt—and our way of connecting it does away with the usual objection. We furnish a spring idler, which always keeps the belt just right—not so tight as to waste power nor so loose as to jump off and make trouble. The gear wheels are accurately cut, so as to insure smooth running.

Strong and Substantial and Durable, But Not Clumsy

—that's the way we would describe the Deming "Fig. 765." Look again at the picture, and you'll see that the cross-head connected with the plunger-rod, is **guided above and below**—no matter how much of a sidewise pull it got, it couldn't go in any direction but **straight back and forth.** That means the plunger can be fitted snug and close in the cylinder, **making pressure;** keeping the liquid moving forward instead of letting some of it slip back. That gets away from the "lost motion" trouble.

Another good point is the good-sized air chamber. This gives plenty of buoyancy, or "spring" to the pumping, and holds the pressure steady.

The Deming "Fig. 765" has connections for four leads of hose, each with separate cut-off cock. It has automatic relief valve and standard pressure gauge, registering up to 400 pounds. The working parts are of real brass. Pistons, valves, cylinder linings—all parts where liquid touches. Iron or steel will rust out, but brass cannot; iron costs less, but brass is more economical.

We Want You to Write and Ask All the Questions You Wish

We have gone into detail in this because we want you to know all the particulars. **Now** we want you to write and ask questions. We have told you the general facts about a mighty good machine, but you want to know what it can do for you, and we want to tell you. Tell us what kind of an engine you have, its rated horsepower, speed, type—whether vertical or horizontal—and we'll send you full information, prints and quotations.

We Make More Than Twenty Other Sprayers—Catalogue Free

You may conclude that you need some other kind of sprayer this year. Come to us, we'll fit you out. We make regular power outfits of various types—machines that have been tested in every fruit-growing state in the Union, and that have made good. Beside, we make hand-power Sprayers from the largest to the smallest—barrel sprayers of many styles, knapsack and bucket pumps for gardens and poultry houses.

Our Catalogue is ready for you and will be mailed on request.

Consult Your Dealer or Our Nearest Agent

We have general agencies in principal cities, and Deming Sprayers are handled at leading hardware and implement stores. Your dealer has our prices, or can get them. Better consult him **at once.** Insist upon his supplying you with **Deming Outfits;** if he refuses, show him you can refuse, too, and write us direct, mentioning his name. If you cannot secure them at home we will supply you direct at factory prices.

THE DEMING COMPANY *Makers of Pumps For All Uses* **330 Success Bldg., Salem, Ohio**

DEMING

SPRAY PUMPS

DEMING

GOULDS PUMPS
STRENGTH DURABILITY EFFICIENCY
FOR EVERY SERVICE

You've Got to Spray If You Want Good Fruit

You can do thorough work spraying *only* with the most efficient pump and outfit. No other kind of spraying is worth while—no other spray pump is worth bothering with. That's why you should buy a

Goulds Reliable Sprayer

Goulds Sprayers are, first, designed to meet spraying conditions most efficiently; then, built of the proper materials to give long service and resist the action of spray chemicals. Made in all types, for hand and power.

Don't buy a spray pump because the first cost is low. A Goulds Sprayer will prove the most economical you can buy.

Send for our booklet—

**"How to Spray—
When to Spray—
Which Sprayer to Use"**

The numerous and authentic spray formulas it contains make it of greatest value to every crop grower.

The Goulds Mfg. Co.

40 West Fall Street,
Seneca Falls, N. Y.

Largest Manufacturer of Pumps for Every Service

Two Famous STARK Books FREE

Stark Orchard Planting Book and Condensed Stark Year Book

Two splendid, practical volumes which tell the amazing story of modern-day fruit-culture. Two books filled with invaluable, down-to-the-minute information on orcharding in all its phases; complete descriptions of varieties, season of ripening, locality where each variety does best, etc. They tell a common-sense though sensational story of profits that are being made from commercial and home orchard growing. These books show just what **you** can make from a Stark Orchard. **And they are both free.** Use the coupon.

Stark Orchard Planting Book

A book of trustworthy information given free to the whole world—not a catalogue or piece of advertising literature, but a well of information on the planting and care of trees from the day they are received from the nursery. The contents is not the result of one man's experience alone. It is a collection of the knowledge and experience of many men. Each has spent a large part of his life working with trees. Many have had scientific training. All are rich in that greatest of all knowledge—**practical experience.** It tells the real secret of success in orchard planting.

At Planting Time Most Mistakes Occur!

This invaluable book explains in simple language, how to avoid those failures in fruit-growing that are directly due to easy-to-make mistakes made **when the trees were planted.**

We cannot begin to tell you here the priceless information contained in this small but most valuable book. You must have the book itself. Send for it now. Use the coupon. Or write a card or letter today, without fail, for this truly remarkable volume.

Please send me another copy of the Stark Orchard Planting Book. This booklet contains very timely, valuable and some belated information. I am sending copy today to a young man who was at my place yesterday, and who is starting an orchard.—C. O. Reed, Proprietor, Model Fruit Farm, Oregon Co., Mo.

Your Stark Orchard Planting Book is the best thing I have ever seen. It is what the tree planters need badly; if they will read this book and follow the instructions they will be much benefited.—J. P. Fourot, Orchardist, Sumner Co., Kansas.

The Stark Orchard Planting Book received. This is something that I have often thought should be in the hands of every planter. Will greatly aid them to make a success of the trees planted. I think it will be appreciated by all.—A. F. Buvinger, Labette Co., Kansas.

"Will you kindly send me one of your "Stark Orchard Planting Books?" Have just run across one borrowed from a friend and think it is the best and simplest information on the subject of planting and pruning trees I have ever come across. Would be pleased to have one for reference and if there is any price attached to it let me know and it will be forwarded. Trusting you have some left, I remain —R. M. Adams, Lancaster Co., Pa."

Condensed Stark Year Book

"A Diamond Mine" of Information

Here is a book as different from the usual run of nurserymen's catalogues as day is from night. It is a veritable mint of boiled-down information on varieties for commercial or home-orchard planting, season of ripening of all varieties of all fruits, letters from successful fruit-growers from every part of the country, comments by our national horticultural authorities, etc., etc. It also gives the facts about Stark Trees and quotes prices. Every statement in this book is backed by a million-dollar nursery. Planters the country over say this is the best, the most valuable and most practical book of its kind ever published. We have thousands of this kind of letters.

Stark Year Book received. I have several good horticultural works, but I believe your Year Book contains more valuable, up-to-date suggestions for the new beginner (or the old one either), than any of them.—John A. Minger, Nemaha Co., Kansas.

Permit me to thank you for your handsome catalogue. It is the most comprehensive of its kind I have ever seen. The color plates are beautiful, and of great assistance in selecting fruit.—J. O. Lewis, Wash. Co., Tenn.

Copy of the Stark Year Book received. It is not only the most beautiful and artistic work of its kind ever issued, but the most practical guide for the planter of fruit and other trees. The text is unique in many ways, especially in the directness of statement and the absolute worth of the various trees and fruits described. It should be in the library of every fruit grower. — Thos. F. Rigg, Iowa Horticultural Experiment Grounds, Hardin Co., Iowa.

Neither the Condensed Stark Year Book nor the Stark Orchard Planting Book can be purchased. They are our free gift to you. You might as well have these book treasures in your home. They are waiting for you to ask for them. Send the coupon today.

$500 to $2,000 Per Acre With Stark Tree Orchards

To grow **paying crops**, you must have **good trees.** To be positive that your trees are **right**, deal with this, the greatest nursery in the United States—a firm famed for its honest policy for **over three-quarters of a century—86 years.**

It is not unusual for Stark tree growers to gather from $500 to $2,000 an acre from their trees, as you will note by the following true testimonials:

$1,500.00 FOR ONE CROP OF STARK DELICIOUS PLANTED ON LESS THAN ONE ACRE

"I have 36 Stark Delicious trees nine years old. They began bearing the third year and have borne every year since, the largest crop being that of this year, 1910, averaging 15 boxes to the tree. The gross returns from these trees this year will not be less than $1,500.00. I have already sold 250 boxes for $3.25 per box and the balance will bring from $2.00 to $2.50 per box. If I ever plant another orchard, one-half of it will be to Stark Delicious."—S. F. Burgess, Chelan County Wash.

$1,250.00 NET FROM 2 ACRES OF BLACK BEN

"The car-lot of Black Ben apples which were awarded the $500 prize at the Denver National Apple Exposition in January, were grown on a 2-acre orchard two miles east of Fruita, Colorado. The 160 trees on this two acres are Stark trees, eight-year-olds. Every one of these 160 trees are as nearly perfect as it is possible for trees to be, and from them 1,250 bushel boxes of the most beautiful apples were picked this last fall. Mr. J. C. Wilson, the owner, received for the apples from this two acres, $1,250.00 net." — Dr. S. P. Green, President, Fruita Chamber of Commerce.

STARK DELICIOUS VS. SPITZENBURG

"Have just sold crop of Stark Delicious, buyer to take all sizes and grades at $2.37½ per box. Buyer furnishes lining and wrapping paper, grades and packs the apples and nails them up.

"Spitzenburg has always been the highest price apple in this valley. This year the average price of Spitzenburg is about $1.50 per box; grower to do the packing, grading, etc., so you see the Delicious is selling for a dollar more than any other variety. My orchard is seven years old; this is the third crop. Some trees this year produced as high as ten boxes."—Dick Hart, Yakima Co., Wash.

Besides buying **guaranteed trees at low prices**, each Stark tree buyer may receive the FREE services of the famous **Stark Special Service Department.** Only a company of the size and experience of Stark Bro's could maintain such a staff of experts—men who are Tree Specialists—Horticulturists who have had both scientific education and still better, have the knowledge which comes only from years and years of **practical experience.**

These specialists advise you **free of charge** as to the best varieties for **your particular locality**, for commercial or home orchards, best planting methods, pruning, the secret of spraying, care of trees, etc. In short a wealth of priceless information is yours. Use this remarkable, FREE service now. Write us **today** about your plans for spring planting.

110

Free Book Coupon

Stark Bro's Nurseries & Orchards Co.

Louisiana, Missouri

Send me free books without obligations on my part.

Name .....

Address .....

I expect to plant.....trees this spring.

FILL IN, CUT OUT and mail this Coupon today for two Free Books

Stark Bro's Nurseries & Orchards Co.

110 Stark Station

Louisiana Missouri

THE FRUIT-GROWER

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Volume 23 | ST. JOSEPH, MISSOURI, JANUARY, 1912 | Number 1

CONTROLLING THE MOTH

How Ninety-nine Per Cent of Perfect Apples Were Secured at Morrisania Last Year

Ever since an article was published in The Fruit-Grower stating that less than one per cent wormy apples were harvested at Morrisania during the past season we have been receiving letters from subscribers wanting to know how these results were secured; how many times we sprayed, when the the applications were made, what solutions were used, and so on.

The orchard at Morrisania was sprayed only twice, but I want to say at the outset that because we controlled codling moth by spraying twice there, it does not by any means follow that two sprayings will be effective everywhere. In fact, I am persuaded that it will not succeed in many places. In the first place, there are no fungous diseases at Morrisania,

READY FOR FIRST APPLICATION FOR CODLING MOTH

Begin spraying when the petals have fallen, and the young tube-like apples look like this. In about five days the sepals, which are now turned back over the stem, will have closed, and then it is too late for effective spraying. In sections where apple scab prevails use Bordeaux mixture or lime-sulphur with this application. This spraying, to be effective, must be finished within a week from the time young apples are in this condition.

and all spraying for apple scab and other diseases were omitted. The solution used was arsenate of lead and water; the first application was with a mixture of two pounds of arsenate of lead to fifty gallons of water, the second was a little stronger, being two and a half pounds to fifty gallons.

Before one can be successful in spraying one must know what one is spraying for. In fighting codling moth the first application is to fill the blossom end of the young apple with poison before the sepals close over; then when the newly hatched worm attempts to enter the young apple at this point, as most of them do, the dose of poison is ready for him. The second application is to afford further protection against this same worm, and not against the second brood, as so many fruit-growers have believed. This second application is to coat the young apples with a dose of poison, so that if the worm tries to eat his way into the fruit he will be poisoned. There are but two ways for the young worms to enter the apples: Through the calyx end or through the side, and if the two applications have been properly made, a protection will be ready to prevent entrance at either point.

Now, when shall the applications be made, what poisons shall be used, and so on?

The accompanying illustration shows the exact condition of the young fruit when our first application was started in our spraying at Morrisania; before the spraying was finished the sepals were more nearly closed. Our apples were in full bloom on May 7, everything but Rome Beauty and Janet being out in full at that time. Jonathan and White Winter Pearmain started to bloom about a day ahead of Ben Davis and Gano, but the latter varieties were in full bloom as soon as the other two varieties. We began spraying on the morning of May 11, practically all the petals having fallen from all varieties except Janet and Rome Beauty.

Before the trees were in bloom spraying outfits were overhauled, new nozzles secured and everything made ready, so that the work could be started at just the right time. It is a great mistake not to test all machinery some time before it is needed, so that there will be no delay, for a delay of even a few days in making the first application for codling moth is fatal.

The second illustration shows an enlargement of the young apples, with one of them cut through to show a longitudinal section. This picture shows the little cup-like cavity which is to be filled with the poison. Below this is the inner cavity at the base of the stamen bars, and is not the outer cavity formed by the sepals themselves. The stamen bars are the white, thread-like stems with a small knob, called the anther, on the end. When the petals of the blossom first drop these stamen bars are plump and lie tightly against each other, so that it is hard to force the spray mixture between them to the inner cavity. A day or two after the petals have fallen these stamen bars will begin to shrivel, leaving very small crevices between them, and then is the time to spray effectively.

Varieties differ greatly as to the condition of these stamen bars, and advantage should be taken of this in spraying. For instance, we found at Morrisania that as soon as the blossoms were off the Black Twig trees the stamen bars of the blossoms had wide cracks between them, and therefore, we began our spraying in the Black Twig block. The Jonathans were next ready, but the stamen bars of this variety never lie as far apart as they do in the blossoms of the Black Twig, and one should not wait for this condition. The same is true of Ben Davis and Gano; after a day or so the stamen bars will have wider openings than at first, but never as wide as in the Black Twig blooms.

It will be seen from the foregoing paragraphs and from the illustrations that it is essential that the spray mixture carrying its dose of poison be forced between the stamen bars to the inner cup. To accomplish this result great force is necessary, and it is also important that a coarse nozzle be used, so that the liquid can be literally driven into the blossom end of the young apples. It is likewise apparent that in spraying the trees every effort should be made to direct the stream straight into the blossom end; a side sweep will not do, for the direction of the stream is then not into the blossom end.

Just here is where many fruit-growers fail in their spraying. They don't direct their nozzles right, nor do they stay long enough with one tree to accomplish best results. Look upon the sepals as a funnel into which you are trying to shoot the spray mixture; you will then realize that your nozzle must be pointed directly into the funnel, or the mixture doesn't go in.

At the first application the blossom ends of the young apples are turned in every direction, but generally upward. It is important that the spray be applied from every direction. If trees are large a tower must be used, so that one man can direct the spray from above. At Morrisania we used two machines without towers on the smaller trees, and on the larger ones used a tower. Every lead of hose was fifty to sixty feet long, and every man used a ten-foot extension rod. Each rod was equipped with a Y so that two Bean Clipper nozzles were used for each rod. This made four nozzles for each of two outfits and six nozzles for the machine with the tower.

Our engines worked against a pressure of 200 to 250 pounds per square inch, and we tried to keep up a maximum pressure all the time. One man drove the team and watched the engine, and a stop was made at every tree. I have heard men say they could do a good job of spraying by driving along between the rows, not stopping at any time, but I am very doubtful of results from this kind of spraying. The two men with extension rods went clear around every tree, and sprayed the tree from every angle. Where the trees were small the quarter-turn at the end of the rod enabled them to spray the trees from above; as they went around the tree they sprayed from one direction, and then as they retraced their steps they sprayed the blossoms from the other direction; turning the rod so that the spray mixture was forced upward, the men were careful to fill the calyx cup of every apple which was turned downward, and instructions were not to leave a tree as long as they thought any apples had failed to get a dose of poison straight into the calyx end.

We operated three power outfits in our orchard of forty acres, and don't believe this is any too many machines to insure the first application for codling moth being made in time. The work had to be done within a week, and, we found that we sprayed about two acres per day with each machine, so that three machines for forty acres is just about right; I would put fifty acres as about the maximum that can be satisfactorily sprayed within a week's time with three sprayers.

How much mixture was used per tree? That depended on the size of the tree and the quantity of bloom. Our

JUST RIGHT TO SPRAY

This illustration shows the right condition for spraying first time for codling moth. The young apples are magnified to better show condition. The illustration at the right shows the inner cavity which must be filled with poison; also the stamen bars, past which the spray mixture must be forced. At the lower corner is shown the calyx end of a young apple. In order to be effective the spray mixture must be directed straight into this open end with great force.

trees at Morrisania are all small; they had been severely pruned and shortened back, so that all the apples were gathered from a ten-foot ladder; perhaps a third of the fruit was gathered from the ground. For this first application for codling moth we used on an average about ten gallons of spray mixture per tree. This doesn't mean anything unless one knows the size of tree, however, for if some trees here in the Middle West were as well sprayed as were the small ones at Morrisania, about thirty gallons of mixture would be required. Don't think of stopping at this application when trees begin to drip; they will be dripping before you are well started. Spray until you feel that every

APPLE HARVEST SCENE IN THE ORCHARD OF J. L. SPEECE, NEBRASKA

young apple on the tree has had a dose of poison directed straight into the blossom end, and then you can drive to the next tree.

A coarse spray should be used at this application, and we used the Bean Clipper nozzles, which are of the Bordeaux type, and the men held the nozzles as close to the apples as they could. As already stated, the strength of the mixture was two pounds arsenate of lead to fifty gallons of water.

The Second Application.

Remember that the first application was made some weeks before the codling moth eggs were laid, and the application was made then to get the poison in the blossom end before the sepals closed over. Now, when shall the second application be made?

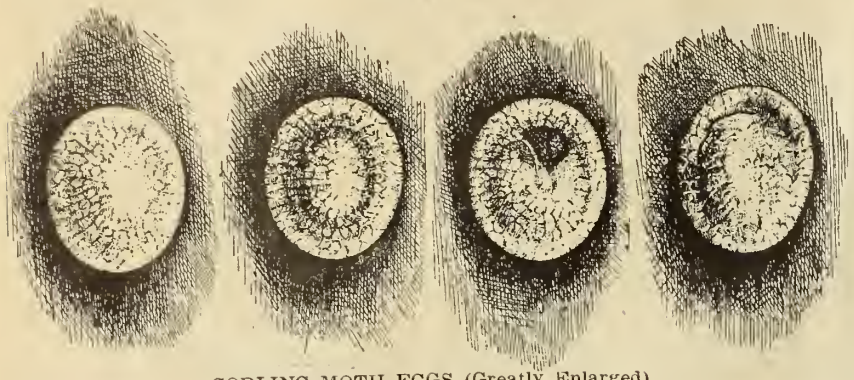
Some men say it should be made three weeks after the first, or a month after the first, and so on. We followed Prof. E. P. Taylor's instructions and made the second application about three days after we found the first codling moth eggs. In our case, we found the first eggs just three weeks after we began the first spraying, and we began the second spraying twenty-five days after the first one was started.

The object of this second application, as previously stated, is to coat the young apple, which by this time is as large as the end of one's finger, with poison, so that all worms which attempt to eat their way into the fruit will be poisoned. It is obvious, therefore, that this application should be made at as late a date as possible, and still be just ahead of the hatching of the eggs. If made too early, rains may wash off the poison, or the swelling of the apple will thin out the poison so that the entire surface will not be protected.

Careful inspection of the trees was made every day, beginning about twenty days after the first application was started, to find the first-laid codling moth eggs. These eggs are not easily located until one has learned how they appear, and then they can be found quite readily. These eggs of the first brood are usually laid on the upper side of a leaf near a well-developed young apple. The mother codling moth is too careful of her offspring to want the young worms, or larvae, to crawl far, and therefore she usually puts the eggs near the food supply. Seldom will codling moth eggs be found far away from the young apple. These eggs are small, about the size of a pinhead, but instead of being perfectly round they are somewhat oval in shape; they are therefore at the narrowest diameter, a little smaller than a pinhead. The egg looks like a very minute drop of milk which has flattened out on the leaf; in fact, it looks as if it had been "plastered" on the surface of the leaf, and when fresh-laid presents a milky appearance, and is rather glossy. Some persons have mistaken small drops of spray mixture, from the first application, for codling moth eggs, but the former are chalky white deposits on the leaves, while the eggs are milky and glisten as they catch the sun.

We are using an illustration from Prof. Taylor's article in The Fruit-Grower for February, 1911, which shows the shape of these eggs, this illustration being greatly enlarged. As the eggs become older they change their color somewhat, and with the aid of a good magnifying glass one can see the embryo worm before it leaves the egg.

When we found the first codling moth eggs we made ready to start spraying about five days later, so as to time our spraying with the hatching of the eggs. Since this application is to coat the young apple with the poison, we made several changes in our equipment. We used the same extension rods, equipped with a Y, but used the Bean Whirlpool nozzle at this application. This is one of the new-style nozzles which are rapidly replacing the old Vermorel type. The Friend nozzle is one of the best of this type, but none were at hand, and we used the Whirlpool. This nozzle throws a very fine mist, and this is necessary if the spray mixture is to stick to the young apples.



CODLING MOTH EGGS (Greatly Enlarged)
The one on the left shows a newly laid egg, and the others show the development until hatching time. From the slit shown in the upper portion of the egg at the right the young larva has emerged.

High pressure was maintained by our engines, but instead of holding the nozzle close to the fruit, we held them as far away as possible, to permit the stream to break up into the finest possible mist before reaching the apples to be covered. This is the time when one should stop when the liquid begins to drip from the trees. Spray the tree carefully, but move the extension rod quickly, so that too much of the mixture will not be deposited in one place, and run off.

At this application we used two and a half pounds of arsenate of lead to fifty gallons of water. Not as much solution is required for this second spraying. Leaves catch considerable of the mixture, but even then a tankful will go farther than at the first application. Perhaps about eight gallons will protect trees at this application, where ten gallons were needed for the first.

Now, how shall one determine if further applications are necessary to control codling moth? Theoretically, if the first two applications just described have been properly made, at just the right time, every insect of the first brood will be destroyed. Practically, this is hardly likely to occur: there will be some worms get past the poison, and whether a third application is necessary will depend entirely on the number which escape the poison intended for them.

At Morrisania we put burlap bands about the trunks of a number of trees of different varieties, in widely separated parts of the orchard; these bands were put on about the middle of June, and were examined every week, to see how many larvae or codling moth had crawled under them to pupate. Very few worms were found under these bands, nor could we find any wormy apples on the trees. The various fruit inspectors who visited the orchard were of the opinion that a a third spraying would be a waste of money, and no further spraying was done. If one had been needed, it would have come about four to five weeks after the second, and the purpose of it would have been the same: To coat the apples with poison, so that worms attempting to enter would be poisoned.

It has taken considerable space to tell this story, but there is no reason why everyone who wants to fight codling moth should not succeed in keeping his fruit free from worms. Someone may ask, "Is it possible to protect apples as effectively where rains are likely to occur?" I believe the first spraying will be just as effective in one place as in another if power sprays are used with about 200 pounds pressure, and the extension rods equipped with coarse nozzles, and the liquid driven into the calyx end of the apples, where the rain will not wash it out. I believe that with proper pressure and coarse nozzles one can even make this first application in the rain and be successful—indeed, I would recommend that one spray in rain, rather than wait until the sepals have closed on the young apples. The second application will unquestionably be washed off if rain falls within a day or so after the liquid has been put on. But if sufficient time has elapsed to permit the water to evaporate, the poison will have "set" so that it will not be readily washed off. If rain does wash off the poison, however, make another application as soon as possible.

If there are any points in this article which are not made clear, ask questions. Let us all make a vigorous fight against codling moth this season. This insect can be absolutely controlled by proper spraying. There is no longer room for argumen', and it only remains for growers everywhere to spray properly. In some places, where worms have a strong foothold, it will likely be necessary to spray for the second brood. But even three applications is much better than letting worms take from one-fourth to three-fourths of the apple crop. The time will come when wormy apples will be an evidence of neglect—indeed, we may well ask ourselves if that time has not already come. The codling moth larva can certainly be poisoned, and it is up to us to see that it gets its dose.

SPRAYING IN THE SPEECE ORCHARD

Good Work in a Ninety-Acre Orchard.

In my orchard I usually spray three times, making one application with lime-sulphur before the buds open; then again when the blooms are almost off I spray again, and in about fourteen days I commence with the third application.

In this way I have been very successful in controlling scab and the codling moth. I use a power sprayer, working at 180 to 200 pounds pressure, which gives a very fine spray. The spraying outfit is provided with a tower in which a man stands, and covers the upper half of each tree, while another man on the ground sprays the lower portion of the tree. In this way we are enabled to do a thorough job and cover every blossom and leaf.

In spraying, our team takes a slow walk and moves right along, so that we are able to spray on an average, eighteen acres a day.

Nebraska. J. L. SPEECE.

How's Your Neighbor's Orchard?

The other day we got a letter from a subscriber reading like this:

"Send a sample copy of The Fruit-Grower to my neighbor, Mr. Blank. I want him to read The Fruit-Grower, to learn how to care for his orchard, for he breeds enough insects to destroy all my fruit. If he doesn't subscribe after he receives a sample copy of The Fruit-Grower, I will see that he gets the paper, if I have to pay for it myself. I want him to get in line with progressive methods."

This letter suggested to us that perhaps thousands of our readers have neighbors like this. In your neighborhood, for instance, are orchards which need attention. They really cost you a lot of money, indirectly, in fighting insects and diseases which come to you from across the fence.

Perhaps you have difficulty awakening an interest among your neighbors in grading and packing their fruits, so tnat your neighborhood gets a reputation for fruits of quality.

The thing to do is to get your neighbors to read The Fruit-Grower regularly.

Here's what we want you to do:

We want you to send us, at once, names of all persons you know who should read The Fruit-Grower. We will then send sample copies to them, and submit a plan to induce them to subscribe.

Here's a way to help your neighbor, The Fruit-Grower and yourself. Simply furnish the names and we'll do the rest. Send at once as many names as you can, and the results of this missionary work will be in evidence this season.

James M. Irvine
Editor The Fruit-Grower,
ST. JOSEPH, MO.

SAMSON WINDMILLS

Different than all others and better because of the double gears, big oil boxes, drop-forged wrist pin, removable bearings, center lift. No side strain, no noise. Big, heavy and powerful. 4, 6, 8, 10, 12, 14, 16, 18, 20 ft. diameters. Send for catalog. Also feed mills, pump jacks and gasoline engines.

STOVER MANUFACTURING CO.
260 Samson Ave., Freeport, Ill.

FRUIT AND ITS ENEMIES

A Brief Description of the Most Serious Pests and a Remedy for Their Control

The Peach Borer.

Among the insect pests of the peach, the borer takes rank as being one of the most damaging and hardest to control. The following account of the peach borer is taken from an article descriptive of this insect in a recent bulletin by Dr. John B. Smith of the New Jersey Experiment Station, New Brunswick, N. J.:

"In the form in which it is most familiar to the grower, the peach-tree borer is a white, grub-like caterpillar with a yellowish or shield-like head, which lives and feeds in the tree trunks at or just below the surface of the ground and makes irregular chambers just beneath the bark, from which gum and sap ooze out to form conspicuous masses. The parents are rarely recognized or seen by the peach grower. The male is a shining, slender, steel-blue wasp-like creature with two pairs of transparent wings marked with black and yellow scales, and the abdomen is narrowly banded with yellow. It expands about an inch when the wings are fully spread. The female is decidedly stouter, deep blue except for a broad orange band around the middle of the abdomen, the hind wings only transparent. These moths are not conspicuous at any time and never fly very much except under the stress of necessity, and are usually seen on the trees early in the morning.

"They begin to appear in the orchards of New Jersey, during the last days of June or early days of July, and continue until the early days of September.

"The life of the individual moth is short, only a few days at most; but during that period it is capable of maturing and placing from 500 to 600 eggs.

"These eggs are somewhat flattened, brown in color, oval in outline and about one-fiftieth of an inch in diameter. They may be laid anywhere on the trunk of the tree or even on the branches, but most of them are to be found, in my experience, on the trunk within a foot or two of the ground.

"In from seven to ten days the eggs hatch and the minute borer, scarcely one-sixteenth of an inch in length, works its way into the tree. The mortality at this stage is enormous, and apparently not more than 10 per cent of the eggs actually laid ever produce larvae that secure entrance to feeding quarters in the trees. The larva, if undisturbed, crawls downward, along or in a crack or crevice in the bark, until it reaches the moist, soft area just below the surface of the ground. If the tree is in loose or light soil or there is a free space between the trunk and the soil it may get down for a considerable distance and, in small trees, even to the lateral roots. In any case, when a suitable place is found, the minute borer eats through

Crown of young peach tree showing two borers and their work. Photo by Mo. Exp. Sta.

the sap wood and forms a little chamber in which it lies quiet and feeds.

"The borer grows slowly and in no case does it transform to an adult during the season in which it hatches from the egg. Some, which hatch very late do not complete their growth in time to transform the first season, but lie over the second winter practically full grown, and do some feeding at the beginning of the next summer.

"The cocoon is an elongate capsule with slightly pointed ends, about an inch in length, constructed of chips of bark and particles of excrement held together by an inner lining of silk. It is formed near the surface and is generally attached to the trunk. Sometimes it is embedded in the mass of gum.

"Trees of all ages may be and are infested with borers, from the seedlings in the nursery row to the venerable old relics still to be found in some gardens. The work is usually done just below the surface of the ground, but the borer may work several inches, especially while yet quite small, down among the rootlets of nursery or small trees. The peach bleeds readily and profusely, and the place where a borer is at work is usually marked by a large mass of gum.

"It is when several borers are in trees from two to four years old, that serious injury is caused by the combined extent of the borings, the consequent interruption of the sap and the loss by bleeding. Frequently great masses of gum at the surface of a tree which is dwarfed, with thin yellow foliage and undersized, premature fruit, indicate with absolute exactness the cause of the general bad condition. Such trees frequently die as the direct cause of the borer injury, or furnishes welcome opportunity for the fruit bark beetle which promptly finishes the work the borer started. When a tree is not attacked until it is over five years old, it may maintain a considerable borer population without serious injury; but even here the trees are weakened and lowered in vitality and become ready victims to other adverse conditions.

"There is no insecticide application thus far known that can be relied upon to kill borers once in the tree. Not only do they ordinarily feed beneath the bark except just after they are hatched, but they are further protected by the mass of exuding gum which forms over the wound. Sometimes the borer does not go beneath the bark at all, but forms a surface cavity in which it lies, protected by the exhuding gum. No poison will penetrate this covering so as to kill the larvae, without danger of injuring the tree. Hot water comes nearest to doing this, and where a few trees only are to be protected, occasional applications of water at a temperature of not over 175 degrees will serve to keep the trees free, if the protecting covering of the gum is first removed.

"An infested orchard should be carefully examined twice each year, as late as convenient in the fall, and again in the following year at the end of May or early June. In the fall examination the earth should be removed from around the base of the trees to a depth of at least six and preferably eight inches, and every sign of a wound or place from which gum exudes should be investigated. There is needed a small stiff, coarse brush to remove the gum and crush all surface feeding larvae; a stout, sharp knife to cut through the bark into the cavities, and a more slender, longer blade to probe channels and burrows. Never cut more than necessary and never cut across the grain if it can be avoided.

If a larva can be located a straight slit through the bark into the cavity so as to hit the borer is all that is needed, and such a wound will heal almost at once.

"Leave the base of the trunks exposed no longer than necessary at this period, and in drawing up the soil against the trunks, mound slightly to serve as winter protection and to bring the clean soil into direct contact with the cut or wounded surfaces. Nothing will be gained by making applications of any kind at this period.

"Between the end of May and the first of June the same process should be repeated. By that time the borers that wintered in the second and third stages will have reached the fourth stage at least, and will show signs of their presence, even if pretty well down. Their feeding will not have been sufficient to have caused serious harm, and careful work at this time should result in the elimination of at least 95 per cent of all of the borers present in the orchard. Leave the base of the tree exposed for a few days now to toughen up the bark, and then, before again drawing up the soil, spray very thoroughly with lime-sulphur, arsenate of lead mixture, to which an excess of lime has been added. Use one pound of arsenate of lead to every five gallons of lime-sulphur or one pound of dry arsenate of lead to every ten gallons of lime-sulphur, and apply with all the force possible to exposed crown and for a distance of eighteen or twenty-four inches around the trunk after the application is thoroughly dry. The object of this application is to hit any young larvae that might later try to get into the trees.

"Mechanical coverings of paper and other materials are not desirable enough to be further recommended. Such bark is more easily entered by borers than bark left entirely unprotected. Soap washes, with or without carbolic acid, are not sufficiently lasting to protect the tree during an entire season because of their ready solubility in water, and the addition of Paris green endangers the tree.

"The practice I have recommended is the simplest and, on the whole, the most effective and least expensive."

Peach Scab.

This disease is quite similar in general habits to the apple scab, and is commonly known in some sections as "freckles," because of the freckled appearance of the fruit that is attacked. The fungus causing this disease causes

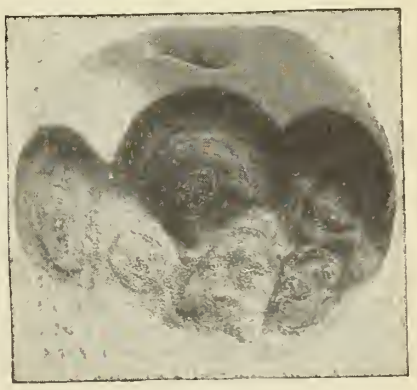
PEACH SCAB
Photo by Mo. Exp. Sta.

black spots to appear on the skin of the fruit at any time during the season, most usually after it has become half grown, and from then to maturity. These spots are generally very numerous, and may be so thickly scattered on the fruit as to make the whole peach appear as if covered with a thick black fuzz.

Unlike brown rot, peaches may be slightly scabby without being unmarketable, but the disfiguration that is caused makes the peaches affected by this disease bring a smaller price than those which are free from the fungus. The disease can be controlled quite easily by spraying the trees during summer with lime-sulphur. Prof. Scott of the United States Department of Agriculture has found that the self-boiled mixture is most effective and causes no injury to the foliage. Many practical orchardists have obtained reasonable results with the commercial grades of lime-sulphur when greatly diluted. Bordeaux should not be used, as the trees must be sprayed in summer, and Bordeaux when put on at that time does so much injury to the leaves as to cause more or less defoliation. This disease generally appears along with brown rot, and where the orchard is sprayed for that fungus scab will also be controlled.

Bitter-Rot of Apples.

This disease is most in evidence as the fruit is ripening, appearing on the fruit of the apple as brown spots that are circular in outline, with the center slightly depressed, and with a



BITTER ROT
Photo by Prof. F. W. Faurot.

roughened ring at the center of the spot. On large spots there may be several of these rings, and they constitute the spore-producing area, each little speck in the ring being a pustule from which millions of spores are given off.

The fungus causing this disease lives over winter on the twigs and

WORKS WITHOUT FAITH.

Faith Came After the Works Had Laid the Foundation.

A Bay State belle talks thus about coffee:

"While a coffee drinker I was a sufferer from indigestion and intensely painful nervous headaches, from childhood.

Seven years ago my health gave out entirely. I grew so weak that the exertion of walking, if only a few feet, made it necessary for me to lie down. My friends thought I was marked for consumption—weak, thin and pale.

"I realized the danger I was in and tried faithfully to get relief from medicines, till, at last, after having employed all kinds of drugs, the doctor acknowledged that he did not believe it was in his power to cure me.

"While in this condition a friend induced me to quit coffee and try Postum, and I did so without the least hope that it would do me any good. I did not like it at first, but when it was properly made I found it was a most delicious and refreshing beverage. I am especially fond of it served at dinner ice-cold, with cream.

"In a month's time I began to improve, and in a few weeks my indigestion ceased to trouble me, and my headache stopped entirely. I am so perfectly well now that I do not look like the same person, and I have so gained in flesh that I am over 15 pounds heavier than ever before.

"That is what Postum has done for me. I still use it and shall always do so." Name given by Postum Co., Battle Creek, Mich.

"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

branches, where it forms cankers of considerable size. These cankers mature their spores at about the time the fruit is reaching maturity, giving rise to the rotten spots on the apples as they are being harvested. In fact, in regions where this disease prevails, which is over most all of the country east of the Rocky Mountains, apples may be gathered in perfect condition, to all appearances, but after having been in storage for a short time will be found to be seriously damaged by this disease. The disease thrives in hot moist weather.

It gets its name from the bitterish taste of the rotten parts, and the peculiar twang that the whole apple will have when a portion of it has decayed from this disease.

The cankers causing bitter-rot appear upon the limbs at first as round or oblong patches that are slightly sunken below the level of the bark and the surface of which is cracked and broken, although adhering closely to the wood. In the course of one or two seasons, with the development of the callus as the healing tissue tries to cover the wound, this sunken, or depressed condition becomes more noticable. These cankered spots are presumed to exist for two years.

In controlling this disease it is necessary, first of all to cut out and destroy the cankered limbs. Then by proper applications of Bordeaux mixture subsequent infection can be largely prevented. The important time to put on this spray is when the fruit is a little over half grown, and then again as the ripening period is approached. Sometimes as many as five applications of a fungicide are needed to keep bitter-rot in check, but as the first three of these are usually made for the purpose of heading off the codling moth and scab, only the last two can be considered as being essentially bitter-rot sprays.

Lime-sulphur is being tried as a means of controlling this disease, and while it has not in all cases proven as effective as Bordeaux, its regular application will improve the general sanitary condition of the orchard, and the disease at least partially be controlled in that way.

Downy Mildew of the Grape.

This disease is of historic importance for the reason that it was for the purpose of controlling this disease that the effectiveness of copper compounds as fungicides became known, and resulted really in the birth of the present spraying methods for all orchard fruits.

Downy mildew appears as a white mouldy growth on the leaves, canes and even clusters of fruit. Its great-

DOWNY MILDEW ON A CLUSTER OF YOUNG GRAPES

est damage is to the leaves, causing them to dry up and drop off early in the season. In cases of cool, wet weather in spring the disease may become so prevalent that the clusters of fruit are attacked, as in the case of the bunch of grapes illustrated herewith, and it may even attack the fruit when half grown.

This disease may be controlled by spraying with Bordeaux. Make the first application before the flowers open, and follow later in the season with one or two more, as may be needed.

Peach Leaf-Curl.

Leaf-curl is at times one of the serious pests of the peach grower, but its destructiveness does not occur every year. It is caused by a fungus that lives in the buds from year to year, and is therefore present every season, although in varying amounts and not always to a serious extent. It appears most extensively in cool weather when there are frequent rains during early summer. The fungus causes the leaves of the peach to crinkle and curl and become badly distorted. Many of the diseased leaves will be tinged with pink, and some of them will have a very evident mouldy appearance, due to the spore-masses of the fungus, that are

PEACH LEAF CURL
Photo by Mo. Exp. Sta.

formed on the surface of the leaves. All diseased leaves drop early in the summer.

This disease is very easily controlled, and trees that are sprayed for scale are rarely bothered with leaf-curl. The most important time to spray for this disease is before the leaf buds open in the spring. Lime-sulphur is very effective; everything depends on the thoroughness of application.

Apple Scab.

The apple scab causes a greater loss to fruit growers, taking the country as a whole, than does any other one disease. This loss does not come from the fact that the fruit which is attacked by the scab is unmarketable, and hence a direct and total loss, but it makes the apples bring a much lower price than they would if free from the disease.

Apple scab makes its first appearance in early spring just as the young leaves are unfolding and the trees coming into bloom. When the weather is cool and damp at that season the conditions are ideal for scab, and its inroads are rapid. If the blooming period is warm and dry, scab will make a slow growth and the losses from premature dropping will be light; but when cold and rainy the young fruit will be attacked, and quickly covered and killed by the fungus. In one of the accompanying illustrations is shown a fruit spur with several of the young leaves spotted with the fungus, and only one apple remaining in the cluster, and it is entirely covered by the scab fungus, except a little patch at the base of the stem. All of the other little fruits in this cluster had already dropped off through having been killed by the scab fungus. This picture was made shortly after the petals had fallen from the blossoms.

Scab is not only the greatest plague because of its attack and damage to the fruit, but because it is responsible in many instances for trees not setting fruit. We have all seen apple trees drop their folliage in mid summer or shortly thereafter, and if the leaves were examined they were found to

APPLE SCAB
The little apple is entirely covered by the scab fungus and killed. Patches of scab can be observed on the leaves. Photo by Mo. Exp. Sta.

be more or less covered with brownish spots of circular or irregular shape, and over which there was a black, velvety or fuzzy growth. This black fuzz is the scab fungus, and was the direct cause of the leaves falling before the end of the season.

In the middle west, where apple scab is most prevalent, it is so usual for the trees to be defoliated early in the autumn or in late summer, that when the trees do carry their leaves to their normal time some people become alarmed. This past summer, on account of the long drought was very unfavorable for the growth of this fungus, and as a result orhards carried their foliage far later in the year than they do under average conditions. On this account some people inquired whether this would be detrimental to the tree, and whether the trees would carry through the winter as well as they should. Without a doubt the trees will go through the winter far better than they have for some years, and particularly in years when apple scab is especially prevalent. Then, there is another good feature to the trees holding their leaves late, as they have done this past season, and that is that the trees have been able to build up more food material and stronger buds for next year's crop. Apple trees never had a heavier setting of fruit buds than they have now.

The profit in spraying for scab is always large, not only because of the saving of a large quantity of fruit that would drop permaturely, but because of the enhanced value of the fruit that is marketed, and the more luxuriant foliage that will be maintained. The first application of spray for the control of this disease must be made before the buds open in the spring. In fact the dormant spray that is made for scale is of much service in checking the early spread of scab.

Where the disease is very prevalent, and in seasons which are cool and moist a second application needs to be made just before the blooms open, and the third comes immediately after the petals drop. Later applications may be needed, but if these

APPLE SCAB

three are made, and especially the last two, scab will be kept in check, although there will be much gained by making later applications during the summer.

Bordeaux mixture has been the old standard remedy, and it is still one of the best fungicides, but on account of its causing such great damage in some seasons through scalding the fruit it is being discarded in favor of lime-sulphur, and it is barely possible that we may find the latter material more effective than Bordeaux.

Apple Blotch.

The disease known as the apple blotch has been very prevalent in southern orchards for several years past, and particularly in the Ozark region of Missouri and Arkansas. It has been commonly confused with scab and the damage done by it has been attributed to the scab fungus, which may account for the real nature of the disease having been overlooked for so long a time. The disease first appears as a small light brown spot which enlarges and becomes more or less star shaped, wheel-like or jagged in outline. The accompanying illustration is a very good likeness of apple blotch as it appears on a yellow apple.

These blotch patches on a mature apple vary in size from an eighth of an inch to a half inch in diameter, and several may form so close together as to create a spot that covers a considerable portion of the surface, causing it to crack open. In fact, in many cases there will be two or more cracks, which may be so deep as to

APPLE BLOTCH

reach the core. But like scab, apples which are affected by this disease and not cracked, may be sound at harvest time but so disfigured by the blotch as to render them unfit for any other purpose than making into vinegar.

The fungus causing this disease attacks the twigs and leaves as well as the fruit. It attacks the tender growth of the branches, first appearing as a purplish spot, which later darkens in color, and later the center changes to brown or gray when it cracks open as a canker. On water sprouts these cankers may measure as much as an inch in length and are very conspicuous. The fungus lives over winter in these cankers, and extends the disease on the twig or branch the following season. In addition it appears

THE LITTLE WIDOW

A Mighty Good Sort of Neighbor to Have.

"A little widow, a neighbor of mine, persuaded me to try Grape-Nuts when my stomach was so weak that it would not retain food of any other kind," writes a grateful woman, from San Bernardino Co., Cal.

"I had been ill and confined to my bed with fever and nervous prostration for three long months after the birth of my second boy. We were in despair until the little widow's advice brought relief.

"I liked Grape-Nuts food from the beginning, and in an incredibly short time it gave me such strength that I was able to leave my bed and enjoy my three good meals a day. In two months my weight increased from 95 to 113 pounds, my nerves had steadied down and I felt ready for anything. My neighbors were amazed to see me gain so rapidly, and still more so when they heard that Grape-Nuts alone had brought the change.

"My four-year-old boy had eczema very bad last spring and lost his appetite entirely, which made him cross and peevish. I put him on a diet of Grape-Nuts, which he relished at once. He improved from the beginning, the eczema disappeared and now he is fat and rosy, with a delightfully soft, clear skin. The Grape-Nuts diet did it. I will willingly answer all inquiries. Name given by Postum Co., Battle Creek, Mich.

Read the little book, "The Road to wellville," in pkgs. "There's a reason." son."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

also on the leaves causing very small yellowish or whitish spots on the blade of the leaf, and even on the stem.

The threds of the fungus may extend down the stem of the leaf and totally destroy the fruit bud that is formed at its base. In general these blotch spots that appear on the leaves are very small, seldom larger than a sixteenth of an inch in diameter, and on this account are not readily observed unless very numerous. But leaves which are affected either die and turn brown early in the season or drop prematurely.

The important thing to remember in controlling this disease is to strike it at its weakest point, and on that account it is necessary to know that the time when infection takes place is within a month or six weeks after the petals have fallen from the blossoms in spring. During this period the cankers on the limbs are giving off quantities of extremely minute spores that are carried by the wind to all parts of the orchard. Wherever one of these spores lights, should conditions be favorable, it germinates. Then if this germinating spore is upon a leaf, twig, or young apple, it penetrates the tissue, and a new spot begins to form.

Since the period of infection comes in early spring, it is highly necessary that the trees be protected at that time so as to ward off the possibility of the germinating spores gaining entrance into the tissue of the tree. The disease can be controlled by spraying with bordeaux, and carefully made experiments by practical orchard men and the experts of the United States Department of Agriculture, have demonstrated that the first spraying for blotch should by all means be made about three weeks after the petals fall. This is at about the time the second treatment for the codling moth is made, so by adding arsenate of lead with the bordeaux the two pests may be controlled with the one application. It may be necessary to make still other applications, in case the orchard is badly infected with the disease, in which case the second application for blotch should be applied about three weeks after the first.

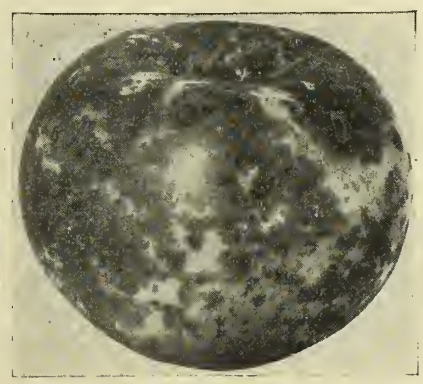
This troublesome disease is most prevalent in the section where bitter rot appears, and where the orchard is thoroughly sprayed for that disease there will be no difficulty experienced in keeping blotch under perfect control.

While bordeaux mixture has been described as being the agent to use in fighting blotch, lime-sulphur is rapidly taking the place of this material as a fungicide, since there is far less danger of scalding the fruit with lime-sulphur than there is with the bordeaux. Then in addition to the spraying there should be thorough and systematic pruning, in which the cankers are cut out and destroyed. The cankers are an ever ready source of infection, and the most perfect control can not be had as long as the seat of infection is located in the orchard. Therefore, when pruning the tree watch for the cankers and remove them.

Sooty and Fly-Speck Fungus.

Apples which are growing in low ground, or which are produced on the limbs close to the soil are frequently disfigured by a blackish appearance of the skin. They often look as though they had been covered with soot, or had been specked by flies. Both conditions are usually present on the same apple.

To many persons this condition is really a natural characteristic of the apple. I have often heard people in speaking of the Janet apple, call attention to the many little black dots on the surface, and the evident sooty appearance of the skin, believing that



Sooty Blotch on Huntsman Apple

this is as truly a part of the apple as the red stripes in the skin. But this condition is due altogether to a fungus which are parasitic upon the apple in just the same way as apple blotch, scab or bitter rot, but differ from all other fungi in that it causes no damage to the fruit except upon the outermost portion of the skin, and oftentimes can be entirely removed from an apple by rubbing with the hand.

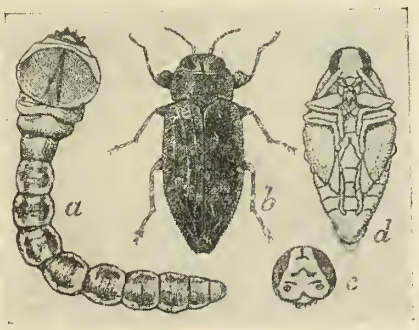
The fungus causing these troubles lives upon the limbs of the trees, where it causes cankers to form, and damages the tree in that manner. But this fungus need not exist in an orchard, at least not to the extent it does, as it is very easily held in check by the usual sprays for other orchard fungus diseases, and in those orchards which are regularly and systematically sprayed this fungus is practically unknown. It occurs mostly in the humid section of the United States, and is unknown in the irrigated districts of the West.

The Flat-Headed Apple Tree Borer.

This insect is often more numerous than the round-headed borer, but its damage to the apple orchards is less since it prefers to confine its attacks to dead or dying trees. However they are found in trees that are perfectly sound and vigorous.

Externally the burrows of this insect present quite the same appearance as the round-headed borer. The adults are beetles having a very beautiful greenish black shell, tinged in certain lights with bronze, and legs of a bright golden hue. They are very lively and may be seen running up and down the trunks of the trees in the sunlight.

Unlike the round headed borer, the larva of this species reaches its full development in one season, passes the winter in its burrow and emerges early the next spring and begins laying eggs at once, continuing until midsummer. The full grown grub is about an inch long, with the portion of the body just back of the head much flattened and extended, giving it the appearance from which it derives its



FLAT HEADED APPLE TREE BORER
From photo furnished by Prof. Leonard Haseman.

name "flat-headed." The feeding burrows are broad, shallow, irregular channels under the bark and rarely reach far into the wood.

Digging the borers out with a sharp knife is the most effective means of control, although as mentioned for round headed borer, deterrent washes may be used, applying the wash to the trunk and large limbs. This borer is a native to the forest, and in orchards surrounded with timber patches the flat headed borer is most troublesome. Dead or dying trees in the orchard should be cut out and burned, as they harbor quantities of this insect.

Fall Web-Worm.

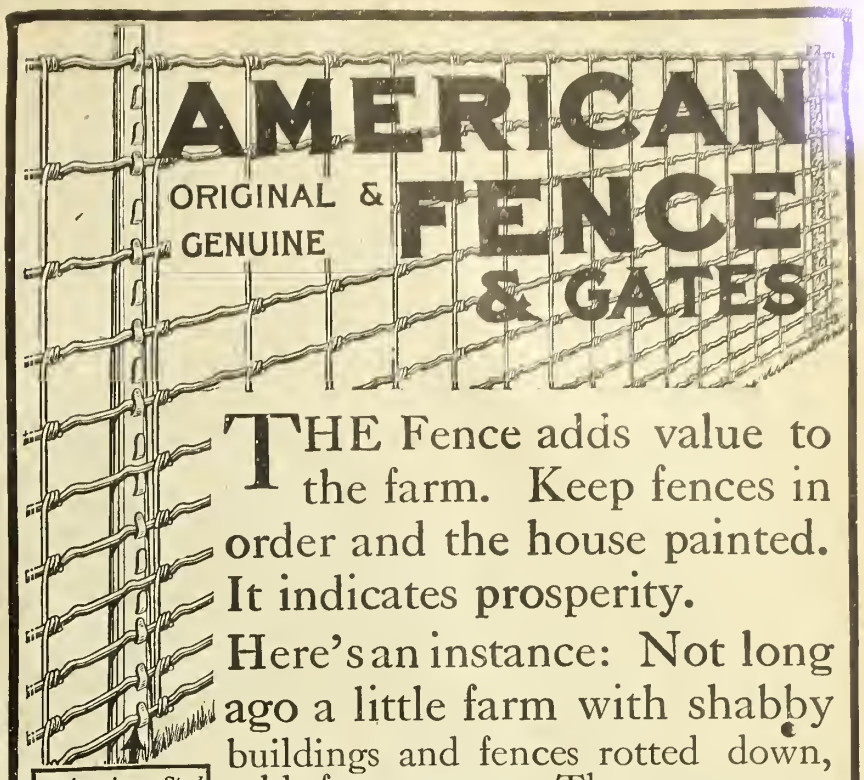
These are white, woolly caterpillars having a black stripe down their back. They are found on a great many kind of plants as they are not particular as to their diet. The full grown caterpillars are about an inch long, and occur in colonies, spinning great masses of web over the foliage, forming a protection within which they devour the foliage they have enclosed.

When left uncontrolled these insects can do a great amount of damage by devouring the foliage of fruit and shade trees. The adult is a white moth, and the eggs are deposited in early summer. They soon hatch, and the larvae begin spinning their web and eating the leaves. When full grown they decend to the ground and spin a cocoon where they remain until the following year.

On account of their foliage eating habit these worms can be checked with applications of an arsenical spray to the foliage when the webs begin to

NEST OF FALL WEB WORM
Photo by Prof. Leonard Haseman, Mo. Exp. Sta.

appear. Lead arsenate is the most effective. Where small masses are found on shade trees, or other places not conveniently sprayed they can be cut out and burned, or destroyed by holding a burning torch under the nest and driving out and destroying the insects in that manner.



American Steel Fence Post Cheaper than Wood and More Durable. Get Catalog.

THE Fence adds value to the farm. Keep fences in order and the house painted. It indicates prosperity. Here's an instance: Not long ago a little farm with shabby buildings and fences rotted down, sold for a song. The new owner had the right idea. Buildings were painted. Wire fences were erected to divide the farm into small fields in order to change pastures and rotate crops systematically. Then circumstances compelled him to sell out. The cost of painting and fencing was less than $200.00. The farm sold for four times its purchase price. Appearances *do* count.

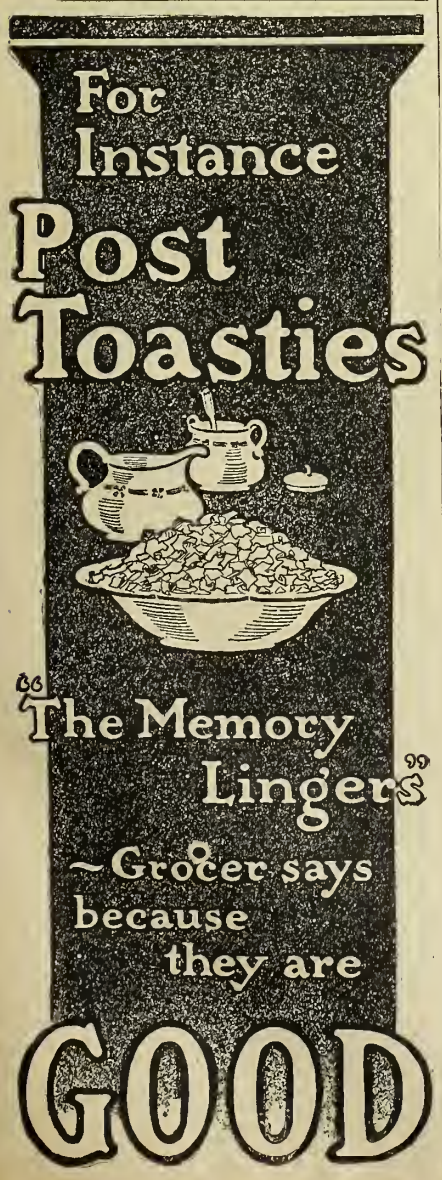
AMERICAN FENCE is made of large, stiff wires, galvanized heavily, having the American hinged joint (patented), a fabric most flexible and wear-resisting. A square mesh fence of weight, strength and durability—three great needs in farm fences.

Dealers in Every Place

where farm supplies are sold. Shipped to them direct from mills in carload lots, thus saving freight charges and enabling dealers to sell at lowest prices, giving buyer the benefit.

Send for copy of "American Fence News," also book "How to Make the Farm Pay," profusely illustrated, devoted to the interests of farmers and showing how fence may be employed to enhance the earning power of a farm. Furnished free upon application.

F. Baackes, Vice Pres. & Gen. Sales Agt., AMERICAN STEEL & WIRE COMPANY, Chicago, 72 W. Adams St.; New York, 30 Church St.; Denver; U. S. Steel Products Co., San Francisco, Los Angeles, Portland, Seattle.



THE FRUIT-GROWER

ST. JOSEPH, MISSOURI

Title Registered in U. S. Patent Office. Bro. Jonathan—Trade-Mark—Registered

Copyright, 1912, by The Fruit-Grower, St. Joseph, Mo.

Address all communications and make remittances payable to "The Fruit-Grower."
Eighth and Charles Sts., St. Joseph, Mo.

WM. G. CAMPBELL, General Manager JAMES M. IRVINE, Managing Editor
E. H. FAVOR, Associate Editor

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....J. C. BILLINGSLEA.....First Nat'l Bank Bldg.
New York Office..... A. H. BILLINGSLEA.....No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS.....New York Life Bldg.
St. Louis Office.....A. D. McKINNEY.....Third Nat'l Bank Bldg.
Minneapolis Office..... ROY R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents Agate Line. $7.00 per inch. Fourteen Lines to an Inch.
Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.

No advertising in class generally termed "Objectionable" accepted under any conditions. Editions mailed on first day of month. Forms close on 20th of preceding month, i. e., January forms close December 20th, etc.

An Advertisement in The Fruit-Grower will place you in touch with One Hundred Thousand of the Most Prosperous Farmers in America

SUBSCRIPTION RATES

Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c, or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list.

Remit Coin, Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 JANUARY, 1912 Number 1

Fifteen Years Old.

The Fruit-Grower is fifteen years old, this issue being the first of our sixteenth year. When our first number was issued, in January, 1897, predictions were freely made that the paper would not last a year; that numerous other fruit journals had been started and had failed for lack of support. In view of the direful predictions that were made when The Fruit-Grower was born, we are thankful that we are alive today.

Great changes have taken place in horticulture within the last fifteen years. First, there have been great changes in the varieties of apples that are planted. When The Fruit-Grower was young, practically every fruit-grower in the Middle West contended that Ben Davis was the apple to plant; that Jonathan was a better apple, but would not keep; that Grimes Golden was of much better quality, but that it would not sell for higher price than Ben Davis; that Winesap was a splendid apple, but that it was too small and too subject to scab. Ben Davis was the favorite apple, principally because it would take care of itself. But times have changed greatly.

The very attitude of the growers has changed—or, perhaps, we should say that with some growers the change is still in progress. No good grower now expects his trees to take care of themselves, and, naturally, Ben Davis isn't so popular now as it was fifteen years ago. Cold storage has been perfected to its present state within fifteen years, and now that Jonathans can be kept past the holiday season this variety is much more popular.

The markets are more particular as to varieties, and good Grimes Golden apples now sell for much higher prices than Ben Davis. Growers have learned that size of Winesaps can be increased by thinning the trees, and that scab can be controlled by spraying—and Winesap is now a more popular commercial variety than it was when The Fruit-Grower was young.

Fifteen years ago the subject of spraying was very gingerly discussed at most horticultural meetings. Indeed, the writer was present at one meeting of a prominent state horticultural society at which a resolution was introduced providing that the subject of spraying be barred from discussion before the society until something definite had been learned as to its benefits. This was only about ten years ago. Think of that!

When the subject of spraying was discussed the remedies prescribed were vastly different from those now in use. For chewing insects paris green and london purple were the standard poisons. For sucking insects kerosene emulsion was the proper thing to use. Bordeaux mixture was practically the only fungicide that was known, and no one knew just how to make it so that it would be safe and effective. Paris green has been generally displaced by arsenate of lead for use on fruit trees, and tobacco extract is now competing with kerosene emulsion for popularity, with the score much in favor of the tobacco extract, among practical growers. Lime-sulphur has been developed within fifteen years and is now used not only as an insecticide, but is dividing honors with bordeaux mixture as a fungicide. The miscible oils have all been developed within the past fifteen years, and are now largely used in fighting sucking insects.

San Jose scale was little known fifteen years ago, and just after growers became acquainted with it they were panic-stricken, and it was claimed the fruit industry was doomed. The scale has spread to practically every part of the country—but fruit growing is on a firmer basis now than ever before.

Fifteen years ago the great boom in planting apple orchards was on here in the Middle West. Nearly every week the daily papers contained a story of some great orchard, which was expected to make its promoters fabulously rich. Thousand-acre orchards were spoken of in the most nonchalant manner, as though they were not out of the ordinary. Perhaps Missouri was the storm center of this great planting craze, and he was a rank heretic who questioned the wisdom of planting such great orchards without also providing means for caring for the trees. Anything under 100 acres of apples was thought to be a "home orchard," and a great departure was made, about ten years ago when a Missouri horticultural society asked one of its prominent members to read a paper on the subject, "Is Eighty Acres Enough?" This man was thought to be a disbeliever in the fitness of things when he said that eighty acres of apple trees was enough for one man.

Now everybody is taking in favor of the small, well-cared-for orchard, No one questions that a ten-acre orchard, properly cared for, will make its owner more money than the large, neglected orchards which were so common a decade ago. We used to hear much about the number of apple trees each state had. Here in Missouri we boasted of twenty million apple trees—count 'em, twenty million! Now we don't say much about the number of trees a state has growing. Instead we want to know about the quantity and quality of apples produced. To have a great number of trees and to produce a small quantity of merchantable fruit is a discredit to a state, rather than a reason for boasting. Under the new idea of things, men want to know about results.

Much improvement has been made in the marketing of fruits within the past fifteen years, and greater improvements are still to be made. This work has scarcely been touched as yet. Shipping associations have been organized, and their number will be increased, and their methods greatly improved. Fruit growing, as a business, is just now taking its place as one of the important branches of agriculture, and it is probable that the next fifteen years will witness even greater changes than have taken place in the past decade and a half.

In every improvement that is made The Fruit-Grower hopes to have a part. We want to keep pace with every new move that is made in horticulture, and our constant desire will be that Fruit-Grower readers shall be fully informed of every new fruit introduced, of every new spraying material or spraying device brought out, and of every improved horticultural practice which can be recommended.

During the fifteen years that The Fruit-Grower has been published we have had the most cordial support of our readers and of all horticultural authorities connected with various state institutions and with the United States Department of Agriculture. To these men, and to all who have helped to make The Fruit-Grower possible, we render grateful acknowledgement.

No publication ever started under more adverse conditions than those which surrounded the birth of The Fruit-Grower. We could not have made a success of the work without the help and co-operation of a lot of the best friends anyone ever had. These friends have stood by us through the years, and their number has increased, until today more than a hundred thousand readers look for the coming of our paper every month. There was a time when we could call all our subscribers by name; we had no need of keeping record of our subscribers, for we knew where everyone lived and when his subscription expired.

Now all this has been changed; we have so many friends we cannot call all of them by name, but we appreciate them just them same. At this New Year season, when plans are being made for the year just beginning, we want to wish for every member of the great Fruit-Grower Family a most prosperous and happy New Year.

As we look back over the past fifteen years and remember the good friends we have had and those who still abide with us, we can only wish, for ourselves, that we shall always be worthy of these good friends.

Taking Information to the Farmers.

Many agricultural teachers are studying ways and means of taking to the farmers information which will help them in their farm work and, so far as horticultural practices are concerned, the favorite means seems to be to establish demonstration orchards, and there carry on actual work in pruning, spraying, etc. It is much more effective to show a man how to do a thing than to tell him, and since most farmers cannot go to the agricultural colleges, the work of the college is being taken to them.

Perhaps Eastern states have been leaders in this work, trying to revive interest in apple-growing in that section. Pennsylvania is doing a great work along this line, and results are in evidence now that are surprising. Massachusetts has laid out a program covering a period of fifteen years, and already good results have been obtained. Coming West, Iowa has taken up the work, and will greatly increase the number of demonstration orchards. Some of our other states in the West, Missouri, for instance, should do a lot of this work, but hasn't yet furnished the money necessary.

This is real, practical work. That it pays is not doubted by those who have been connected with the work already done. That there is great need of more work along this line is apparent to everyone who knows true conditions. A concerted move should be made in many states next year to elect men to the legislature who will appreciate the importance of this work, and who will see that funds are provided to carry it on. In Missouri it may mean that some changes will need to be made, but certainly the horticultural interests of this state are of enough importance to warrant every effort being made to make every orchard profitable. There are other states, too, whose fruit-growers need this demonstration work, and it should be made available for them.

City Men as Fruit-Growers.

In the program of a prominent horticultural society the question is asked if city men can succeed in growing fruit.

From our experience we can answer that question affirmatively right now. We personally know hundreds of city men who have been wonderfully successful in horticulture, and their number is increasing every day. But it must be remembered there are city men, and then there are other city men.

The question in the program referred to makes the mistake of assuming that all city men are alike. They aren't; some city men will grow fruits successfully where others will fail. Much depends on the man, but if a city man will give attention to the details of the business, there is no reason why he cannot make money growing fruit.

All through the West are hundreds of city men engaged in horticulture, and they are among the most successful men in the business—not because they were city men, however, but because they do things at the right time. Perhaps this is why the folks in the Far West say it is easier to make a good fruit-grower out of a city man than out of a farmer from the Eastern states. They say the city man, who knows nothing of farming, is teachable, while the Eastern farmer is not always willing to take advice from those experienced under new conditions.

Don't assume that a city man will succeed or that he will fail in horticulture. And don't overlook that whoever succeeds will do so because he studies the business of fruit growing and gives attention to every detail of the work.

HIGH PRAISE FROM HIGH AUTHORITY

The December number of The Fruit-Grower is the finest horticultural magazine I have ever put my eyes on. There is more good, practical stuff in it, and profitable to reflect upon, than any other issue of any other magazine yet put out. I thought you might like to know my opinion of it. Permit me to congratulate you upon it and to wish you a very Merry Christmas.

Sincerely yours,
F. A. WAUGH,
Head of Horticultural Division,
Massachusetts Agricultural College.

I have taken and read The Fruit-Grower for three or four years, and have always found it original in every way. The monotony of most fruit and agricultural papers is only too common. Above all things, I dislike a paper which is always a repetition of the paper of twelve months before, the more so if the illustrations are run in regular repetition every twelve months also. A well-edited magazine like The Fruit-Grower is far more valuable and interesting than a paper of mostly advertisements, with ever so fine a colored front plate.

U. G. HEIN,
Professor of Horticulture.
Waynesburg College, Pa.

SEED GROWING in NORTHWEST

The valley of the Skagit River, in northwestern Washington, is known among seedsmen as the producer of the largest and most desirable cabbage and cauliflower seed grown in the United States. An area of more than 300 acres is devoted to raising cabbage seed and about one-half as much land is planted to cauliflowers, for seed, every year. Beside the plats utilized for cabbage and cauliflower there are large tracts planted to peas, beans, parsnips, clovers, timothy and general garden and field crops, to be harvested when the seeds are mature.

Seed growing had a beginning in the Skagit country more than a quarter of a century ago. It was then discovered that the bottom land, reclaimed by dykes from the waters of Puget Sound, an arm of the ocean, produced wonderful results, in cereals and vegetables. The seeds were tested and sent to Eastern experts, who pronounced them superior. That resulted in the planting of increased acreage, and now practically all of the American-grown cabbage seed comes from probably 900 acres, cultivated for that purpose, either on Long Island in the Atlantic region, or in the Skagit Valley of the Pacific Coast.

Cabbage seed yields from 700 to 1,500 pounds per acre and the growers get from 20 to 25 cents a pound for the crop. Cauliflower returns from ten to 100 pounds to the acre, and the growers receive about $10 a pound for the best seed. One professional cauliflower grower, with a small garden near Seattle, has been producing a large white variety that gave him a local demand for seed at $7 an ounce. He has never had enough seed to supply the demand, even at $112 a pound, for the reason that individual heads of the cauliflower have sold for as much as 40 cents each on the market, and were disposed of before maturing seed.

July and August are the months for planting cabbage in the Puget Sound country, for getting good seed the following year. The harvest season comes during July and August, when there is little moisture in the atmosphere and no rainfall. The seed is generally grown under contract and must come up to the standard, or be rejected, and the grading is always high because of soil and climatic conditions and the experience of practical men in planting, cultivating and harvesting the crop and curing and threshing the seed. And the acreage given over to seed growing, is increasing annually because of greater calls for seed.

Puget Sound has secured a national reputation in the past few years for beans and peas grown for Eastern markets. The yield of some choice varieties of garden peas ranges above a ton to the acre. Green beans are grown in great quantities for local canneries and for seed. Gardeners claim that a dozen different vegetables can be grown in the Skagit bottom lands every month in the year. A seedsman says that asparagus and rhubarb may be had from April to April, and parsnips, salsify, carrots, kale, parsley, radishes, celery, potatoes, turnips and rutabagas may be grown and harvested throughout the four seasons.

The seed farms of the Skagit Valley region are located in a district where the surface ot the fields is lower than high tide, coming in from the Pacific Ocean twice every twenty-four hours. A tract, or series of tracts, comprising 40,000 acres, has been cut off from the tidelands by dykes, and then subdivided into small farms. This is pictured on the maps as the Swinomish Flats, the center of which is a little rural village, called La Conner, after the old settler of that name. The country has a flavor of pioneer days, in the presence of the Swinomish Indian reservation and school, where the young natives are taught how to till the soil and make a living different from the fishing fathers.

It is estimated that the seed farms of the United States comprise a combined area of approximately 300,000 acres. Of this great area the peas, beans, corn and similar crops occupy about two-thirds, or in the neighborhood of 200,000 acres. The vine crops, such as melons, squashes, cucumbers and allied fruits claim a space of probably 90,000 acres. The onion planting for seed ranges around 10,000 acres. To distribute this great bulk of seed coming from such tracts, requires the labor of nearly 900 firms dealing in seeds and almost as many business houses handling seeds as side lines.

There are several elements to be considered in the growing of seed for the general and special markets. The soil and climate must be just right, the original seed perfect, cultivation at the proper time and harvesting and threshing be done when there is no rain to damage the seed in the chaff or after it is scattered out on the floor or cloth. The salt water deposits of the sunken gardens at La Conner seems to contain special elements of fertility and the salt air assists in developing plant life to a point of perfection. Some remarkable yields of special crops have been recorded in the dyked fields.

A field of about twenty acres of oats, lying within the dyked land district, has the record for producing an average of 173 bushels to the acre. Another record is that obtained from a field of wheat, which did not produce hard grain suited for making flour, but returned an average of 140 bushels to the acre. One field, of thirty acres, planted to timothy, returned 1,300 pounds of choice seed per acre, and the grower disposed of his crop for 10 cents a pound. All the seed, grown under the salt-air conditions, are remarkable for plumpness and general appearance and attract attention wherever exhibited.

The prospective seed grower should make a thorough investigation of soil and climatic conditions before engaging in the business on an extensive scale. It is better to begin with small plats and decide on only a few varieties of seeds to grow for market. Then soil must be put in good condition, well cultivated, thoroughly fertilized and kept clean of weeds. And the market for the seed is an important thing to take under consideration before time for harvesting. As a general thing the seed growers of Puget Sound contract with large seed dealers in the East to supply them with the products from a given number of acres. The dealers furnish the seed and give directions as to methods of cultivation, time for harvesting and plans for threshing, cleaning and shipping seed.

There is a growing demand for strong garden seeds, that is often supplied by others, not in the seed business, and the competition thus brought about is so strong as to reduce the profits materially. For instance, there are the canneries, from which seeds are contracted, and such crops as tomatoes, squash, pumpkins and similar things are made to pay greater profits by saving the seed, from all specimens, regardless of size, variety or period of ripening. The trucker often finds the saving of seed one way of getting even from his gardens, when prices for vegetables drop, or the supply is greater than the demand. Such seeds are not of the best type, but they go on the open market and help to reduce the prices of legitimately grown seeds of the best types, and from the gardens of professional and experienced growers.

Washington. JOEL SHOMAKER.

Need More Home-Grown Produce.

In line with his policy to use the machinery of the Department of Agriculture to help lower the cost of living, Secretary Wilson thinks the lands near the large cities should be used so that their markets for foodstuffs could be supplied with home-grown products. Only recently 15,000 tons of potatoes reached New York from Scotland for New York City consumption. "Within an hour's ride of the Greater City there is enough uncultivated land to produce many times the amount of this cargo of potatoes, if only properly cultivated.

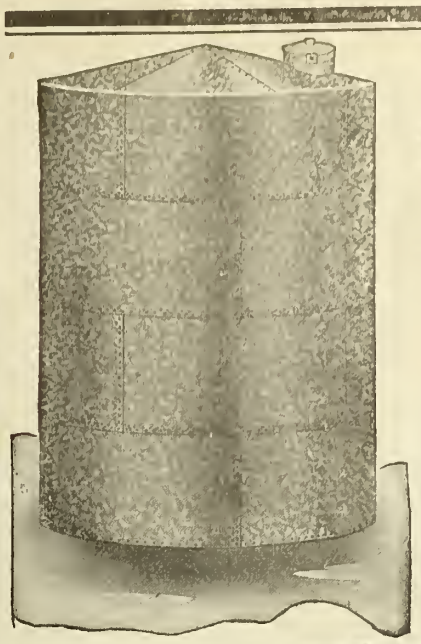
"This applies not only to the potato crop, but to nearly all the trucking crops. And, too, this situation does not affect New York alone, but every city and community from Maine to Texas, and the West and Middle West, but indeed, almost the entire country.

"Washington is a fair example of the argument. There are thousands of acres of cheap lands in near-by Maryland and Virginia that would supply the Washington market with all the potatoes, cabbage and other truck crops it would consume. Instead, most of the supply of these farm products is shipped from a distance at, of course, a much higher cost than would be the case if they were produced in contiguous territory. The important fact in regard to this is that these lands in Maryland and Virginia can be bought cheap and put in condition for cultivation at a nominal outlay.

"In the South our reports show that most of the potatoes, cabbage, eggs, butter and meats used are shipped from a distance. One of our agents reported that he ordered eggs for breakfast at a hotel in North Carolina and was informed that the train from Washington was late and there were no eggs to be had in the town. Within a radius of a few miles of this city is enough vacant land to supply nearly the entire state with eggs. This agent found that 75 per cent of the eggs, butter, poultry, meats and vegetables were imported from out-of-state markets.

"The problem of supplying the markets with home-grown and home-raised foodstuffs is a serious one in the question of the high cost of living, and when it is solved by the cultivation of the neglected acreage of lands, I believe the whole problem will have been materially reduced. The Department of Agriculture is working to bring this about."

"Columbian Tanks"



Quality Satisfaction

If you intend to Smudge, get Our Prices on

STORAGE AND WAGON TANKS

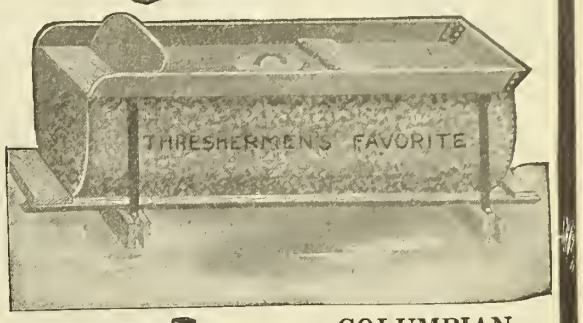
We have equipped thousands of orchards with Tanks, and know just what is required.

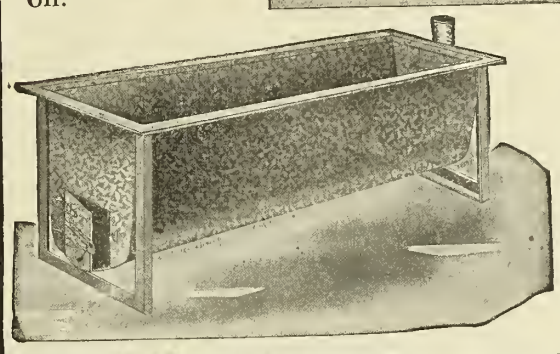
We make Storage Tanks of heavy galvanized steel; all sizes, 100 to 50,000 gallons.

Oil and Water Wagon Tanks

Made in all sizes and shapes, 5 to 20 barrels.

Equipped with 2-inch valves for drawing off the oil.





COLUMBIAN Combination Feed Cooker and Scalding Vat

Made of No. 20 gauge galvanized steel and equipped with two chain hooks on each side.

In writing for prices state size or capacity of tanks desired.

Our Free Catalogue, "TANKS FOR THE WORLD," will be mailed upon request.

COLUMBIAN STEEL TANK COMPANY
KANSAS CITY, MISSOURI

SHORES-MUELLER CO. Shores REMEDIES EXTRACTS SPICES

Wanted

Farmer or Farmer's Son

with rig in every County to introduce and sell Family and Veterinary Remedies, Extracts and Spices. Fine pay. One man made $90 one week. We mean business and want a man in your County. Write us.

SHORES-MUELLER CO., Dep't 60 Tripoli, Iowa

FARM FENCE

11½ cts. a rod for a 26 in. high hog fence; 16 1-2c. a rod for 47 inch high stock fence; 28c a rod for a 50-inch heavy poultry fence. Sold direct to the farmer on 30 Days Free Trial. Special barb wire, 80 rod spool, $1.40. Catalog free.

INTERLOCKING FENCE CO.
BOX 50 MORTON, ILLINOIS.

Try An Ad In Our Classified Department

¶Readers of The Fruit-Grower will find our Classified Department of great value in disposing of lands, spraying machines, live stock, poultry or anything you might have for sale or exchange. Rate is only 4c per word cash with order, each insertion, not less than 25 words in each issue. This rate is only about one-half our regular display rate, as this department is conducted mainly for the benefit and information of our readers.

Send copy for an ad to run next month.

The Fruit-Grower, St. Joseph, Mo.

COMBATTING WOOLLY APHIS

Colonies of this insect on the upper portion of the trees can be destroyed by spraying them with tobacco extract, such as black leaf. But as their greatest damage is done to the roots of the trees spraying cannot be resorted to. Prof. R. I. Smith of the North Carolina Experiment Station recommends that the roots be treated with fifteen per cent kerosene emulsion. Early spring is the best time to make the application, as the tree will be starting into growth, and will be less liable to suffer damage

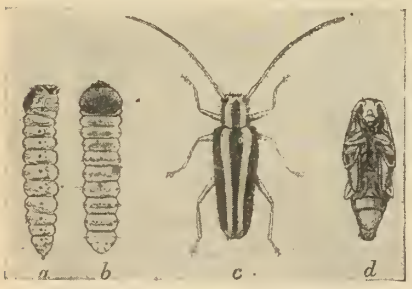
WOOLY APHIS
Within the ring can be seen some small white patches where the living aphids remain. Photo by Mo. Exp. Sta.

from the emulsion. Dig away the surface soil so as to expose the roots, for a distance of two or more feet from the trunk. Apply the fifteen per cent kerosene emulsion until the soil is soaked about three inches deep. This will take three or four gallons of the emulsion for each tree. When the emulsion has passed into the soil, replace the soil in the hole. The emulsion will destroy all of the insects in the area that is treated and as its effects extends over a period of several months, subsequent infection will be delayed.

Round-Headed Apple Tree Border.

Apple trees are often damaged or destroyed by a grub that bores into the sap wood, making channels, which in the case of a young tree may entirely encircle the trunk and kill the tree. This borer is a white grub, and is distinguished from the flat-headed borer, by being smaller in size and having a round head and making a tunnel that is round in outline, instead of oval.

This insect burrows in the sap of apple trees, and to some extent in the heart wood, at or close to the ground. Its presence can generally be detected from the outside by a slight discoloration of the bark, which may be cracked and from which the frass or castings of the grub are emerging. In



ROUND HEADED BORER
"a" and "b" show the grub that works in the tree; "d" is the pupa and "c" the adult that lays the eggs. Photo by Prof. Leonard Haseman.

addition to the apple, this insect attacks a number of other trees, some of which are native forest trees.

The adult of this insect is a beetle that is about three-fourths of an inch long. The body is pale brownish yellow with two creamy white stripes extending the entire length of the body, including head. The beetles fly at night and remain in hiding in the day time. They appear during May and June and deposit their eggs in the cracks of the bark near the ground or on the larger limbs. The eggs hatch in about two weeks into minute borers that penetrate the bark and commence to feed on the sap wood. During the first season the grubs confine their efforts to the sap world, making disc-shaped burrows which may reach the size of a silver dollar. The winter is spent at the lower portion of the burrow in a quiescent state. The second year the burrow is enlarged, and the second winter is passed within it in about the same manner as the first. During the spring of the third year the grub bores deeper into the tree, going in some cases to the heart, where before fall they attain their full development, and with their head directed towards the bark they transform to pupae sometime during the late fall During the following spring, three years from the time the eggs are laid, the adult bettle cuts its way out of the tree, mates and lays eggs for another generation.

The knife is the only certain remedy when borers are discovered in an apple tree. Cutting them out of the bark is the most certain way of getting rid of them, and does but little additional injury to the trees. As the first two years of the borer's life are spent in shallow burrows, annual examination of the trees, and prompt removal of the grubs is the most satisfactory means yet discovered for handling them.

A wash made of lime white-wash, or a heavy lime-sulphur solution, to which a quantity of lime is added will aid in preventing the insects from laying their eggs on the tree, but once the borers gain entrance they are beyond the reach of sprays. Carbon bisulphide can be injected into the burrows with a little syringe or a small tipped machine-oil can, although the grub can be cut out about as quickly and with greater satisfaction.

Do You Know the San Jose Scale?

Have you ever seen it on your fruit trees, or on the fruit itself? On badly infested trees appears as an ashy gray covering, or scaly deposit on the bark of the tree, and if scraped with a knife or the thumb nail there will be a rather wet, waxy smear on the bark.

SAN JOSE SCALE
On a twig of an apple tree. Magnified.

Where the infestation is very bad the entire tree, trunk, branches and leaves will be coated with the scales.

By examining an infested twig with a magnifying glass it will be observed that the branch is covered with a mass of what looks like little pimples or tent-shaped scales. Each one of these has a little dot in the center. Some of these pimples will be dark brown in color, some gray, and some will be white, and in the summer there may also be seen little yellow specks crawling around among these little scales. The largest of the scales will be about the size of an ordinary pinhead, while the most will be smaller.

At first the San Jose Scale is a minute yellow speck, able to crawl about, and takes full advantage of its opportunity. It will crawl upon anything, movable or immovable, which it may meet. It frequently crawls on bird's feet, and is transported in this way to some other tree, thereby spreading the disease. This little mite moves about for a few hours and finally settles down at a suitable place, inserts its beak in the bark, fruit or leaf that it may have settled on, and begins the formation of its covering scale.

If the scales are examined closely there will be observed two shapes, one oblong and one circular. The oblong scales will transform in about a month's time to a minute two winged fly, so small and delicate that it rarely takes wing. This is the adult male San Jose Scale. Unlike her mate the female never leaves the scale, for after first inserting her beak in the tissue of the tree she loses her legs and becomes a grub-like creature protected by the scaly cover. She becomes sexually mature in about a month after she attaches herself to the bark, and after mating gives birth to living young. This process is repeated four times during the summer, and since each female gives birth to something near 400 larvae during her life about six weeks, it will be readily seen that a very large colony of scales can be developed in a summer from one fertile female.

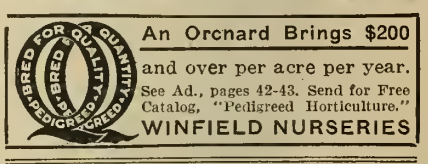
These scale insects are usually found on the smooth bark or rapidly growing twigs, and in the deep cracks of the trunks as well as on the leaves. In fact they appear on any of the tender portions of the tree, except the roots, and may be found on almost any kind of wood plant, and of any age, from tender nursery trees, to the partriarchs of the forest.

The damage which these insects cause comes from the multitude rather than from a single individual. One scale insect, or even one thousand, will suck but an insignificant amount of sap from the tree. But when the number is increased to millions, then the drain on the tree becomes unbearable, and in time it dies. Each scale that is attached to the tree causes a discoloration of the tissue. On the fruit there will be observed a little red spot, perhaps a quarter of an inch in diameter, encircling the scale. On the bark of the twigs and branches the discoloration is not so evident upon the surface, but by slitting the bark open the inner portion will be found to be more or less of a reddish tinge. The discoloration is caused by a poison which is believed to be injected into the tree by the insect, and is perhaps comparable to the discoloration on the skin of our hands when we are bitten by a mosquito.

San Jose Scale may be kept in control as easily as any other pest of the orchard by adopting proper spraying methods. The most popular remedy at the present time is lime-sulphur. There are other preparations, such as the soluble or miscible oils, and kerosene emulsion. The lime-sulphur spray may be prepared at home from lime and sulphur boiled together with water, or the commercial brands of the concentrated material may be used. There is a distinct advantage in using the commercial brands of lime-sulphur as the material can be obtained all ready to dilute and apply. There is no fussing with boiling, etc., and the stock solution will keep for a long time if kept in an air tight vessel.

Where the commercial solutions are used, one needs to provide himself with a hydrometer for testing the strength of the mixture. This instrument is a small glass tube with a little bulb at one end, on the neck of which is a scale something like a thermometer scale. It is dropped into the lime sulphur solution and will partially sink. The mark on the scale can then be observed and indicates the degree or strength of the liquid.

In controlling San Jose scale the trees must be sprayed with a strong lime-sulphur solution during the dormant period, either in the fall or early spring. Then, on account of the young insects being born during the summer in enormous numbers, it is desirable to spray the trees at that time, in order to kill as many as possible. The miscible-oil or lime-sulphur properly diluted are the most effective materials for this purpose. But if the first, or dormant spray has been well applied there will be but little need for the summer application, in so far as the scale is concerned. Spraying for scale every year is not a necessity, unless one's trees are in a neighborhood where infestation comes in from the outside. But even so, annual spraying during the dormant period is well known to serve as an invigorator and goes a long way towards keeping the orchard in a healthy and vigorous condition. The orchardist who gives his trees the best care is the man who grows the best fruit and makes the most money.



An Orchard Brings $200
and over per acre per year.
See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."
WINFIELD NURSERIES

STRAWBERRY PLANTS
guaranteed as good as grow, at $1.00 per 1000 and up. Catalogue Free.
ALLEN BROS., PAW PAW, MICHIGAN

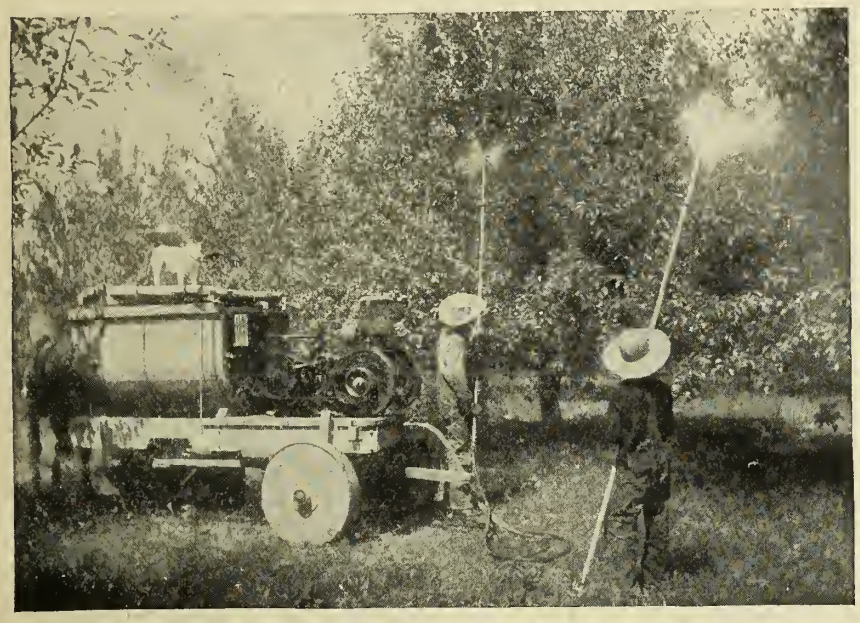
Secure and Profitable
These essentials of a good investment are combined in our
7% First Mortgage Gold Bonds
Paying Interest of 7%
payable every six months in coupons attached, which can be collected through your local bank. Issued in denomination of $100, and fully protected by the entire assets of the company. These bonds are dated July 1, 1907, and run ten years.
Write for full details and booklet.
THE FRUIT-GROWER
St. Joseph, Missouri
Capital Stock, $100,000.00, Fully Paid

SUCCESSFUL SPRAYING

In response to an inquiry about our spraying experience the past season, will give a few notes that might be of sufficient interest to find a place in your January Spraying Number.

With indications last spring of a heavy bloom, we procured a complete power spraying outfit. We gave three applications at 200 pounds pressure; the first just as the bloom buds were showing pink; second as the bloom fell, and last two weeks later, when apples were almost as large as marbles.

In material we used lime-sulphur, home boiled, and a few barrels of a well-known commercial brand. The former tested about 32 to 33 degrees Baume by the hydrometer; the commercial testing only 26 degrees Baume. This was applied 1 to 30, and the home boiled was used 1 to 40 gallons of water. Arsenate of lead in paste form was used two pounds to fifty gallons water in all three sprayings.



MR. GARRETT'S SPRAYING OUTFIT AT WORK

As for results, I am glad to say we had less than 1 per cent of wormy or scabby fruit. The whole crop being of unusual color and quality. We found it no trouble to find sale for a crop of this kind. In fact, buyers pronounced our apples the finest they had ever seen in this part of the state. That the spraying was a tonic to the trees is evidenced by their splendid condition and the healthy crop of fruit buds for 1912. C. O. GARRETT.

Iowa.

Good Returns From Spraying.

In my orchard I have been able to work out a system of management which has enabled me to bring it to a stage where it is easily paying me a net return averaging $150 per acre. In late summer I sow a crop of rye to serve as a cover crop during the winter. This is turned under as soon in the spring as the ground is in condition to work good. Then I start the disc, as often as necessary to keep the weeds out and keep the soil thoroughly cultivated. During the dry weather of summer this serves as a means of conserving the moisture, although at that time I frequently use a drag rather than the disc. This cultivation is continued until the middle of August.

During the past summer cultivation had to be discontinued at that time as the limbs were so loaded with fruit that the limbs had to be propped to keep them from breaking. For props I used boards one by four inches, cut to fit the limbs that were likely to break, using about 1,500 feet of lumber under 500 trees.

Spraying was started about the last of March. My spraying equipment is a one-horsepower gasoline engine and a high pressure pump, with three leads of hose, each lead being 30 feet long. The material used was lime-sulphur at a dilution of 1½ gallons to 11 gallons of water for the first spraying.

The first application for the codling moth and canker worm was made just after the petals had fallen from the blossoms using lime-sulphur, 2 gallons, diluted with 50 gallons of water and containing two pounds of arsenate of lead. Let me emphasize the fact that this spraying should be done under a pressure of not less than 150 pounds. In my spraying I thoroughly drenched the trees, not leaving a dry twig.

In about ten days I followed this spraying with another application, using the same formula, except that it contained only one and one-half gallons of lime-sulphur to each fifty gallons of water. This spraying was for the tardy blooms and the branches that were skipped in the first time over.

The third application of this spray mixture was made about the first of June, using one gallon of lime-sulphur to two pounds of arsenate of lead to fifty gallons of water. This concluded the spraying for the season and made me a fine crop of apples.

My apples for the past season were the finest in this part of the country. In fact the fruit was strictly fancy and I sold them at $2.50 per barrel, while my neighbors sold theirs for $1 to $1.20 per hundred pounds. I had no wormy apples to speak of, and no fungus, and the crop was smooth and of high color. I did some thinning, and now realize that I should have done more. It was an experiment that will enable me to profit in the future.

Thorough cultivation and proper spraying at the right time will make good apples in this part of the Ozarks, and this fact has been so fully demonstrated this year that even the "knockers" must admit it.

Arkansas. J. M. DERREBERRY.

Fire Blight of the Pear and Apple.

This disease is common in various parts of eastern Washington on pear trees and is beginning to get into western Washington. In some parts of eastern Washington it also occurs on the apple. The disease is caused by a bacterium which lives in the cambium layer just beneath the bark. It causes the cambium tissues to decompose and turn black. It spreads through this cambium down the tree and by girdling the tree may kill it. After the cambium has been dead for a short time the bark above it also blackens. This surface blackening is usually an inch or two behind the blackening beneath the bark. The leaves also turn black in the pear, while in the apple their color is more of a brownish black.

This disease spreads most rapidly in the spring of the year, the bacteria being picked up on the feet of bees and other insects as they fly about the orchard and is rubbed off on flowers which they enter in search of nectar. The disease thus usually starts in a fruit spur, although it may also make its entrance in the tips of young, delicate sprouts, especially those that are full of sap, much as water sprouts.

To fight this disease, go into the orchard just after the leaves fall and prune every sign of the disease, being careful to cut well below it. With a knife, find out how far the disease goes under the bark; then cut the limb off to the best place for pruning at least eight or ten inches below the lowest signs of the disease. If the disease appears in the spring, go into the orchard at once and prune out in the same manner. The disease can be very easily spread on the pruning knife.

The tools used should, therefore, be frequently cleaned and the cut ends of all branches wiped with a sponge soaked in a solution of corrosive sublimate one part to 1000 parts of water. The disease can be carried on orchard tools such as cultivators as well as on pruning tools and insects.

If the disease has affected the trunk of the tree all of the diseased tissue should be thoroughly cut out, the wound disinfected with the corrosive sublimate, painted over and then allowed to heal.

Be especially careful in the fall to get rid of all the disease so that none winters over in your orchard. Watch wild pomaceous trees like the hawthorns and service berries for fear it may get into them and winter over. If the blight is bad in your region, harden up the wood of your trees as fast as you can. Cut down the amount of irrigation or of cultivation to the minimum and remove all water sprouts. So prune your trees that the fruit spurs are thrown out on to the branches away from the trunk. You will thus have more time to meet the disease in its path down the limbs.

Pear blight can be eradicated if you are thorough, careful and prompt in your work.—Washington Exp. Sta.

Young Orchard Pays Its Way.

The returns for 1911 from the demonstration orchards established by the Massachusetts Agricultural College are beginning to come in to Alvah J. Norman, who has the supervision of these demonstration orchards. He reports that he is very much pleased with the results of the work for such a dry season. The returns are very interesting in that they show the possibilities in the way of net returns from land planted to orchards in Massachusetts.

The prevailing idea is that the man who plants an orchard is throwing away the use of his land for ten or fifteen years, before the trees come into bearing. How very incorrect this idea is has been well shown from the returns made by C. W. Maynard, of Enfield, Massachusetts, who was the first to make returns for 1911.

PICKING AND PACKING CREW IN THE DERREBERRY ORCHARD

The college planted an orchard of about 450 trees on Mr. Maynard's place in May. The cost of preparing the land, planting the trees and caring for the orchard was, of course, borne by Mr. Maynard, and the entire expense for preparing the land, about four and one-half acres, planting the trees, caring for the trees, planting associated crops and caring for them, including cost of seed, fertilizer and harvesting, all labor items being charged at prevailing prices, totaled $118.35. The returns from the associated crops were as follows: Red kidney beans, $112; sweet corn, $56.82; turnips, $12; and the berries from a small patch of raspberries, which were already in one corner of the orchard, sold for $26.01; giving a total income of $206.83, which leaves a net profit of $88.48, or approximately $20 per acre.

The orchard is planted on rather light land, which, together with late autumn planting and extreme drouth, did not lead those in charge to expect much growth the first year. Mr. Norman stated when the trees were planted that he would be satisfied if half of the trees would live in case of a dry season. The dry season certainly came but only 10 per cent of the trees failed to come through the season, while some trees sent out several strong branches some of which measured 40 inches. The average length of the new branches is nearly 25 inches. The average diameter of the trees is about five-eighths of an inch. Next spring new trees will be planted in the place of the dead ones, and those which seem stunted.

Allcock's PLASTERS

A UNIVERSAL REMEDY
For Pains in the Back.
Equally effective for all sorts of aches and pains the result of taking cold, overexertion or strain.

Constipation, Biliousness, Indigestion, etc.
Brandreth's Pills
Entirely Vegetable.

Secure and Profitable

These essentials of a good investment are combined in our

7% First Mortgage Gold Bonds

Paying Interest of 7%

payable every six months in coupons attached, which can be collected through your local bank. Issued in denomination of $100, and fully protected by the entire assets of the company. These bonds are dated July 1, 1907, and run ten years.
Write for full details and booklet.

THE FRUIT-GROWER
St. Joseph, Missouri
Capital Stock, $100,000.00, Fully Paid

FRUIT GROWING IN ARID REGIONS. A New Book, by Paddock and Whipple. $1.50. The Fruit-Grower, St. Joseph, Mo.

POINTS FOR BEGINNERS

A Little of the Experience of One Who Has Been Forty-Four Years in the Business

As I travel all over the United States, I often come across people who are sick of being mere "runners on the road." Many a lawyer, judge, merchant and professional man wishes he had a place in the country, and knew what to plant and how to go about it so that he could make an independent living there. These people are tired of city life and realize that there is something better for them on the green and brown hills beyond the ends of the streets.

The people who are willing to help themselves are the ones I want to help As the years pass, I see more and more plainly that the Lord gave us our hands to work with, and our brains to think. He did not mean that we should use one only. We should think of the simple things. We should live the easiest way. But we don't seem to want to do this, and we keep looking for secrets that will make the way easier. There is where the trouble lies, for there are no secrets and everything is easy in this world, if we only open our eyes to it.

When a man is rich and making lots of money, he has many friends. But when he is poor, the first of these friends may give him a loaf of bread, but I doubt that the second will. So it's up to you to be a judge of your own affairs, to do your own thinking,

IRRIGATING A FIELD AT BERRYDALE EXPERIMENT GARDEN

and to put yourself in such a position that you will be in no danger of starving some day, physically, morally or mentally. Get a business you can be proud of; make your business your hobby; and you will make money and be happy. I do these things, and I know how it works.

Each year we bring to this country from across the water over Three Million Dollars worth of nursery stock. This, with the millions of dollars worth that is grown at home, is planted and most of it made to produce fruit in a few months or years. There is an enormous growing demand for fine fruit all over the world, while the production is actually no more than holding its own. If, instead of farm boys and men going to cities and mills, they would go to a nursery or orchard and learn the business, they would soon be able to start for themselves, and become independently rich a good deal quicker than they possibly could in any other work. And if, instead of struggling on in a city with an income that is too small, people would buy a place in the country, either large or small, and grow fruits, they would find life easier, healthier and happier, and would be able to provide good homes for themselves as long as they live.

The best soil a grower of fruit can have is a sandy loam. Here is how I would go about picking my location. Find an eastern or southwest slope, and go about half-way up. If you get too high, you will lack moisture, if too low the ground will be damp, and spring frosts will catch the blossoms. Air drainage is necessary for a successful fruit farm. An exception to the general rule is that peaches do well on hill-tops. New land is the best of all, and when you find it, walk over it and look for brakes, or braken. (Some call them ferns, but this is not correct). Brakes will grow only on rich, sandy loam, which is exactly what you want, and the more brakes the better the soil is likely to be. When I first came to Holland and bought Berrydale, people said it was the poorest, sandiest soil around. Now they ask: "How do you do it, Mr. Mitting?"

If the ground is new, clean off the brush during winter and have it ready to plow as soon as spring opens up. If you have selected cultivated land, plow it the fall before and let it lie rough over winter. Do not plant your fruit this first spring. Keep the ground in as nice shape as possible—deeply and thoroughly mixed, packed so there are no air-spaces, very fine, and smooth.

Plant no less than five acres of one variety of berry if you want to go into it commercially. By having five acres of one kind, you can bring the buyer to your door, where if you have small mixed plantings of several kinds, you will have to hunt the buyer. If you wish to peddle your product, get at least five acres of ground. Plant three acres in berries and use two acres for buildings and stock lots. You can make a good living from such a place. If you want to know how it is done, the writer will tell you what to plant and help you all he can. Do not use any fertilizer when you plant fruits. Wait until the following year, then sow a ton to the acre of air-slacked lime. Lime is needed to sweeten land, or correct acidity, to destroy insects and as a fertilizer to a certain extent. If your soil is sour and full of poisons, it is unfriendly to roots, and in it no plants or trees will thrive or bear fine fruit. Other fertilizers can be added as needed, in the form that is cheapest and easiest to apply.

When trees and plants come, unpack them and put the roots in water, unless they are frozen, then they should be gradually thawed out in a cold cellar. If not ready to plant, heel-in roots, tops and all. When starting to plant, see that roots are so wet that soil will cling to them. Trees should go in an inch deeper than the graft mark, plants the same depth they were before, which can easily be told. Plant in as long rows as possible, to make cultivation and working easier. Keep the newly planted ground cultivated clean from early spring till frost comes. No matter whether you have weeds or not—keep stirring the soil. Hoe along each side of berry rows, dig around trees. Do this early in spring and later also. After hoeing, get a hand-rake and rake each side of the rows. Use a slant-toothed harrow or a drag between the rows. Keep this treatment up all summer, going over the ground every ten days as near as you can, unless it rains and afterwards bakes a crust on the surface, when you must go over sooner. Do not let a weed get two inches high. Remember that you are preparing the plants or trees for next year's crop, as well as finishing up this crop. In berry-picking season, better get extra pickers and let the regular help go on cultivating.

Moisture is the great need of nearly all fruit plants, and the grower's problem is to get enough of it. Irrigation is practiced in many sections, but it is expensive and furthermore, is not needed except in a few of the western states. Proper cultivation will keep moisture in the soil to an extent few appreciate. The sun and the dry air draw moisture from the ground whenever a crust is allowed to form on the surface. But if you break up this crust, and keep a two- or three-inch layer of dry dust on the surface, the moisture cannot escape. It is the same where there is a board or stone on the ground—there is damp earth underneath. Get this dust mulch on the surface early in May, and keep it there all summer. Harrow as soon after a rain as the ground begins to dry and keep the water for the use of the trees and plants. Forget about weeds and think of moisture, and you can raise a big crop if there is no rain from spring to fall.

Always cut out all branches, which have borne fruit, right after harvest. Insects lay their eggs in the fruiting wood, which dies and is of no more use to the plant. If you let the old canes stand till spring, the eggs will hatch, but if this wood is burned the eggs will be destroyed. If you allow no dead wood or trash to stand or lie about your place, you will not be bothered very much with insects, providing you plant clean, healthy stock.

People should go to nature for lessons on pruning. Notice that a tree in its wild state, when growing out in the open where it gets lots of air and sunlight, has limbs right down to the ground. Then why should we trim fruit trees 5 or 6 feet high. The sun should never directly strike the stem of a tree, or the bark anywhere, during the growing season. This would interfere with the flow of sap, as well as with other things. Leaves are meant to shield the bark, to absorb light, and food from the air. They feed the tree just the same as roots do, and they keep the branches cool. A good, rich crop of foliage is necessary if the tree is to thrive and grow, and produce fruit that is worth while.

Plant one year trees only, and those that have an upright habit of growth should be cut down to no higher than a foot or fifteen inches. Cut on a slant which faces the north, as the sap flows more on that side, of the stem, and the wound will heal quicker than if the cut was on the other side of the stem. This cutting back should be done about a month after planting, or just as the sap begins to flow. Plan the head of the tree right there and then. Leave only three or four branches, growing in the right directions, and prune to form a hollow center, or open head. Cut out all cross limbs each season. (Note.—Weeping growers, such as Burbank plum, should have a three- to four-root stem left). Peaches should have half of each year's growth cut back in the spring, as well as all dead twigs cut out.

Study the habits of growth of the trees you plant. Ask the nurseryman what they will do and how to handle them. Thousands of trees all over the country would be alive today, and bringing the owners great profits if they had been properly pruned and cultivated and sprayed. Instead of this, the orchardists forgot or ignored the spraying, pruned them wrongly or not at all, and made a pasture of the orchard. The cattle or horses, to keep flies off and to find a cool place, gathered under the trees, tramping the soil so hard that it would crack in the summer. I have seen these cracks so wide that you could put your hand in them. Think what the effect of this is on the trees—drying them out at the roots, just when they ought to be growing. Trees die under such treatment.

A. MITTING.

Michigan.

Subscription expired? Renew today.

Send For a FREE Sample

OF THIS NEW

Spraying Hose

The only way you can judge this hose is by examining it. There's no other hose with which it can be compared—it is different from all other brands. A **real** improvement in

SPRAYING HOSE

The lightest in weight; resists the highest pressures; will stand the maximum amount of abrasion. An extremely durable hose which will give the limit of wear and satisfaction. Tell us your requirements and we will send free sample and price; also some valuable pointers on the care of hose.

Manufactured Only by

Quaker City Rubber Company

629 Market Street PHILADELPHIA, PA.

Winfield Pedigreed Trees

make $$—be sure of yours.

See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."

WINFIELD NURSERIES

SPRAYING EXPERIENCE

What to Spray For, When and How to Spray As Told By Proprietor of Hillside Farm

No feature of our horticultural work has caused more anxiety and interest than the protection of trees and fruits from insect pests and fungous difficulties. Several years ago we thought that we possessed all knowledge upon the subject; to-day our most thorough experimenters cross this threshold with the caution of the mariner embarking upon an unknown sea. Men of every walk of life have become alarmed at the threatened destruction of our fruit orchards and vineyards, and this too, at a time when we are changing from a nation of steak eaters to one of fruit eaters. Yet amid this gloom and all this threatened danger we have advanced in the practise of spraying, so that brighter hopes are held for the future by those who note the essentials.

With me the work of spraying has been exceedingly profitable. There are phases of horticultural operation that seem to admit of indifference, but spraying never. It must be done at the proper time, with the proper material, and with full knowledge and regard for conditions. To be successful we must first know what to spray for, next what to spray with, how to mix the material, and the right time to make the application. Spraying has not yet become general, for the reason that farmers have not adequate knowledge of insects, of their life history, of their ways of propagation and spread, or of their manner of obtaining their living whereby injury is done to trees and fruit. There are many species in collections, and about two hundred different kinds of insects that prey upon the apple alone.

Many fruit growers make no effort in spraying, and consequently suffer continual loss to their orchard interests. It is not essential to learn about all the pests, but it is necessary to know a few of the general principles that govern insect life in its methods of propagation and in its feeding habits. This every fruit grower may learn from his state experiment station and farm papers, which are continually giving information in the most practical form. There is no longer valid reason or excuse for any farmer or fruit grower to be ignorant of the methods to be employed for the prevention of loss from insects.

It is also very important to start the spraying at the right time. No fixed rules can be given for this. When the aphids begin to appear, the trees need to be inspected closely to note when the insects begin their damaging work. Following a warm period in March, we have found the young aphids, that had come out before the leaves. It is also important to spray these at this early time; otherwise they will injure and weaken the buds in their development, lessening the quantity and also injuring the quality of the fruit. The tent caterpillar frequently hatches before the foliage comes out, when it is forced to live upon the buds. They are even more destructive than the aphids, both of which occasionally are preying at the same time upon the buds. The crop of fruit at times is nipped in the bud by these insects that come out in advance of the foliage.

To obtain well-developed fruit with high color, the leaves of trees must be protected. There are many kinds of leaf-eating insects that so injure the foliage that there can be little or no perfect fruit obtained, as it is through the foliage that the trees and fruit are nourished and developed.

By going through the apple orchard and looking at the apple trees that have been sprayed, there will be found very few perfect leaves. Nearly every leaf will be more or less eaten, in many instances only the stems being left. The fruit will be small, with no color and of poor keeping quality. By spraying with Bordeaux, to which is added two pounds of arsenate of lead to each fifty gallons, as soon as the blossoms have fallen, again in ten days and a third time two weeks later, scab and other fungi will be controlled, the codling moth, tent caterpillar and other leaf-eating insects will be destroyed, and the fruit will be of much finer quality. The spraying must be done with great thoroughness. This cannot be done on a large scale, with small hand pumps. A good power sprayer is more economical. The hand pumps are handy for use about two-year-old trees and berry fields.

I am using a petroleum solution, scalecide, as an autumn and spring spray. This material was used the second week in November, when the foliage was partly off the trees. One gallon of scalecide is put into 25 gallons of water, when it is ready for immediate use. This solution has done most effective work in our orchards. The lime-sulphur mixture is a disagreeable material to apply, laborious and expensive to prepare and unless perfect in its combination is ineffective.

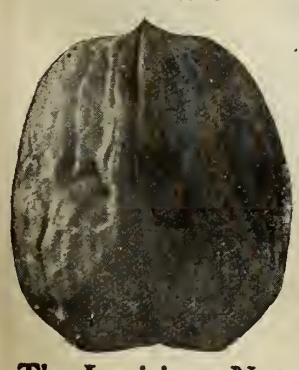
We make two applications of scalecide in the fall and in the spring. The scale is less resistant at these times, and by so doing I expect to kill 90 to 95 per cent which will prevent any perceptible injury to fruit the following season. Pears and apples are attacked by the apple and pear scab, a fungus that spots and cracks the surface of the fruit. The foliage of the apple suffers from the same cause. Before we began regular spraying we had trees well loaded, but entirely without leaves early in the fall. The crop under such conditions was of no value to us. Since we have taken up regular spraying, covering several years, we have had regular crops of an exceedingly fine quality of pears, and apples. For the last few years we have been reducing the strength of Bordeaux until at the next spraying this coming spring we will use the 4-4-50 solution; that is four pounds of bluestone, four pounds of lime and fifty gallons of water. We have little or no discoloration of the fruit, arising from the stronger solution of Bordeaux, which has done much damage to some growers during the past six years.

We start to spray our orchard as soon as the trees are planted. Young trees are very generally attacked by canker, which soon shows itself on the body in dark-colored patches, even at two years old, and not only is the foliage sprayed to prevent fungus and insect injury, but the bodies are as thoroughly sprayed to protect them from the attack of canker. In spraying older and bearing trees, the branches and bodies are as thoroughly covered with Bordeaux as the fruit and leaves. Where there is a commercial orchard of any extent it is now necessary to have a force of men whose time is to be exclusively devoted to spraying for a period of nearly two months. If this is done it will give from 75 to 85 per cent of good marketable fruit. Before spraying, prune the trees, cut out the tops and hold them down to 18 feet in height. A fruit tree will stand more pruning than most fruit growers imagine if done intelligently. Remove the brush before beginning to spray.

C. A. UMOSELLE.

New Jersey.

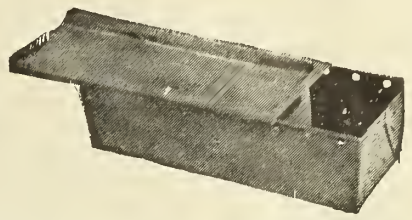
Walnut Trees



Plant some of our hardy English Walnut trees this season. Our trees are all **grafted on the Eastern Black Walnut Stock** and are the hardiest and best for planting in the Northwest as well as for Eastern planting. Orders for Northern planting can be shipped from our Pennsylvania branch this season at the proper time for planting in Northern latitudes. Write for descriptive price list.

The Louisiana Nut Nurseries
JEANERETTE, LOUISIANA

The Hamilton Reservoir ORCHARD HEATER



The Most Powerful and Most Efficient Orchard Heater on the Market, and Has Produced Most Remarkable Results due to

The Regulated Fire

Draw the cover and get all the heat you need. This means the burning of one gallon of oil per heater in ten hours for a mild frost, one gallon of oil per heater in six hours for heavy frost, one gallon per heater in four hours for hard freeze with wind, or one gallon per heater in two hours should an extreme emergency arise, and use the same number of heaters all the time. This is **FIRE REGULATION,** and means absolute safety to your crop against any weather condition. To increase the heat, increase the consumption of oil. Added to this feature is a large fuel capacity (3 to 6 gallons), and the two combined in one device makes it the most powerful and satisfactory for this work. Do you get any of these features in any other heater offered you? Make careful comparisons before buying and you will at once appreciate the vast superiority of the **Hamilton Reservoir.** Our new literature will tell you of other superior features of this Heater and what it has done for thousands of growers. Better write for it today.

The Hamilton Orchard Heater Co.
Grand Junction **Colorado**

Sales Such as These Are Made on Merit Only

THE

Bolton Orchard Heater

IS INSTALLED IN

the LARGEST APPLE ORCHARD
the LARGEST LEMON GROVE
the LARGEST ORANGE GROVE
IN THE WORLD

It was necessary to **prove** the Bolton Orchard Heater was the best before landing such orders. The careful business management of these orchards does not **guess** in matters of this kind.

The Bolton Orchard Heater

invariably wins "hands down" in all field trials. Let us send you some data on this and also a list of users of Bolton Heaters. We are the originators and the largest manufacturers of Orchard Heaters in the world.

THE REX SPRAY CO. are our distributors in Eastern territory. Offices at the following points: Toledo, Ohio; Omaha, Nebraska; Rochester, N. Y. We have factories for Eastern orders at Kansas City and at Toledo, Ohio. Orders should be 60 days in advance for guaranteed delivery.

The Frost Prevention Company

MAIN OFFICE
Bank of Italy Building,
San Francisco, California

KANSAS CITY OFFICE
109 Temple Block,
Kansas City, Missouri

SPRAY FOR VINEYARDS

How Vineyardists Along Lake Erie Combat the Fidia or Grape Root Worm

The grape vineyards of the Lake Erie valley, the garden spot of the east, remained from the absolute necessity for spraying much longer than would be thought possible by one familiar with the great centralization of the grape growing industry here. The district occupies by far the major portion of the land for the entire area extending along the south shore of Lake Erie, from Erie county, New York, through Chautauqua county, New York, and Erie county, Pennsylvania, almost to the outskirts of the city of Erie, a strip at least fifty miles long. For it is a well known principle of economic entomology that under natural conditions the natural enemies of almost any plant are largely kept in check by their own natural enemies, and only when unnatural conditions arise, such as the centralization of grape growing in this one area, then arise also those natural enemies of whatever industry happens to be involved, and that industry is seriously involved in attack and danger.

So often does this occur, that students of the grape problem have been amazed that for almost half a century grapes were grown without other care than cultivation and picking. This amazement was followed by some study which developed the fact that the peculiar climatic and geographic situation had much to do with the success of grape culture here, for the proximity of the large mass of water in Lake Erie, the rather abrupt rise of elevation from the lake to the hill, and the natural drainage and circulation of both air and water resulting combined to produce conditions of vineyard dryness found in but few sections of the world. Hence were kept in check the great natural enemy of the grape, the black rot, and permitted but small scope for its next nearest competitor in danger, the downy mildew or brown rot. The long continued absence of these two troubles lulled the growers for years into a sense of security and a dozen years ago a spray pump or Bordeaux mixing outfit was unknown.

And then came the awakening. What the rots are to fungus troubles of the American grape, the Fidia, (common grape root worm), is to its entomological enemies, and one season before the growers knew what had happened the Fidia was in the vineyards, and trouble stalked abroad. Appeals to the state college of agriculture, the state experiment station, to the Department of Agriculture at Washington, and to those Ohio experts who had been battling for a few years before, resulted in a flock of investigators, but no remedy. The following year a large area of vineyards became infested with a little thrip, a close first cousin to the rose thrip, which came in such immense numbers that tens and hundreds of acres of vineyards had their leaves sucked dry and brown before the end of the summer, and the grapes never reached maturity. The centralization of the grape industry had finally borne its fruit of unnatural conditions, and while it is likely that this area will never be seriously attacked by the rots, because of the prevalence of the day and night winds as stated, and their drying effect on the atmosphere, yet the Fidia viticidia, the grape leaf hopper, and still more recently the rose chafer, the grape blossom midge, the steely beetle, and other insect enemies are all here, and here in dangerous number.

Spraying has come to stay. It is found that even the hitherto small and little considered loss from brown rot, which has been stopped by careful spraying, is having its effect in larger yields and finer grapes. Few fruit-growing sections ever had a more discouraging fight against what looked like ruin, than did the grape growers of the Lake Erie valley when the attack of the Fidia viticida was at its height.

To those who are not grape growers, let me explain that the Fidia, in its adult stage, is a small, insignificant looking brownish black beetle, not more than an eighth of an inch long, slim bodied, and a small feeder. They appear on the grape vines, eating off the younger and tenderer leaves, and leaving a characteristic mark to show their presence in the form of chain-like perforations caused by their eating out the green of the leaves. The female is lighter brown than the male. The Fidia does not, under anything like normal conditions, do any damage in the adult stage, and is such a light feeder that for years all efforts to poison the beetles with any of the arsenical poisons was given up as a failure, the only appreciable effect being to drive the beetles from the sprayed to any nearby unsprayed vineyard.

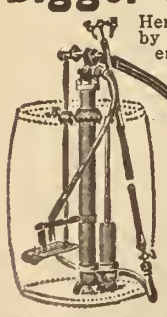
The adult beetles themselves are not a menace to the crop; the danger comes from their unusually large progeny. In June and July the females lay egg masses by the hundreds on the trunk of the vine, under protecting scales of the bark, and a few weeks later these eggs hatch and the grub drops to the ground, and almost at once burrows from sight. Once this has occured the fate of the vine and of the vineyard is as good as sealed. Once in the ground the grubs begin feeding from the tender rootlets, those filaments upon which the gathering of the plant food is absolutely dependent, so that in the spring there is no root system left to start the growth for the coming season. The grubs are most voracious and likely to be most numerous. If they are numerous the vineyard, or such parts of it as were affected, is seriously damaged, and often has to be replaced by new vines, or else abandoned.

The Fidia completes its life cycle by coming early in the spring following its voracious summer attack on the grape rootlets, to near the surface where about the first of June (date dependent upon soil, season and latitude) it turns into the pupa stage. At this time it is in a tender form. Thorough stirring of the soil uncovers many, breaking open the tender shell and destroying the insect. For years this was the sole effective remedial measure known. That and shaking of the vines and catching the adult insects in long "catchers," were the recognized means of combating the

Standard Spray Pump

Used with bucket, barrel or knapsack. Sprays the tallest fruit tree from the ground. Does the work in half the time. Sprays whitewash and cattle "dip." Made of brass and warranted for five years.
Write for special offer or send $4. Express-age prepaid. Money refunded if not fully satisfied.
STANDARD STAMPING CO.
541 Main St., Marysville, O.

Bigger Fruit Profits



Here is a spray pump invented by fruit growers. It was our endeavor to secure the best spray pump to use on our 300 acre fruit farm that produced the
ECLIPSE SPRAY PUMP
It overcomes every defect found in other makes—it has proved itself best in actual work. Put an Eclipse to work on your trees and earn bigger profits. Write for our fully illustrated catalogue. It tells why you should spray—and why you should do it with an Eclipse. It's free. Write to-day.
MORRILL & MORLEY MFG. CO., Benton Harbor, Mich.

Chemicals *for* Spraying
(BULK PRICES)

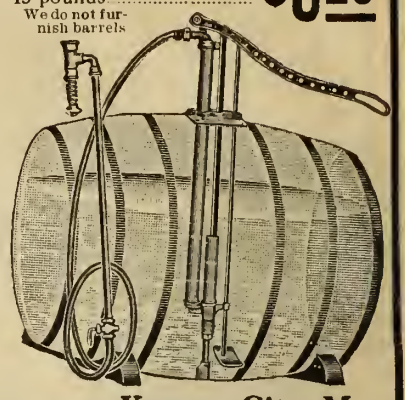
Our Fungicides and Insecticides comply with the various National and State Insecticide Laws. In fact are considerably better than these laws require.

REVISED LIST OF PRICES TO DATE

Arsenate of Lead		**Lime and Sulphur Solution**	
1-lb. Jar	$ .21	Guaranteed 33% Baume	
5-lb. Jar	.80	1-Gal. Jug	$ .60
12½-lb. Pail	1.75	5 Gal.	1.50
25-lb. Kegs	3.25	10 Gal.	2.90
50-lb. Kegs	6.75	**Hellebore (White)**	
100-lb. Kegs	12.00	1 lb.	$ .16
200-lb. Bbls.	23.00	10 lbs.	1.50
Copper Sulphate (Bluestone, Small Crystals)		**Hellebore (Black)**	
1-lb.	$ .12	1 lb.	$ .18
10 lbs.	1.00	10 lbs.	1.60
100 lbs.	9.00	**Bordeaux Paste**	
500 lbs.	42.50	1 lb.	$ .18
Sulphur (Commercial)		5 lbs.	.68
Per 100 lbs.	$3.00	10-lb. Pail	1.30
Paris Green		20 lbs.	2.20
½ lb.	$ .15	**London Purple**	
1 lb.	.25	1 lb.	$ .16
5 lbs.	1.20	5 lbs.	.75
14 lbs.	3.20	25 lbs.	3.50

Order above goods on this number, 11D22.
Write us your needs. We sell sprayers from 29c to $250.00 each. Our prices will save you money.

SPRAYER OUTFIT
23FG11—Sprayer Outfit, complete as shown, weight 45 pounds **$8.25**
We do not furnish barrels



Jones, Post & Co., 1090 Liberty Street, Kansas City, Mo.

You will confer a great favor upon us as well as the advertiser if you mention The Fruit-Grower when writing.

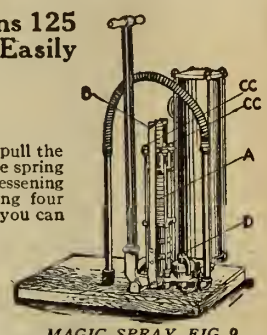
The One Hand Spray Pump That Maintains 125 Pounds Pressure and Can Be Operated Easily

PORCELAIN-LINED, NON-CORROSIVE CYLINDER; INDESTRUCTIBLE HARD-BRASS BALL-VALVES WITH REMOVABLE AND REVERSIBLE SEATS; NO STUFFING BOX OR OUTSIDE PACKING.

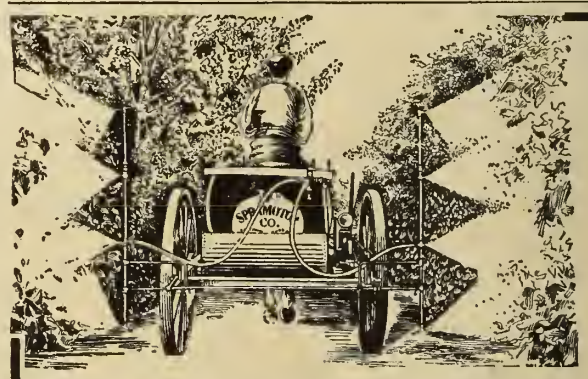
In the illustration, note powerful spring shown at A. As you pull the handle you compress the spring only. When you push it back, the spring expands and helps you force the liquid into the air-chamber—lessening labor by a third. By pulling out two cotter pins, B, and releasing four nuts, C, you can pull out the plunger. By releasing set screw, D, you can open valve-chamber and take out both valves, seats and all.

Write today for new 1912 catalog of famous Bean line of hand and power sprayers.

THE BEAN SPRAY PUMP COMPANY
East of Missouri River, address 101 Front St., Berea, Ohio
West of Missouri River, address 524 Walnut St., Kansas City, Mo.



MAGIC SPRAY, FIG. 9
Read description at left.



Successful SPRAYING

With a Horse-Power **SPRAMOTOR** you can spray to some purpose. High pressure insures best results. Over 500 in use. For 1 or 2 horses. Regulation is automatic—no safety valve. Can be hand operated. Nozzle protector, 12 gal. air tank. Nozzle control perfect for height, width and direction. Equally efficient in field, vineyard and orchard. Guaranteed against defects for a year. Write for free treatise on crop diseases.
AGENTS WANTED
Spramotor Co., Ltd., 1314 Erie St., Buffalo, N. Y.

You will confer a great favor upon us as well as the advertiser if you mention The Fruit-Grower when writing.

Sulphur, Nitrate of Soda
Blue Vitriol

If you make your own Lime and Sulphur Solution, write us for prices on sulphur. We carry large stock in barrels and sacks. Ours is the best and cheapest brand for making solution. Goes into solution readily and stays in solution. We also carry large stock of best Nitrate of Soda in 200-pound sacks, ready for shipment. You can save money and get prompt service by dealing with us.
Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

Please make it a point to always mention The Fruit-Grower when you write in response to an advertisement.

The Richardson Orchard Heater

The Richardson Orchard Heater is the best and only **up-to-date** device for the burning of oil, and that gives the greatest amount of **heat and smoke** for the protection against frost damage or freezing temperatures, of Apple and Peach orchards, Orange, Grape Fruit and Lemon groves, Vineyards, Berry patches and Truck gardens.

The Richardson Orchard Heater's Oil Reservoir is provided with cover and heavy metallic handles, and its **oil capacity** of 26 qts., in most localities, is sufficient for a season's supply. They are **made to nest**, so as to store easily.

After filling reservoir with oil, there is no depreciation in the quality or character of the oil. The oil that may not be used after a season's frost fighting, can be gathered and taken to storage tanks.

The Richardson Orchard Heater's Brass Valves (specially made), the pipe connections, torch burner and fittings are standard strength and best quality.

The **Perforated Burner**, constructed on scientific principles, where the oil is consumed, and the heat and smoke liberated, is one of the important features of the **Richardson type**. With the large reservoir and valve connection between perforated burner, a small, medium or large flame can be controlled according to weather conditions.

THE RICHARDSON FROST PREVENTION CO.
Manufacturers of **Orchard and Truck Garden Heating Devices**
KANSAS CITY, MO., U. S. A.

enemy. Those not killed in the pupa stage emerge from the ground as adult beetles, feed on the leaves, lay their eggs, and again the death-to-the-vine cycle begins.

There is so much of similarity to the life cycle of these insect enemies of the fruits that the layman is apt to exclaim with impatience that they ought to be easy to handle, but the facts are that this same Fidia viticidia proved an unsolvable mystery to the Ohio experimenters who during the years from 1895 to 1905 struggled against it until the bulk of the vineyards in the Cleveland section were abandoned and the fight given up. Then at the absolute demand of the New York growers this state took up the fight and for three years a ceaseless effort was kept up, and almost without effect, and almost without hope. Meantime the Federal Department of Agriculture sent one of its best men to North East, and there another series of experiments was tried. But it was not until an experimental vineyard was established at Fredonia by the State of New York in 1908 and three men assigned there for regular year round work, and the services of twenty practical vineyardists secured in co-operative experiments that the remedy for the Fidia was finally discovered and then not until the late summer of 1909.

Let me say in passing, however, that during the years intervening, while the fight was in progress, spraying had become more common, even if the specific remedy for the root worm had not been found the value and efficacy of Bordeaux, and spray poisons began to be understood, and results were apparent in many other directions.

The discovery of the remedy for the grape root worm was made by Sherman J. Lowell, three years ago, then and still lecturer of the New York state grange. Mr. Lowell owns a vineyard of considerable area near Fredonia and it was seriously affected with Fidia and had been for two years. He was working in co-operative experiments in 1909 and claims no credit for his discovery saying it was through Prof. Frederick Z. Hartzell, entomologist of the Fredonia station that it was made, and that to him alone belongs the credit. The discovery was simply that if two quarts of ordinary sale molasses are dumped into the 100 gallon tank of arsenate of lead poison spray, the added sweetness will attract the Fidia beetles so they will eat sufficient of the poison to kill them. Simple, and effective. Before that discovery every poison spray used drove the beetles away without their eating of the sprayed foliage; the use of the sweetening attracted them to the sprayed leaves, they ate and were killed without depositing their eggs. The discovery came late in the season of 1909. Last year it was tested and tried, and has proven efficacious. Where hitherto careful search would discover three or four dead beetles, and perhaps none under a sprayed vine, where unsweetened spray had been used, search after a sweetened poisoning would find fifty to two hundred. Today not a grape grower in the belt but considers the fight won. Yet Governor Dix of this state has vetoed the appropriation for the grape experiment stations, and unless money is provided by the legislature before March 1st, it will be closed with six years lease of its grounds and buildings still to run.

The above story tells more effectively than anything else I know of, the progress made in spraying in the grape belt. The same entomologist, Prof. F. Z. Hartzell, this year has discovered that the black leaf tobacco extract was as efficacious against the grape leaf hopper as sweetened arsenate of lead was against the grape root worm. Also, that arsenate of lead applied with Bordeaux at the proper time protected thoroughly against rose chafer, the grape blossom midge, and the steely beetle. The efficacy of the Bordeaux against all the rots and mildews are well known.

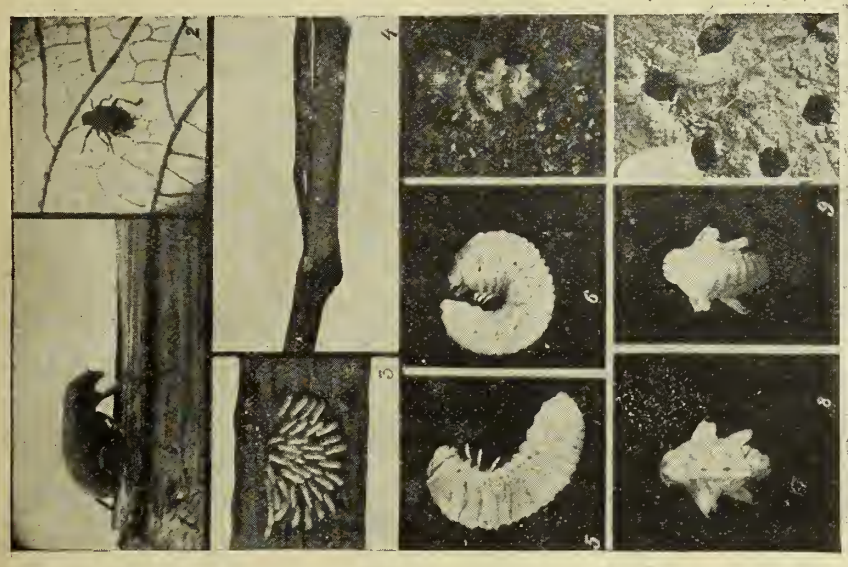
Neither home boiled nor commercially made lime-sulphur washes have proven of use in the vineyards. Up to this time the use of the home boiled lime-sulphur wash has repeatedly caused damage to both foliage and fruit. Those best posted, including the station force, report absoultely adversely to its use until further investigation determine whether in varying strength it can be applied.

Today the best posted vineyardists, and those growing grapes on large tracts, fifty acres upward to 1,000 acres, which is about the largest singly owned vineyard, are all owners and users of spray machines. High pressure machines are required as the grape foliage is dense. Special attachments are used, one having been invented the past season at the Fredonia station for applying the spray to the under sides of the foliage. This is absolutely necessary to combat the downy mildew, and still more so the leaf hopper which works entirely from the under, tender side of the leaf.

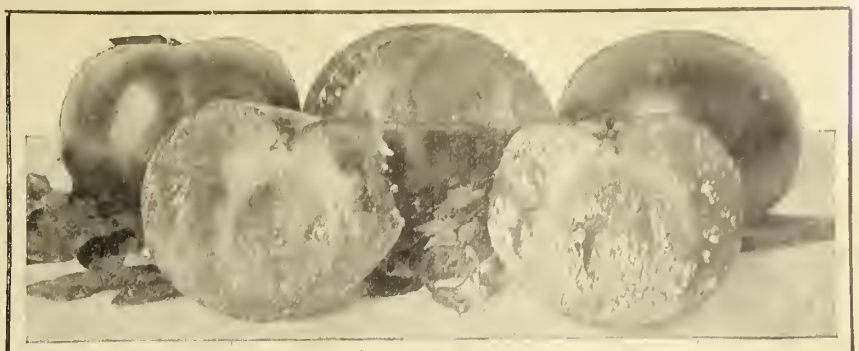
The general practice now includes four sprayings, it being remembered that the molasses-sweetened poison spray cannot be used with the Bordeaux. Some have tried this and nearly spoiled their pumps trying to handle the resulting mess. The molasses and the lime and blue vitrol make a combination which is not soluble and so much be avoided. So, also the black leaf tobacco extract must be used by itself and makes necessary a separate spraying where the leaf hopper is present in numbers. This enemy attacks in scattered localities and so the general spraying with the tobacco is not always neccessary. The three sprays used are two with Bordeaux mixture, and arsenate of lead; one early to catch the blossom midge and the steely beetle, the other well along when the foliage is out to cut off the starting of the summer rot. Then, varying the date to the time when the beetles are most numerous, and trying to get it on just before egg depositing takes place, comes the spray with the sweetened poison. All recomendations are for the arsenate of lead for this purpose.

It is likely that very many growers still do not use any spraying at all; it is also a fact that there is very much to growing good grapes and a maximum crop besides spraying. But the situation reminds the writer of the attempts often made to define politeness. If you try to enumerate all the things required something is sure to be omitted, but if a general definition is given that politeness consists of doing those things which give pleasure to others, and refraining to do those things which will cause pain, then a similar definition of the place of spraying in grape culture becomes apparent. It helps in reaching the maximum crop of the most perfect fruit. Vineyardists who have the broadness to see the whole of the process of grape growing, all own spray outfits or hire them for use in their vineyards.

New York. A. M. LOOMIS.



STAGES IN LIFE OF GRAPE ROOT WORM—1. The beetle greatly enlarged. 2. An adult on grape leaf, about natural size. 3. Eggs, slightly enlarged. 4 Cluster of eggs on a cane. 5 & 6. Larva of Grape Root Worm. 7. Pupa in its earthen cell. 8 & 9. The pupa enlarges. 10. Appearance of the burrows on the surface of the soil. (Photo courtesy Mo Exp. Sta.)



Livingston's Famous Tomatoes

are valued among experienced planters as sure croppers, ready sellers and trade winners on account of their qualities. For over fifty years we have bred tomatoes. Heavy yielding qualities, good color and skin, solidity and flavor—all these points have been evolved in our strains, which are considered the most thoroughbred by all who have tried them. We have tomatoes for all purposes, for all tomato growing sections. If it is something good in the tomato line we have it. Read "Tomato Facts," offered free below, and learn some of the reasons why we can speak so positively of our Tomatoes.

Livingston's Globe

is the greatest tomato ever produced for the South. Its nearly blight-proof characteristics, together with heavy yielding and fine shipping qualities have brought it into favor with the most noted Southern shippers. It's the finest round purple fruited sort in cultivation today. **Pkt. 5c or 10c, ½ oz. 25c, oz. 40c, postpaid.**

Livingston's Beauty

has for 25 years been the leading pink market sort in all sections of the country. An abundant bearer of handsome smooth fruits with solid meat of finest flavor. Quite early and colors up nicely if picked half green. **Pkt. 5c or 10c, oz. 25c, postpaid.**

Livingston's Coreless

is the most perfect shaped scarlet main crop sort ever developed. Of globe shape, large sized. Of finest color throughout, solid and the meat is of elegant flavor. A late cropper of large, handsome fruits which are unsurpassed for market or home use. **Pkt. 5c or 10c, oz. 30c, postpaid.**

Livingston's Stone

is the largest, bright red, perfectly smooth main crop tomato. Yields heavily, keeps well and the firm fruits contain solid meat of finest flavor. Sells better than any other three tomatoes combined. The most popular canning variety in existence. **Pkt. 5c or 10c, oz. 25c, postpaid.**

Tomato Facts

is the title of an interesting booklet. Tells how we grow tons of tomato seeds yearly and how the most perfect tomatoes in cultivation today were introduced by us. Gives reliable culture directions how to grow fine tomatoes. After you read this booklet you know the "reason why" you should get your tomato seeds of Livingstons'. Free with every order for tomato seeds. Ten cents otherwise, which we refund in form of due bill.

Illustrated Catalog Free

A handsome book of 130 pages. Nearly 300 pictures from photographs and honest descriptions make it one of the most trustworthy seed books issued. Dependable culture directions render it a safe guide to a good garden in which you should use "True Blue" Seeds for biggest returns. **A free copy** of this big garden book is reserved for "Fruit-Grower" readers. Send us name and address, to get yours by return mail.

The Livingston Seed Co., 331 HIGH STREET Columbus, Ohio

THE TROUTMAN ORCHARD AND GROUND CROP Heaters

No. 1. Troutman Orchard Heater

Will Give You Absolute Protection Against Frosts or Freezes

The Troutman Orchard Heaters having been proven effective against frosts, economical as to fuel, and easily operated, are placed at the pinnacle of success.

With the Troutman Heaters the grower can either supply himself with small heaters or large heaters, galvanized heaters or plain black iron heaters, orchard or ground crop heaters, just as the local conditions or personal preference requires.

The Round Crest Orchard Heater Co.
CANON CITY COLORADO

SEEDS

Fresh, Reliable, Pure Guaranteed to Please

Every Gardener and Planter should test the superior merits of Our Northern Grown Seeds.

SPECIAL OFFER
FOR 10 CENTS
we will send postpaid our
FAMOUS COLLECTION

1 pkg. 60 Day Tomato	20c
1 pkg. Princess Radish	10c
1 pkg. Self-Growing Celery	20c
1 pkg. Early Arrow-head Cabbage	15c
1 pkg. Fullerton Market Lettuce	10c
Also 12 Varieties Choice Flower Seeds	25c
	$1.00

Write today! Send 10 cents to help pay postage and packing and receive the above "Famous Collection," together with our New and Instructive Garden Guide.
GREAT NORTHERN SEED CO.
313 Rose St. Rockford, Illinois

Alfalfa Book —FREE

We are in the center of the alfalfa district and are the largest handlers of alfalfa in the U. S. We sell best grade seed at low price. Ask for Free Alfalfa Booklet. It gives complete instructions how to grow Alfalfa to insure enormous profits.
Also big catalog of all Garden and Field Seeds Free.
Griswold Seed Co., 137 So. 10th St., Lincoln, Neb.

NO DANGER FROM FROST TO YOUR CROPS AND FRUITS

if you have a "Tycos" Alarm Thermometer installed. It saves the expense and labor of having your heating or "smudging" device running at unnecessary times, and warns you with certainty of approaching frost. It is indispensable to the orchardist and fruit grower. It pays for itself every year if there is no frost, and may pay for itself a hundred times over by giving the "frost alarm" when danger is least expected.

"TAYLOR" THERMOMETERS TELL THE TRUTH
"Tycos"
IS THEIR "STERLING" MARK

A "Tycos" Alarm Thermometer Rings Warning in Your Ears

at just the right time. The bell can be located anywhere desired. It rings when the temperature reaches the point of danger — the "frost alarm" flashes over the wires from the place where the thermometer is located.

The entire system is so simple that anyone can install it. That it is made for lasting, reliable service is guaranteed by the name "Tycos," which means on a thermometer instrument what the eagle means on a dollar.

When you buy any kind of a thermometer, always look for the name "Tycos"—there's a "Tycos" thermometer for every purpose. The name is your protection and our guarantee. Write for booklets, "Thermometer Facts," "'Tycos' Tips for Butter Makers," "The Thermometer Book," etc.

The "Tycos" Automatic Alarm Thermometer may be installed in single Alarm Thermometers, or Annunciator Connection Systems. If your dealer can't supply you, write us. We will mail you free our booklet showing diagrams of the systems, which explain with simplicity the installation and operation of the "Tycos" Automatic Alarm Thermometer. Write today for it.

Taylor Instrument Companies
107 Ames St. *Rochester, N. Y*
"Where THE Thermometers come from."

Here's The ACME

The "ACME" is the *only* Harrow that *cuts, crushes, turns, smoothes* and *levels* in *one* operation and is a perfect weed exterminator and surface mulcher. There are no lumps or air spaces between the furrows after using the "ACME." Your soil is in the condition of a perfect seed bed. The subsoil has been properly packed and the top soil mulched to attract and conserve all the moisture.

The coulters cut through to the under soil, leaving the trash that has been turned under, beneath the soil where its fertilizing qualities may benefit the growing crops. There are sizes 3 to 17½ feet wide. Each

ACME HARROW

Pays For Itself Every 20 Acres

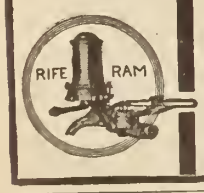
Each "ACME" is the greatest value offered. Any "ACME" will pay for itself on 20 acres the first year and will keep on paying big profits for a lifetime.

Let us send you our combined catalog and booklet containing the service of articles by well known authorities on soil preparation, and describing the "ACME" line. Ask your dealer for prices, or write to

DUANE H. NASH, Inc.
237 Division Ave. Millington, N. J.

RIFE RAMS

Pump water automatically day and night



Water Pumped Winter and Summer *without labor*

Zero weather doesn't stop a big supply from automatic Rife Rams.

Cost little to install—nothing to operate. Raise water 30 ft. for every foot of fall. *Will supply pneumatic tanks against 100-lb. pressure.* Pump automatically day and night, winter and summer. Fully guaranteed.

If there is a stream, pond or spring within a mile, write for plans, book and trial offer, Free.

RIFE ENGINE CO.
2521 Trinity Bldg., New York

Makes repairs neat, and quick. Mends harness, shoes, canvas. Myers' Sewing Awl makes Lock Stitch. $1 prepaid. Big money for agents.

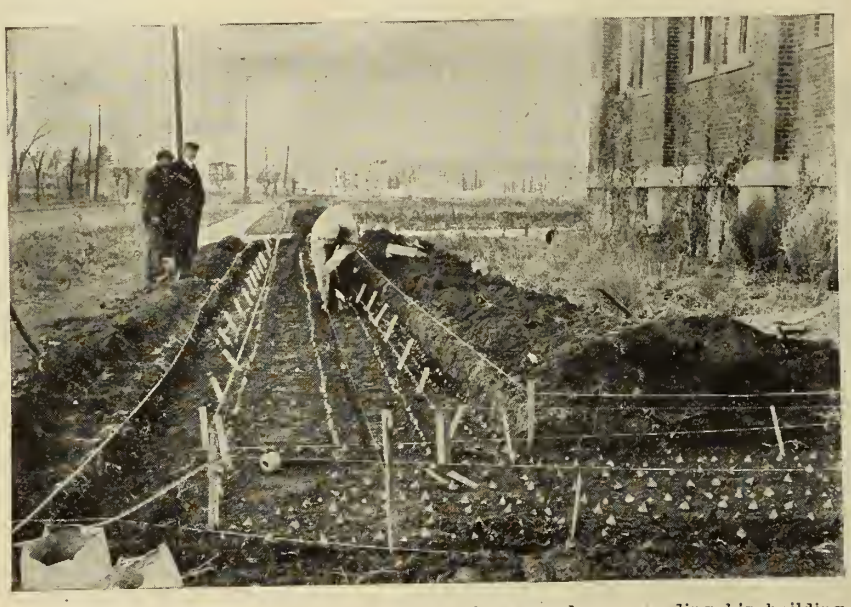
C. A. MYERS CO., 6344 Lexington Ave., Chicago, Ill.

NURSERY AND SEED FIRMS

Shenandoah, Ia., Boasts Two Large Nurseries and Largest Seed House in Middle West

When we think of Iowa we think of a state that is famous for its hogs and corn. But Shenandoah, in Page County, has varied the agricultural program of the state and has made itself famous for its nursery stock and seeds. It is the home of two of the largest wholesale nursery firms in the Mississippi Valley and one of the largest retail seed houses in the Middle West.

Two score years and more ago D. S. Lake followed the advice of Horace Greeley to "go West and grow up with the country," by leaving his New England home and settling on the fertile, black prairies of Southern Iowa. The fruit industry was developing rapidly, windbreaks were needed, and Mr. Lake grasped the opportunity to supply his neighbors with the fruit trees and hedge plants which they needed. He prospered. From year to year his business grew, until now he and his sons are conducting the Shenandoah Nurseries, an institution of mammoth proportions, and doing strictly a wholesale business. Mr. D. S. Lake is recognized by his fellow nurserymen as the sage of the nursery business. He is consulted on the important problems confronting the nursery business, as his opinions are invaluable.



Mr. Field endeavors to make attractive the grounds surrounding his building. This shows the way he is planting a tulip bed in front of his seed house for spring blooming.

In his employ at one time he had a young man named Welch—E. S. Welch. For years Mr. Welch worked faithfully in every department of the nursery; married, and acquired the Mt. Arbor Nursery, also of Shenandoah. It then was a small affair, but since coming into the hands of Mr. Welch it has become a business of almost the same proportions as that of his former employer.

Each of these firms is cultivating nearly 800 acres of land at Shenandoah, almost all of which is in nursery stock. All of this land is of the good, black loam that has made southern Iowa famous for its great yields of corn. On this account, corn forms one of the crops in the rotation which these two nursery firms practice, and this together with clover and hogs makes an amost ideal system of maintaining the soil fertility.

Mr. Lake and his sons are extensive hog raisers. They have a fine bunch of Duroc Jerseys, and shortly before my visit they sold $5,200 of hogs, yet could hardly miss them from their drove. But hogs are maintained as a sort of "catch crop,' for the purpose of utilizing the corn and returning the most valuable portions of the soil's fertility to the land where it can be marketed later on in the form of young fruit or ornamental trees and shrubs.

The digging season was almost finished at the time of my visit and the busy days had begun in the packing and storage houses of these two firms. Their storage rooms were piled high with ricks and ricks of little trees; sorting gangs were busy grading and sorting the trees and arranging them where they would be of easy access for filling the car-load orders which were already booked.

These packing houses are thoroughly modern. They are built of brick and reinforced concrete and have a spur of the railroad track extending into them so that loading can be done with the greatest economy and safety. In the storage building of the Mt. Arbor Nurseries Mr. Welch has a ventilating system arranged so that fresh air can be supplied to any portion of the immense structure, and the damp, stagnant air removed. This makes it easily possible to keep the trees in perfect condition during the few weeks they remain in the storage house. But in addition to this modern ventilating system, Mr. Welch has a cool storage room, where stock can be kept at a uniformly cool temperature throughout an entire year, if such should be necessary. Its use is principally for holding dormant a considerable quantity of trees in late spring in order to supply the demand that invariably comes when the planting season in spring rolls around. By having stock that is perfectly dormant, Mr. Welch can supply his trade with trees that are ready for planting and which will not have started to grow when they are received by the retail nurseryman.

While the principal business of each of these great nurseries is that of producing fruit trees for orchard planting, each of them grow immense quantities of hardy shade trees and ornamental shrubs, while the Shenandoah Nurseries has a large planting of evergreens. These evergreens are used mostly for planting as windbreaks and to a smaller extent for park purposes. Some of them are grown from seed, while of other kinds, the little seedlings are imported from European countries, and grown in the nursery rows at Shenandoah until they are large enough for planting in their final position.

Immense quantities of nursery stock is imported by each of these firms from Europe. They likewise grow enormous quantities of apple seedlings. Large quantities of these seedlings are used up in propagating their own millions of trees, while another large quantity of them go to other nurserymen who graft them into apples and still another enormous lot is made into grafts and disposed of as such. In fact commercial grafting is one of the important departments of each of these firms, and grafts ready for planting can be furnished of almost any of the usual commercial varieties of apples. This is a great advantage to many nurserymen and even the planter who grows his own nursery stock. It enables him to grow his trees in the manner that will produce the kind of tree he wants, and then it

Does More Work Than 40 Men

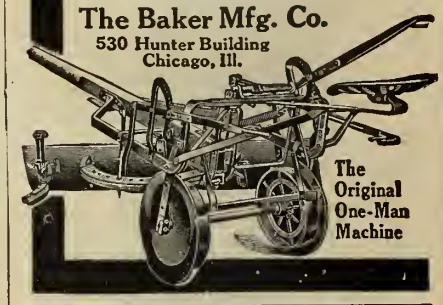
Read the letters in our free book to prove it. No machine ever invented that equals this 20th Century Grader on all work of grading and leveling roads, building ditches, levees, borders, irrigation laterals, leveling land, cutting sage brush and weeds, scalping alfalfa, cleaning streets and sidewalks and its many other uses.

Makes and saves big money. Originalone-man machine. Thousands in use—all giving splendid service and satisfaction.

20th Century Grader

Is built of steel—lasts a lifetime. Many important features and advantages that make it the most wonderful grader ever built. Weighs only 600 pounds. Write postal now for most interesting book you ever saw.

The Baker Mfg. Co.
530 Hunter Building
Chicago, Ill.



IMPLEMENTS AND PROFITS

Do you realize to what extent the implements on the farm control the profits? When you consider that each one is capable of either increasing or decreasing the returns from the crops upon which it works, it is apparent that too thorough a study of its uses and construction is almost impossible.

While it is a matter of right—of justice—that farmers should buy their implements as cheaply as is consistent with quality, they can always afford to buy the best.

There are five points to consider in every machine: (1) Its purchase price must be fair. (2) It must do the work for which it is bought. (3) It must be economical to operate. (4) Its repairs must be reasonable. (5) It must serve a long life.

Upon these five points every implement should be judged and selected. The second, third, fourth and fifth factors may all be included in the one term, *efficiency*. Upon the efficiency of the tools depends the yield and cost of production.

Mr. Farmer, we have made farm machines for sixty years upon the standard of those five points by which you should select your implements. It is your standard, and our standard; just "Johnston Quality." If we are not supplying all of your tools, we should. It means satisfaction—profit.

Our free catalog will show you why. It is full of information on farm mechanics, and will be sent you on request. Write a post card for it today.

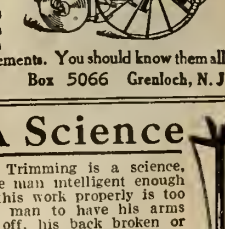
Johnston Harvester Co., Box 120R Batavia, N. Y.

MORE POTATOES PER ACRE

Do you want to increase your potato crop 10 to 57 bushels per acre and thereby increase your profits $5 to $57 per acre?

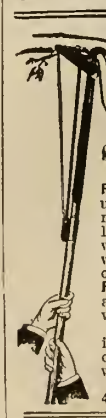
The Iron Age Planter is the one machine with which an absolutely perfect stand can be obtained. At the Maine Experiment Station the yield where the Iron Age was used was 57 bushels per acre more than where its competitor planted. **It makes no misses, no doubles, injures no seed.**

In Idaho, Herbert Lambing, an Iowa Agricultural College Graduate, has gained attention by his big crops, due to scientific methods. He writes in part: "The *Iron Age* means just one half my crop this year." Let it secure for you a perfect stand, a bigger yield and more profit. Ask your dealer to show you the Iron Age Planter, with or without fertilizer attachment. Write us for special booklet and Mr. Lambing's complete letter. Both will interest you. Remember, this planter is but one tool in our complete line of Iron Age farm and garden implements. You should know them all.



BATEMAN M'F'G CO., Box 5066 Grenloch, N. J.

A Science



Tree Trimming is a science, and the man intelligent enough to do this work properly is too good a man to have his arms pulled off, his back broken or his head smashed by a fall when all this can be avoided.

How? Just by using the KANSAS PRUNING KNIFE improved, the most up-to-date knife made. It is automatic, no levers to work by hand, any length of handle can be used, so all the work can be done from the ground, where the operator can see what to take out and what to leave. The KANSAS PRUNING KNIFE does heavy work and does it fast. It is made of the very finest material and made to last.

May we send you our circulars, telling more about this knife, also about our HAPPY THOUGHT KNIFE and what owners say about them?

INTERNATIONAL TOOL CO.,
49 Porter St. Detroit, Mich.

Please Mention The Fruit-Grower whenever you correspond with our advertis

ls somewhat cheaper in point of actual cash outlay.

While these nursery firms were getting established there was a youngster on a farm near Shenandoah who peddled vegetables among his father's friends in town. His vegetables were always better than those of anyone else, and as he grew in years and experience demands were made on him for vegetable seeds—vegetable seeds of the kinds like he grew. When he became fifteen years old he got a job in a seed store at Shenandoah and later spent a time in a big seed house at Des Moines, returning later to his market gardening business in Shenandoah. This boy was Henry Field. He continued his gardening operations and by the time he was twenty-one, had developed a big business in strawberry plants and seed potatoes. He also raised seed from some of the choicest strains of his vegetables and

OVERLOOKING A BLOCK OF ASH AND OTHER ORNAMENTAL TREES IN THE MT. ARBOR NURSERIES.

sold them to his neighbors. From year to year the demands for his seeds became greater, so that about ten years ago he built a little seed house, costing about $500. At that time this little frame building looked to young Field like an enormous institution. But only a couple of years passed until quite an extensive addition had to be made in order to accommodate the increasing quantities of seeds that were required to handle the rapidly growing trade.

It became necessary about this time to issue a catalogue of some proportions although the first copy of the seed catalogue of Henry Friend appeared before he built his first seed house. It was a little four-page affair which he had himself printed on an old-fashioned hand press. But like the modern machinery for handling seeds. Mr. Field has a new machine for putting small seeds in packets. It is almost human in its action, picking up a little seed packet, opening it and pouring in a teaspoonful of seed, and then gluing and sealing the end. It will handle 35,000 such packets in a single day. Then there is some elaborate machinery for the field seeds, and particularly corn. Mr. Field has developed an enormous business in seed corn, having been the first seedsman to market seed corn on the ear and one of the first to grade the shelled corn so that it would drop evenly through an edge drop planter.

In addition to seeds of vegetables and grains, Mr. Field has made a specialty of some of the hardy flowering perennials, such as phlox and peonies. He is a great admirer of the peony, and of recent years has made quite a specialty of growing this great ornamental for home and park planting. There are over 300 choice varieties of this beautiful flower in his trial grounds, it being one of the largest collections of named varieties in the country. He also has an enormous collection of named varieties of gladioli and dahlias. So that with his supply of these beautiful flowers as a supplement to his enormous seed business, it gives the little city of Shenandoah a unique position in the horticultural world, as almost every sort of seed, plant, shrub or trees can be obtained from some one of the three mammoth institutions there located.

Each of these firms employ over a hundred men, women, girls and boys during their busy season, and constitute a very large factor in the econo-

OVERLOOKING ONE OF THE ENORMOUS BLOCKS OF YEARLING APPLE TREES IN THE SHENANDOAH NURSERIES, JUST BEFORE DIGGING.

vegetables which he grew in his garden, the catalogue and the seed business flourished, and today the firm of Henry Field Seed Company is one of the largest retail mail order seed houses in the Middle West, and it is still growing.

This thriving institution is now housed in a splendid fireproof building, located on the railroad track and very close to the great storage and packing houses of the Shenandoah and Mt. Arbor nurseries, making quite an impressive group of buildings of horticultural importance in the heart of the corn belt.

In addition to this seed house being fireproof, it is equipped with the most modern machinery for handling seeds. Mr. Field has a new machine for putting small seeds in packets. It is almost human in its action, picking up a little seed packet, opening it and pouring in a teaspoonful of seed, and then gluing and sealing the end. It will handle 35,000 such packets in a single day. Then there is some elaborate machinery for the field seeds, and particularly corn. Mr. Field has developed an enormous business in seed corn, having been the first seedsman to market seed corn on the ear and one of the first to grade the shelled corn so that it would drop evenly through an edge drop planter.

In addition to seeds of vegetables and grains, Mr. Field has made a specialty of some of the hardy flowering perennials, such as phlox and peonies. He is a great admirer of the peony, and of recent years has made quite a specialty of growing this great ornamental for home and park planting. There are over 300 choice varieties of this beautiful flower in his trial grounds, it being one of the largest collections of named varieties in the country. He also has an enormous collection of named varieties of gladioli and dahlias. So that with his supply of these beautiful flowers as a supplement to his enormous seed business, it gives the little city of Shenandoah a unique position in the horticultural world, as almost every sort of seed, plant, shrub or trees can be obtained from some one of the three mammoth institutions there located.

Each of these firms employ over a hundred men, women, girls and boys during their busy season, and constitute a very large factor in the economic welfare of the population of the thrifty little city. But while Shenandoah is the home of these three prominent organizations the town is really most unique in that it has well demonstrated the fallacy of the old idea that a town could not maintain its streets in good condition without the revenue derived from saloon taxes and licenses. For over two score years there has been no saloon in Shenandoah, and from the attitude of the residents, a saloon will never open its doors within the limits of the city. Its streets are well paved. The homes are clean and of pleasing appearance. The people are progressive, optimistic and take full advantage of modern ways. This is strikingly brought out by the number of automobiles in use by the farmers of the vicinity as well as by the city dwellers. In fact there are far more farmers in the county who own and operate an automobile than there is in the city itself.

DETROIT SPRAYING OUTFITS!

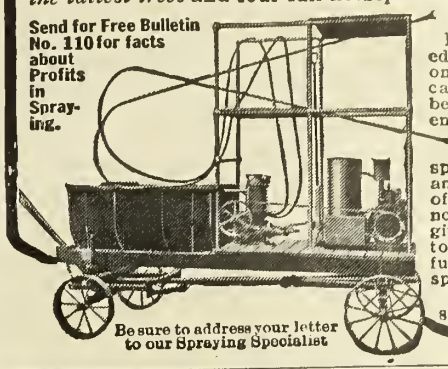
Are the best that money can buy. Sold at lower prices than are asked for inferior outfits.

Power and thoroughness are absolutely essential to success in spraying, and these two features are embodied in the **Detroit Spraying Outfit** to a much greater extent than in any other. Designed by a practical and successful orchardist. Operated by a 4-horsepower **Amazing Detroit Kerosene Engine.** Exceptionally high platform enables you to *get right to the top of the tallest trees* and four full horsepower enables you to

Drive the Mixture Right Into the Bark

Embodies every convenience. Pump started and stopped from upper platform. Built on a platform of standard width so that it can be placed on any farm wagon. Also can be used as a portable pumping outfit or fire engine. Engine can be quickly removed and used to furnish power for any other purpose. November to May is the time to spray, and after doing your own trees you and the boys can go out and clean up the cost of your outfit in a week by spraying for your neighbors. Write at once for Bulletin No. 110, giving startling facts in regard to the profits to be derived from spraying, together with full and complete instructions, formula, spraying calendar, etc.

Send for Free Bulletin No. 110 for facts about Profits in Spraying.



Be sure to address your letter to our Spraying Specialist

DETROIT ENGINE WORKS
Spraying Dept., Bulletin No. 110, Detroit, Mich., U. S. A.

FARM with a TYPEWRITER

IT PAYS TO BE UP-TO-DATE

Pen-written letters are decidedly out of date for a live, wide-awake farmer.

WITH A TYPEWRITER YOU CAN

Sell your apples, potatoes, butter, eggs or stock—Typewritten Letters Bring Better Prices.

Order your 1912 grain, seed, machinery, repairs—Typewritten Letters Command Attention!

Trade. Work up a direct trade with town or city people by typewritten letters giving lowest prices.

Typewrite all your results. Know exactly what pays, what you spent, what you receive. Typewrite all accounts for easy reference!

Correspond. Typewritten letters look business-like and trustworthy No better introduction than a good typewritten letter.

Copy Letters. A Typewriter will make a copy of your letter same time it writes. Copies protect you, remind you!

Educate the children. A Typewriter helps your boy or girl to spell, punctuate, write good English; fits them for good positions in city or town.

Improve the long winter evenings. Get busy with a typewriter. Let the boy or girl help you in your correspondence, etc.

Typewriting Easy to Learn

You can learn to work the typewriter in an evening and end by writing a letter. Speed comes with use.

NOW'S YOUR OPPORTUNITY!

In all the 25 years we have been selling Standard typewriters we do not know of such a Big Bargain as this Standard $100 Machine for $26.

The Smith Premier Typewriter Co. recently put on the market a new model and took these No. 2 machines as part payment.

By an extraordinary deal we secured all they had. They have been thoroughly rebuilt, refinished, renickelled in our own factory. Now they Look Like New, Work Like New and will give perfect satisfaction.

Our Guarantee is equal to the manufacturer's original guarantee.

THIS No. 2

SMITH PREMIER TYPEWRITER $26

Free Trial—Sign the coupon below and mail at once—no obligation, no expense to you.—

We are Responsible.

Look us up! In Dun or Bradstreet, or ask your own bank.

American Writing Machine Co.
345-347 Broadway, New York.

Please send me full particulars concerning Free Trial Offer of Smith Premier Typewriter for $26 00, without any obligation or expense on my part, as advertised in

Name.....

Address.....

Spray Now for Perfect Fruit in the Fall

NOW is the time to rid your trees of fungous enemies and give them a good start toward bringing you a profitable yield. Spray this spring with

ELECTRO Lime-Sulphur Solution
(CONCENTRATED)

Obtain at least 98% Perfect Fruit this year

This is the best insecticide for San Jose Scale and all scale and sucking insects, and is also the best summer fungicide known. It is a clear, cherry-colored liquid, free from sediment, and we guarantee it to contain the highest percentage of soluble sulphur — the killing agent. It meets the requirements of all State and Federal laws.

Send at once for our FREE booklet **"Spraying Simplified"**

and learn just when and how to protect your trees against all insects and fungous enemies. Its 68 pages are full of valuable information for the farmer and small fruit grower *A postal will do*

The Vreeland Chemical Co.
44 Church Street
New York

LIGHT UP!

You can transform any kerosene (coal oil) lamp or lantern into dazzling brilliancy with our wonderful **Bright Light Burner.** 50 candle power invisible and **unbreakable Steel Mantle.** Brighter than electricity, better than gas or gasoline, and **perfectly safe.** No generating—simply light like any kerosene lamp. Nothing to get out of order. Positively will not smoke or flicker.

AGENTS WANTED EVERYWHERE. Sells like wildfire. An opportunity of a life time, work all or spare time. Experience unnecessary. Make big money—be independent. Write today. Act quick—territory going fast. Complete sample, postpaid, **30c, 4 for $1.00. Money back if not satisfactory.**

BRIGHT LIGHT CO., Dept. 46 Grand Rapids, Mich.

LIME-SULPHUR HYDROMETER Used By All Progressive Fruit-Growers
Price By Mail With Test Jar and Instructions..... $1
Agents Wanted Everywhere
CARBONDALE INSTRUMENT CO., Carbondale, Pa.

BLACK PEARL RASPBERRY

Now in better condition than any other variety. Try it. Send for free descriptive circular and for catalogue of Small Fruit Plants, Trees, Ornamentals, Asparagus, Rhubarb, etc.

Holsinger Bros., Rosedale, Kansas

In writing advertisers please mention The Fruit-Grower.

Root Grafts Fruit Tree Seed and Seedlings. Planters grow your own trees and save money
HARBOR SPRINGS NURSERY, Harbor Springs, Mich.

NOW IT'S TREE DOCTORS

Healing Wounds, Fixing Broken Limbs and Filling Cavities in Trees is Their Mission

Do you know what a tree doctor is? No? Well, he is one of the latest claimants for attention in horticultural work. He is just like any other doctor, in that his business is that of treating the sick, but his patients are trees, rather than man or animals. As a profession tree doctoring is yet in its initial stages, but it is a thrifty youngster, and tree doctors there will be in plenty ere another decade passes.

The business of a tree doctor is essentially that of repairing wounded trees, so that they may continue their usefulness for years. There is no good reason why beautiful shade trees, or prime fruit trees should decline and be broken to pieces by storms. A little skillful attention can put the tree into shape that rivals its youthful vigor. In the parks and lawns of the Eastern cities the work of the tree doctor is coming to be more and more in evidence, but it is spreading westward, and tree doctors are finding a world of work in the city parks and

The picture on the left is a tree before anything had been done to it. The center picture shows the same tree as it is being opened up. Mr. Loiry is making the V-shaped groove that holds in the cement and sheds water. The ends of the bolts have been covered with zinc and painted: the hard wood wedge is in place and the cavity ready for filling with cement. The tree on the right shows the appearance of just such a filling after it has been finished.

in the orchards of the great fruit districts of the Middle West.

John Davey is the father of tree doctoring, and has fostered and encouraged the business for a lifetime. For years he worked alone, but the demands upon his skill necessitated his training others in the work, and now there are Davey Tree Experts by the dozen. As a class, they are quiet, agile, well-trained young men, who love the beauties of nature and who have a deeper understanding of the ailments of patriarchal trees than even the skilled orchardist or forester.

Early in the summer of 1911, some of these young men representing John Davey were in the city of St. Joseph, Mo., rejuvenating some stately shade trees, and the work came to the attention of John Donovan. Now, John Donovan had a family orchard of ancient lineage, that was his pride and joy, but several of the trees were on the downward road, because Mr. Donovan made no pretenses at being a thorough orchardist, and the storms, insects and fungi were beginning to leave their footprints in this family orchard. At the suggestion of one of his neighbors, Mrs. S. N. Cox, who is an experienced orchardist, Mr. Donovan asked Mr. R. O. Kellar of the "Davey gang" to inspect his orchard trees and report their condition, and whether there was any hopes of saving these trees by the Davey way.

Mr. Kellar's report was accepted, and he and his associates, T. M. and J. C. Loiry and W. J. Auwood of the Davey Tree Expert Co. were instructed to make the necessary repairs to some of the most seriously wounded of these trees in Mr. Donovan's orchard.

Clean Out the Cavities.

Fruit-Grower readers are familiar with the usual processes of rejuvenating old orchards by pruning, spraying and cultivating, but the Davey process is something different. This work consists essentially in cleaning out the rotten cavities and filling them with cement. Now this sounds like a simple thing. It is simple, but like many other extremely simple operations, it takes a high degree of skill to do it with utmost success. Many of us have tried filling holes in trees with cement. I remember very well the first attempt I made at such work. It was done when I was a youngster. I filled a decaying cavity in an old Transcendant crab apple tree with cement, but the effort would have done the tree more good if it had been applied to a nearby fence post. But I did not do my work in the Davey way. I neglected, or rather overlooked the first essential. I failed to clean out the decaying wood within the cavity, and then sterilize the interior so as to kill all of the germs and fungi. That is the foundation of success, and in these trees in Mr. Donovan's orchard, I had opportunity of observing the care with which experts in this work cleaned out and sterilized the rotten places.

Most of these trees had split at the fork where the head of the tree branched out from the trunk. On but few of the trees was there any evidence of internal decay, to the inexperienced eye, but when the "Davey gang" opened up these wounds it was found that the heart of most of these split forks was a mass of decaying wood, burrowed through and through by ants and other insects.

Opening these wounds was done with chisels. The sides of the crack were cut out, and the split followed down as far as necessary, sometimes to the surface of the ground. The opening was made wide enough to allow the entire heart of the tree to be chipped out with the chisels, and sometimes the decay had to be dug out of the main roots, and even up into the branches. When this was done, three or four heavy bolts were put through the trunk in a criss-cross manner, and drawn up tight, but not so tight as to draw the split together. Then hardwood wedges were driven into the split just between the bolts. These wedges were driven in just as tightly as possible, for the purpose of increasing the tension on the bolts and avoiding any possibility of a strain that would subsequently break the wood away from the cement filling.

One Way to Fill Holes.

When the wedges were driven in, and their ends sawed off flush with

Don't Overlook the Importance of the Insecticide You Use

If your **Selection is Right**, your **Spraying** will get **Results**—It will pay.

But if you neglect to choose **a brand known to be effective**, you are **wasting your time and money.**

START RIGHT. Select the brand you can depend upon—one that quickly kills chewing insects, such as the curculio, the moths, the borers, root-worms, canker worms, etc.

SPRAYS THAT PAYS

KEY BRAND Arsenate of Lead

will **dispel all doubt** about the profit in spraying. It is **so convenient, so effective,** that once you use it, you will always continue.

It is always uniform, mixes easily, remains in suspension in solution readily; acts quickly; sticks like paint to the plants; does not injure foliage or fruit.

It makes spraying **most effective,** and at the same time **most economical.**

It is **positively superior** to any ARSENATE OF LEAD on the market. You can **depend absolutely** upon this statement. And **our price is lower than any other.**

You can buy it in **paste form** in any amount from a one pound can to a 600 pound barrel; in **powder form,** from a one pound can to a 100 pound keg.

Always shipped in **Hard Wood or Steel Containers** to prevent possible loss.

Never accept a substitute. Demand **KEY BRAND of ARSENATE OF LEAD. It will pay you to do so.**

We want a good live agent in every fruit and vegetable-growing district. Also wholesale distributors.

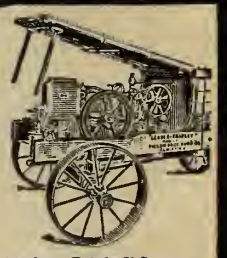
Write today for prices, terms, etc., in open territory.

INTERSTATE CHEMICAL CO.
17 Bayview Ave. Jersey City, N. J.

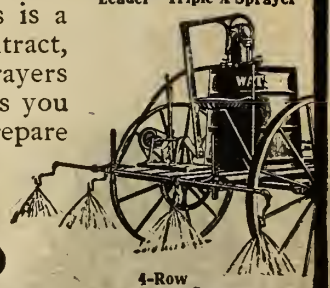
SPRAY

Ask Us to Send You Spraying Calendar and Directions — FREE.

No matter whether yours is a large or a small spraying contract, our book on Spraying and Sprayers will be a great help to you. It tells you what spray mixtures to use, how to prepare mixtures, when to spray and how to spray to secure best results.



Leader—Triple X Sprayer



4-Row Potato Sprayer

A Sprayer to Suit Your Needs

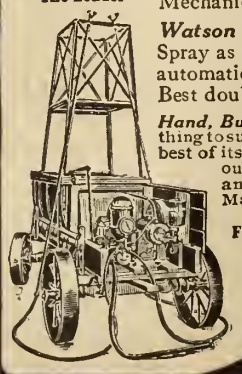
Our line includes everything from the small hand sprayer up to our famous power orchard spraying rigs.

Our Leader Orchard Sprayers are typical modern machines for large spraying operations. Combination mounted outfits consisting of gasoline engine, spray tank, pump, platforms, spraying appliances, all complete and ready for work. Power ample to keep ten nozzles going, each with 200 lbs. pressure. Improved liquid agitators and strainer cleaners. High class gasoline engine can be used separately to furnish power for all kinds of farm work.

Empire King

The Empire King, the old reliable barrel spraying outfit. A great sprayer for general purpose work, sole reliance of thousands for spraying fruit, vegetables, shrubbery and small trees. Mechanical agitation of liquid, automatic strainer cleaners.

The Leader



Watson 4-Row Potato Sprayer, for wide or narrow rows. Spray as fast as you can drive. Power always strong, automatic agitation of liquid and cleaning of strainers. Best double cylinder pumps, brass working parts.

Hand, Bucket and Knapsack Sprayers. Something to suit every requirement, every one the best of its kind. Be sure to write and get our Sprayer's Book before buying anything in the Sprayer line. Mailed free. Address

FIELD FORCE PUMP CO
58 11th Street
Elmira, N. Y.

FIELD FORCE PUMP CO. The Leader "OSPRAYMO" LINE OF SPRAYERS ELMIRA, N.Y.

the outside, the entire surface of the cavity was coated with a strong antiseptic, either corrosive sublimate solution or Carbolineum. This latter antiseptic was considered the better of the two, as it is more penetrating, and is less soluble in water than the corrosive sublimate. Then after the cavity had dried a little from its antiseptic bath, it was filled with cement.

Now to fill a cavity with cement is an easy job, but the way the average man fills a hole in a tree with cement always reminds me of the filling I put in that old Transcendant tree. There is a trick about filling a hollow tree in such a way that the cement will not crack to pieces, and perhaps be pushed out from the wood so that water and fungi can find entrance. But the filling does not break when it is put in the Davey way. Mr. Davey learned years ago, that there was only one way to do the work and keep the cement from falling out, and also to keep water from gaining entrance to the filled cavity. This is done by a little V-shaped groove made just inside the margin of the wood and ex-

This is one of the largest cavities. Mr. Loiry has his arm through a hole in the back of the tree to show an opening, and above his hand, in two of the branches, can be seen other openings. This was all decayed wood that was dug out and then filled with reinforced concrete.

tending entirely around it. This is so important a feature that it is really the key to the situation, and for the purpose of protecting his discovery, Mr. Davey obtained a patent on the process.

But to return to the way these Davey experts filled the cavities with cement. Small holes were filled solid with cement, and the filling allowed to come just flush with the surface of the wood, and not allowed to extend out on the bark the least bit. To do this, and to be sure the healing callus could not get under the cement, a little strip of bark, possibly half an inch wide, was cut away from the margin of the cavity. This made it easy to bring the cement even with the surface of the wood, and the new bark could heal over the entire filling as easily as if it had been the real wood of the tree.

Reinforcing.

When the filling of cement was of large size, extending well up and down the tree, with a large surface exposed, it became necessary to make allowance for the swaying of the tree during heavy winds. If the core of cement extended for a distance of a couple or more feet in length, it would be in danger of cracking, as the tree swayed back and forth in a heavy gale. To prevent this, the cement core was put in in layers. Sections were made, varying from a few inches high in trunks of small diameter to a foot or more in larger trunks. These sections were reinforced with wires crisscrossed within the cavity, and then separated from each other by a pad of tarred paper. This made joints that could "give" as the tree swayed, and the cement filling be in no danger of breaking.

It was necessary always to reinforce the cement filling in all of the larger cavities, to give additional strength to the cement. This reinforcement was made with galvanized wire, fastened from side to side in the cavity with nails.

But as a further safeguard to the reinforcement, and to further guard against the possibility of water getting in between the wood and cement, a good coat of paint was applied to the outside of the wound as soon as the cement was dry enough to let the paint stick. All of the wounds that were treated were painted at the finish, but some of them were covered with sheet zinc or lead. Zinc was used mostly over the cement fillings, as it could be easily cut the shape of the filling, and was then tacked down tightly along its margin, with big-headed brads set about a quarter of an inch apart all around. But in doing this due allowance was made for freedom to sway in the wind. The zinc was put on in much the same manner of shingles on a house. Short strips were used, and lapped over each other for an inch or so. Where these laps were made, only the under strip was tacked.

Covering the Wounds.

The bolts that were put through the trees were counter sunk on both sides, and then covered with sheet lead, or in some cases with zinc. The lead was considered better, as sometimes the shell of the tree would be so thin the bolt could not be counter sunk deep enough to let the bolt be below the inner bark line. Here the sheet lead was used, because it could be pounded into shape over the nut, and be made to fit down snug and tight. Then it was tacked tight all around the edge, just as was the zinc.

Another use to which this sheet zinc was put, and one which could find wide application in all of the orchards of the country, is that of covering up large wounds where big limbs have been cut off. These Davey experts put a little cover of zinc over every wound that is two inches or more in diameter. These zinc covers are tacked down carefully all around the edge and then thoroughly painted. When this zinc cover is of such size that it covers practically the entire surface of the wound, but still leaves a little ring just inside the inner surface of the bark, it makes a waterproof cover that effectually protects the wood from any possibility of decay. But if the zinc cover laps over the bark, or is not

Productiveness depends on the Vitality of the Tree

Scale or other sucking insects greatly decrease the vitality of the tree. It is impossible to produce first quality fruit from infested trees, and unless the ravages of these pests are stopped the tree is soon killed. The only remedy is to spray. By using S-W Lime-Sulfur Solution you are assured of getting safe, certain and paying results. You save your trees, get more fruit and better fruit at a very small cost.

Spray your Trees with S-W Lime-Sulfur Solution

It will keep them healthy and keep in control the San Jose Scale and other sucking insects. S-W Lime-Sulfur contains the maximum amount of sulphur possible to combine in an absolutely safe spray and is therefore exceptionally effective. It does not crystallize and clog the spray-pump. S-W Lime-Sulfur Solution is effective, economical and for sale in your locality in any quantity you desire

A Copy of This Spray Book Tells How to Spray

You're not getting the most out of spraying if you're following the "hit-or-miss" style. Systematic methods will double your returns, and you'll find them described in detail in "Spraying, a Profitable Investment." It's a book of 120 pages, containing over 50 illustrations, telling in plain English how, why and when to spray. It was compiled from data, gathered by experts, and is thoroughly reliable in every detail.

Look up our Agent in your locality or write us for his name—and don't forget to send for a free copy of "Spraying, a Profitable Investment."

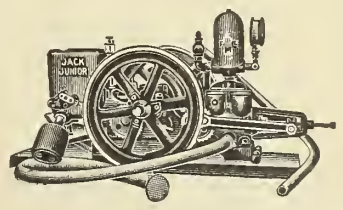
THE SHERWIN-WILLIAMS CO.

MAKERS OF INSECTICIDES AND FUNGICIDES

667 CANAL ROAD, N. W. 1218 CLEVELAND, OHIO

Fairbanks-Morse Spraying Outfit

KILLS INSECTS, SAVES FRUIT



You must spray to secure perfect fruit. Use a Fairbanks-Morse high-pressure sprayer and do the work quickly and thoroughly.

The above 1 H. P. Gasoline Engine outfit will supply three ¼-in. Vermorel spray nozzles at 200 lbs. pressure, which is the pressure required for effective spraying for scale diseases. The Deluge pump gives steady pressure. Entire outfit compact, strong and easily moved about the orchard. Will give splendid service for years.

Our Catalog No. SF953 describes this and larger outfits and tells just when spraying should be done. Write for a copy today.

Fairbanks, Morse & Co.

Kansas City Denver Omaha
St. Louis Chicago

tacked down tight, and then reinforced with paint, it is worse than no cover, as it will let water enter as the zinc is lifted by the healing callus, and conserves it for the fungi of decay.

Chain the Limbs Together.

The question will arise in the minds of many as to how effectual the bolts mentioned above will serve in keeping trees from splitting or breaking, especially when the limbs are long and heavy above the point at which the bolts are placed. It is very true that there is every possibility for the limbs to break off above the bolts, and even if they do not break, they can sway sufficiently in the summer storms to wrench them away from the cement filling, and let the spore of decay find entrance again. But John Davey thought this all out as he was perfecting his process of treating such cases. Trees which he has fixed will not break apart, for high up in the branches a strong chain is fastened from limb to limb in such a way as to make a substantial brace and guard against any possibility of splitting. But These chains are not wrapped around the limbs. They are fastened to big lag screws. The screws are put into the limbs; the limbs are drawn together just a little so as to give them tension, then the chain is hooked over the lag screws, and the job is finished. There is only the faintest chance of such a tree ever breaking down, and one which has been worked over, as these Davy experts worked over these apple trees of Mr. Donovan are as good as new, and really far better than they

This crack in this tree was hardly noticeable when these young men started to work, but after an opening was made, the entire heart of the tree was found to be in an advanced stage of decay. On the front side a strip of zinc is being tacked, starting at the bottom. The counter-sunk ends of three bolts can be seen, with the hard wood wedge in the crack just above the end of the zinc strip.

would be if given the ordinary treatment in the way of repair or rejuvenation.

Now, the questions come, is the work expensive, and will it pay in the orchard? Yes, the work is expensive. Expert workmen require good salaries and careful work takes time to do, so that repair work such as this costs a pretty stiff figure. But is it worth while? I shall answer that by asking another question: Is an orchard of bearing age, and in good health and vigor worth any more than an orchard that is just planted? Is it worth while to save ten years of time? That is just what has been done in this orchard. The trees which have been worked over are restored to their former vigor, in fact it is safe to say they are stronger today than they have ever been. They are loaded with fruit buds, and every one of them is capable of producing a couple of barrels or more of apples next year. It has taken them almost twenty years to reach this size, and by the repair work twenty years have been saved. Is it worth while? You can answer.

Woman Gets Prize.

"Other people could have as good luck as I, for the soil is here, the conditions are right, and the Yakima Valley country is the greatest in the world to raise not only fruit of all kinds, but other farm products are obtainable in abundance and are raised with very little effort."

This statement was made by Mrs. Ella D. Rowland of the Zillah section of the Yakima Valley, who, on November 4, at the New York land show, was awarded the first prize—$500 in gold—for the best twenty-five box apple display any variety grown anywhere. Mrs. Rowland's apples—Winesaps—scored 982 5-6 points out of a possible 1000. While her exhibit competed with not only the finest samples from all other districts of the Yakima fruit valley, there were samples of the best produced in many other sections of the country. Thus the Rowland Winesaps proved to be the equal of any grown anywhere; a fact which the Yakima Valley had always claimed—and as a clincher of the fact it may be stated that at the New York land show, Robt. Johnson of Fruitvale, another important part of the great Yakima Valley, scored second, with 978.7 points, making the contest between the Yakima Valley fruit raisers the feature of that great show.

"My husband and I came here eighteen years ago from Kansas," says Mrs. Rowland. "We raised hops while our young orchards were growing and as soon as they were along far enough we abandoned the hops.

"We paid $40 an acre for the ranch on which my three orchards are located. The one bearing the prize winning apples is on just a little higher ground, and is considered by fruit raisers in this section to be an ideal orchard. Its elevation is about 800 feet.

"Really, I feel that I am sort of a novice at the business of fruit raising, as I have given the ranch my direct attention only since the death of my husband, E. M. Rowland, last June.

"Yes, I am happy over my luck," smiled Mrs. Rowland. "It was more than I anticipated, for we had to make the pack in such a hurry that I had no idea that I would win any prize at all.

"As the apples were being gathered we put aside enough to make 56 boxes—from this number we selected the 25-box exhibit which won the prize.

"The packing, of course, was a strong point in my favor, as the packing counted. It was difficult to secure experienced packers at the time when I decided to send an exhibit. I secured the assistance of Miss Lena Milton, a young lady who had some experience, and Mrs. J. D. Laughlin, whose husband has a 55-acre ranch adjoining mine and who is administrator of my late husband's estate. It is needless to say that their work was well done."

The elaborate silver cup, an additional prize was donated by A. H. Hanauer of Spokane. The $500 prize was from the Howard Elliott, President of the Northern Pacific R. R. Company, this line passing through the prize apple territory.

Just Now

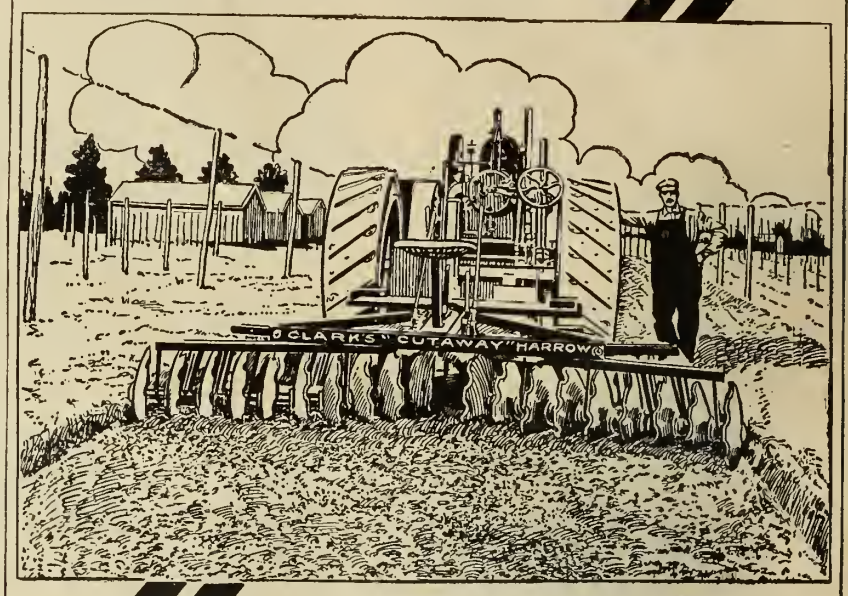
—while you have the time, and while the nurseries have a full stock to select from, order your fruit trees for Spring shipment. By so doing your orders are placed among the first shipments and you get your stock in good season. Call's Nurseries, Perry, Ohio, have a large stock of extra fine trees on hand. They make a specialty of dealing direct with their customers, and they enjoy the well earned reputation of sending their customers as fine stock as can be grown. Write them for price list.—Adv.

The day was when most any farmer could buy a few grafts and be a cross roads nurseryman, but such men are getting scarcer. Greater skill is required now, some science along with it as well as experience. Therefore, the man who lets well enough alone and thinks that last year's bird's nest or a generation ago is all right today doesn't know just how much he has to learn, just what he is missing.

SAVE $25.00 A DAY

For over 25 years we have made high grade farm tools for intensive work. Each year we have improved and increased our line until it now consists of over 100 sizes and styles. We make a special tool for every crop and suitable for any climate and soil condition. Our latest addition is Clark's Engine "Cutaway" Harrow.

The genuine "Cutaway" disk slices, stirs, lifts, twists and aerates the the soil. Working the land this way lets in the air, sunshine and new life; it sweetens the soil, and makes the elements soluble. Thorough cultivation makes large crops.



The outfit in this view is a 20 horse-power gasolene engine and a Double Action "Cutaway" Engine Harrow. It takes the place of six 8-foot harrows, 6 men and 24 horses—a saving of $25.00 to $30.00 a day, and no teams to winter. With change of crews the outfit can be run night and day. The barrow can be adjusted to work as deeply as desired, taking the place of plows; it aerates the soil and pulverizes it thoroughly.

Send to-day for further information, and ask for our new catalogue, "Intensive Cultivation." We make a special tool for every crop.

CUTAWAY HARROW CO., 968 Main St., Higganum, Conn.

HERE'S a simple, strong, low-priced light-draft riding harrow which covers more surface with less draft than any other cultivator made. It works right up to the trees and under lowest branches without harming fruit or leaves in the least.

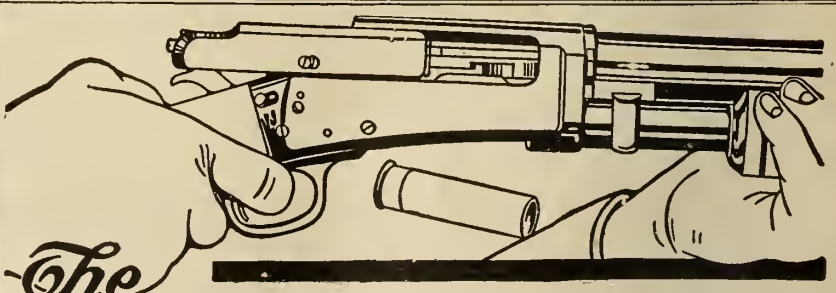
Forkner Light Draft Harrows for Orchards and Vineyards

make it possible to thoroughly cultivate 20 to 30 acres per day with two horses. They lift and turn the soil and leave it in slight waves, thus exposing more surface to the chemical action of the sun and rain. They make a perfect dust-mulch, which conserves maximum amount of moisture.

Write for Free Trial Offer—and Booklet.

We will ship to responsible parties on 30 days' riskless free trial. Free booklet, "Modern Orchard Tillage," tells the whole story.

LIGHT DRAFT HARROW CO.
907 E. Nevada St., Marshalltown, Ia.



The **Marlin** Repeating Shotgun

12 or 16 GAUGE

Made famous by its dependability. The solid top and side ejection keep gases and powder away from your eyes; help quick, effective repeat shots. Rain, sleet, snow and foreign matter can't get into the action. The mechanism is strong, simple, wear-resisting. The double extractors pull any shell instantly; two special safety devices prevent accidental discharge while action is unlocked, and an automatic recoil block makes hang fires harmless. All Marlins are strongly made, finely balanced, accurate, hard hitting guns, and are the quickest and easiest to take down and clean. Illustration shows Model 24 grade "A" 12 gauge; it has all the features that make for a perfect gun.

Send three stamps postage today for our 136 page catalog describing the full *Marlin* line.

The Marlin Firearms Co.
139 Willow Street New Haven, Conn.

Over half a century of fair dealing has given our products that prominence which merit deserves. Everything of the best for

Orchard, Vineyard, Lawn, Park, Street, Garden and Greenhouse

Seeds, Bulbs, Plants, Roses, Shrubs, Small Trees, Etc.

by mail postpaid—safe arrival and satisfaction guaranteed. For these send for Catalog No. 2, 168 pages. Hundreds of carloads of **Fruit and Ornamental Trees, Evergreens, Shrubs, Hardy Roses, etc.** Catalog No. 1 for these, 112 pages. Both **FREE.** Immense stock of **SUPERB CANNAS,** the queen of bedding plants. Acres of **Pæonias** and other **Hardy Perennials. Direct deal will insure you the best and save you money.** 58 years. 47 greenhouses. 1,200 acres.

THE STORRS & HARRISON CO., Box 310, Painesville, O.

BERRY BOXES FRUIT BOXES BASKETS AND CRATES

The package advertises and sells the fruit. Let us send you catalog showing the superiority of packages we are manufacturing. 25 years at it, we know the requirements, and we want you to know our prices. We make mixed shipments. Join your neighbors in carload lot shipments, and save freight. Prompt shipments at all times. Address nearest office.

The Pierce-Williams Co., 542 William St., South Haven, Mich., or Jonesboro, Ark.

SUCCESSFUL OHIO ASS'N

In the vicinity of Marietta, Ohio, there is a fruit and truck growing section that has long served as a model. Its people are progressive and quick to take hold of methods which are for the betterment of their business. The methods of marketing their fruit and truck individually had been practiced for almost a century, but the advancement of the times compelled the adoption of newer and better methods. In February, 1907, the growers of Marietta met and formed the Marietta Truck Growers' Association. The object of this organization was to give them the power to act as a body and to enable them to improve and standardize their methods of packing. A committee was appointed to go to the various markets where their produce was used and to study the local conditions and demands of the markets. The reports of this committee was later presented to all of the members of the association, after an investigation that lasted for several weeks. The essence of the recommendations made in these reports were to the effect that "a standard rule of grading and handling must be made; the pack must be improved in condition of fruit, size, color and general appearance of the package."

The report further declared that a registered stamp, rules and regulations must be adopted. There must be a standard size of baskets for tomatoes; a standard hamper for cucumbers and beans; a standard barrel for spinach and cauliflower and standard crates for cabbage and melons. Then the members of the association must help one another by carrying out the rules and regulations; and must put their name and the association stamp on each basket, hamper and crate of produce.

While the committee was at work upon the investigation, they discovered that 10 to 20 per cent of poor packages in a car would determine the price for the entire car, with the commission men in the cities. By standardizing their pack and working through the association protection could thus be secured.

The same difficulty with the pack has confronted our local produce men, who in reality are compelled to take most anything that is brought to them. The produce is put in the car just as it comes, to bring what it will on the open market.

The work of loading three or four cars in an hour does not give much time to sort and pack. Our local produce men pay cash for everything, working on the law of averages, and making prices accordingly.

Marietta has a local fifty-ton ice plant and one of the largest produce houses in the vicinity has a large cold storage plant in which they chill the produce before it is placed in the cars. This has proven to be a distinct advantage.

In the country we often hear it said that "the produce men rob the farmers." In the cities we are told that "the commission men rob the consumers." There may be some truth in both of these statements, but in reality both are to blame. The producers are at fault for the poor packing and the dealers for accepting badly and dishonestly packed truck and fruit.

There are eighty members in the Marietta association, and in order to secure a special train to Pittsburg the railroad has to be guaranteed a certain quantity of freight. The association has more than made their guarantee, and have a fast freight train leaving Marietta late in the afternoon, arriving at Pittsburg in time for the early markets. And while this advantage has come about largely as a result of the efforts of the association, it is not monopolized by the members. Anyone can ship their produce on this special train, and can likewise buy their packages at the association's prices. Although the membership is small, and limited, the whole truck growing community has been greatly benefited by the existence of the association, and enjoy everything except the use of the association's stamp. The association has limited their membership, as they find it is plenty large to work to advantage.

The association is determined to put out an honest pack. Its inspectors demand first of all that the produce be hauled on spring wagons. Each load must be "O. K.'d" by the inspector before it is placed in the car. The produce is examined by a second inspector at its destination. If any basket is marked below the standard of its class, the name on the basket is taken and sent to the association, and the sender is dealt with by the executive committee of the association.

Each pack of produce bears the name of the grower, and also the stamp of the Marietta Truck Growers' Association.

The produce is sold through the "pooling system." All of the produce received on a given day is termed a "pool." Each pool has a different number, beginning at the first of the season with number one. As soon as returns from a pool are received, a copy is sent to each member. Some pools may be delayed and take a week or more to receive returns, while others would come within a day or two. Each member has his individual number, and by this method there is nothing but figures on the report sheet. At the end of the season a tabulated report is given to each member. It has taken a great deal of work to develop this system to its present efficiency and simplicity.

While there is yet much to accomplish in the way of co-operative marketing and buying the supplies it is giving satisfaction wherever properly conducted. It is solving many of the problems of truck farming, especially in communities where there are a large number of people engaged in the same line of work

Ohio. JAMES W. McLAREN.

To Kill Cabbage Worms.

The following material is recommended by the New York Experiment Station for controlling cabbage worms, and is known as the "lime-resin" mixture:

Pulverized resin, 5 pounds; concentrated lye, one pound; fish oil, one pint; or whale oil soap, one pound; water, 5 gallons.

Put the resin, soap and one gallon of water in an iron kettle and heat until soft, then add the lye, stirring well. Finally add 4 gallons of water and boil several hours until it is reduced to a clear yellow liquid. Add water from time to time to keep the original quantity. This makes a stock solution.

For use add one gallon of the stock solution to 16 gallons of water, 3 gallons of white wash and one-fourth pound of paris green or one-fourth pound of arsenate of lead.

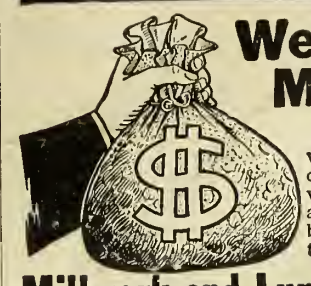
This makes a solution that will stick to the leaves of the cabbage and retains the poison where the worms are eating. To make this solution effective against the aphis on cabbage, dilute the solution with some one of the various tobacco extracts instead of water.

Keeping rabbits from damaging fruit trees is sometimes a difficult task. They prefer young trees, as the bark is tender and succulent, but when hungry will nibble on mature trees. The best protection comes from keeping the trunks wrapped with something that will keep the rabbits out. Wooden veneer wrappers are made for the purpose. There are also coiled wire and woven wire wrappers. Newspaper, and even corn stalks may be tied around the tree. They are very effective, but troublesome to put on. All wrappers should be taken off in the summer.

Renew your subscription today.

Write for Grand FREE Millwork Catalog on That Coupon!
5,000 Bargains Offered at 50c on the Dollar!

Cut This Out!
GORDON-VAN TINE CO.
2768 Case St., Davenport, Iowa
Please send the FREE BOOKS checked below, to
Name.....
Address.....
Occupation.....
☐ Millwork ☐ Lumber
☐ Roofing ☐ Plan Book
If you wish the PLAN BOOK, enclose 10c for postage and mailing.



We Hand You All the Middlemen's Profits

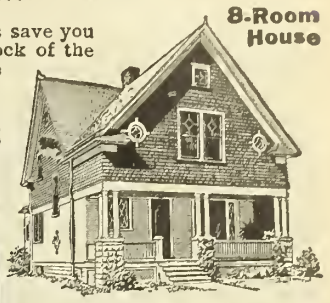
We will sell you the finest quality of Millwork, Lumber and other Building Material at one-half what dealers ask. In our latest Catalogs we offer over 5,000 wonderful bargains. Our Mill-to-Consumer prices save you all middlemen's profits. Our immense plant is filled with a vast stock of the best building material in America. Our prices save the public more than a million dollars a year.

Millwork and Lumber for Houses, Barns and Outbuildings at Huge Reductions

We own our own mills, warehouses and lumber yards. We pay no tribute to the lumber barons or the sash and door combine. Hence we are able to sell our output at huge reductions in price.

You can save several hundred dollars on the cost of a new house or barn by buying direct from our Grand Free Catalog instead of through retail dealers. In the past five years we have sold Millwork and Lumber for more than one hundred thousand houses.

8-Room House



$857 buys all the Lumber and Millwork for this 8-room house. Plan No. 121.

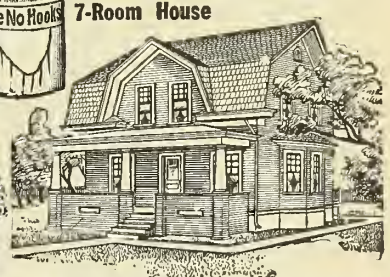
Bungalow

$938 buys all the Lumber and Millwork for this beautiful bungalow. Plan No. 106.

8-Room House

$790 Buys all the Lumber and Millwork for this handsome 8-room house. Plan No. 145.

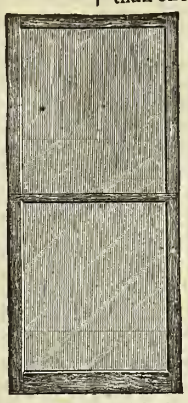
7-Room House



$1,013 buys all the Lumber and Millwork for this 7-room house. Plan No. 113.

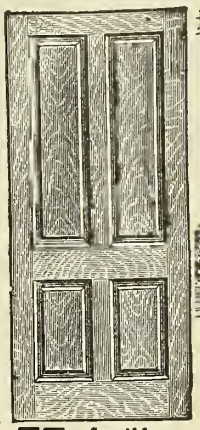
Windows
At 50c on the Dollar
We offer a thousand sizes and styles of Windows from 50 to 75 per cent below retail dealers' prices. Plain Rail and Check Rail Windows, Art Windows in exclusive designs, Leaded Glass Windows to match any style of architecture. We guarantee safe delivery, quality and satisfaction.

Colonial Built-Up Column, $1.63



67c for 2-Light Check Rail Window

Vast Stock of Doors
At 50c on the Dollar
We carry a greater variety of styles in Doors than any other concern. Our prices are the lowest. Plain Doors, Fancy Doors, Art Glass Doors—all of highest quality in materials and workmanship.



77c for this Strong Door

Stair and Porch Millwork
At 50c on the Dollar
On material for building Stairs and Porches we save you about 50 per cent of the retail dealers' prices.
We carry Stair and Porch Work in a great variety of styles. We can save you from $60 to $125 on a flight of stairs and from $15 to $50 on a porch.

Millions of Feet of Mouldings
At 50c on the Dollar
Immense stock of finest Mouldings; Corner, Head and Base Blocks, Inside Finish, Flooring, Ceiling, etc., etc., at rock-bottom prices. All bright, new, clean stock—quality guaranteed.

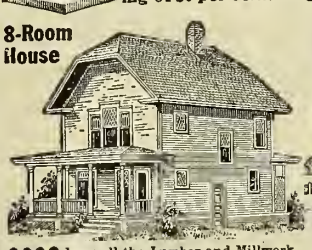
$5000 Plan Book Free
Over 50 designs for Houses, Cottages, Bungalows, etc., costing from $600 to $6,000. Most practical Plan Book ever issued. Every house shown has actually been built at the figures stated. This beautiful book is free. Send a dime for postage and mailing.

Send Coupon at Top of This Page
or Write a Letter or Postal Card
Do it now and by return mail you will receive our Grand Free Catalogs with 5,000 record-breaking bargains. Build, remodel or repair at a saving of 50 per cent. Sign and mail the Coupon.

LUMBER Prices Lowered!
You can save $100 to $500 on every carload of Lumber bought from us. We sell more lumber in a day than most dealers sell in six months.
Grades Guaranteed. Write for FREE LUMBER PRICE LIST; send your lumber bill for Free Estimate.

ROOFING
At 50c on the $1
Genuine Flint-Coated, Waterproof and Fire-Resisting Roofing. Every roll guaranteed 5, 8 or 10 years, according to weight. Roofing Catalog Free.
Price per square of 108 square ft.
93c Quality Guaranteed

8-Room House



$698 buys all the Lumber and Millwork for this 8-room house. Plan No. 100.

Farm Barn

$686 buys all the Lumber and Millwork for this barn. Plan No. 202.

$644 buys all Lumber and Millwork for this 6-room cottage. Plan No. 104.

GORDON-VAN TINE CO., 2768 Case St., Davenport, Iowa

FRUITS AND VEGETABLES

Florida Offers Great Opportunities to Those Who Have the "Get Up and Get There"

Just now Florida lands are attracting a great deal of attention, and extravagant claims are being made by some of those interested in the development of that country. On the other hand, it is claimed by other persons that there are no good opportunities in Florida. Somewhere between these two extremes lies the truth.

Florida is a state of wonderful resources, especially to the man who wants to grow fruits and vegetables. It has a very favorable climate, good shipping facilities, and crops come on the Northern markets at most favorable seasons to get good prices. But the man who expects that vegetables or fruits in Florida will grow without work is greatly mistaken. Good care and proper cultural methods win out in Florida, as elsewhere.

HARVESTING TOMATOES IN A FLORIDA FIELD. Courtesy Seaboard Air Line Ry.

Florida horticulture is almost in a class by itself. Perhaps the best returns are from oranges and grapefruit, pecans and truck crops of all kinds. Pineapples of highest quality can be grown there, and in some districts peaches are successfully grown, but these crops usually do not bring the returns which are received from the other crops mentioned. Florida grapefruit is admittedly the best grapefruit in America. Grapefruit from California is not to be compared with the product of the Florida groves. The grapefruit is rapidly coming into favor as a breakfast fruit, and prices have usually been satisfactory. The trees come into bearing early, as is shown by the illustration in this article, and trees which are well cared for will produce profitable crops indefinitely—that is, the history of the grapefruit industry does not extend back far enough for well-cared-for trees to cease to produce.

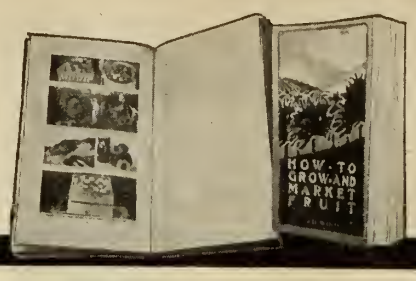
The wood of grapefruit trees is very hard and tough—indeed, the trees bear loads of fruit almost inconceivable to the man from the Northern states. The fruit comes in bunches, hence the name "grapefruit." While oranges are very profitably grown, it is probable that at this time grape fruit culture is even more profitable. The writer saw an old tree which in a single season had borne fifty boxes of grape fruit, which sold for $3.50 per box f. o. b. shipping station.

Grapefruit and orange groves need fertilizing. Florida's soil seems to be especially rich in nitrogen and in vegetable matter, or humus, but is deficient in potash and phosphoric acid. These two fertilizing elements are readily available, however, for steamers bring the potash from the German mines, and there are great deposits of phosphate rock in Florida, so that the deficiency of the soil can be readily supplied.

The vegetable industry in Florida is the one which proves most interesting to the Northerner. It seems strange to plant crops during the months when everything is frozen up in the Northern states, and some of the methods followed are equally strange. Conditions vary greatly in different parts of the state. Soils also vary greatly, but the best vegetable lands are not confined to any one section. In some places there is an excess of rainfall during the summer season, and tile draining is practiced to carry away the surplus moisture. Yet in these same districts there is a deficiency of rainfall during the winter season, when vegetable crops are maturing, and irrigation is needed. It seems strange to think that a state with the enormous rainfall reported from Florida should ever need irrigation, but some districts do, and the truck growers are as enthusiastic over irrigated farming as the residents of the arid regions of the West, where nothing grows except when artificially watered. They argue, just as the Westerner does, that they don't want rainfall; that they want to water their vegetables just when needed; that the yield is greater and the quality of the product is much improved.

One of our illustrations shows an irrigated garden in mid-winter. In this field the Skinner system of irrigation is used, which applies the water in the form of a fine mist, like rain. Water comes from artesian wells, which can be found almost everywhere, and it is pumped through the overhead pipes by gasoline engine. For shallow-rooted crops, such as lettuce, radishes, celery, etc., this system of irrigation is

IRRIGATING CELERY AND LETTUCE IN FLORIDA, BY SKINNER SYSTEM. Courtesy Seaboard Air Line Ry.



Make Your $5000 Farm Worth $25,000

A farm that yields $1,000 a year is worth, say $5,000; if it yields $5,000 a year, it is worth $25,000, and so on. It takes good management and many acres to produce $1,000 net each year raising grain and stock. Good management on only a few acres will produce $1,000 net a year growing fruit. A fruit farm of the same size as a grain farm, in the same location, with the same amount of work, will yield and be worth five times as much when it is offered for sale.

Orchards Do It; They Are Safe and Profitable

With modern methods you can produce large crops of perfect fruit every year. Market demands are such that you can sell this fruit for at least three times the producing cost. Success in fruit growing is only a matter of following well-known rules. Granted that you have the ambition and the energy, and sufficient capital, you are absolutely safe in planting an orchard. If you know how, so much the better; if not, don't let that hinder you; we'll tell you how.

"How to Grow and Market Fruit"

Explains what is needed, why it's needed, and then directs you how to do everything required. Nearly 150 pages, 24 pages of pictures that show how, strongly bound, will last for years. Free to customers who buy $5 worth or more of trees. To others the price is 50 cents, subject to rebate on $5 order.

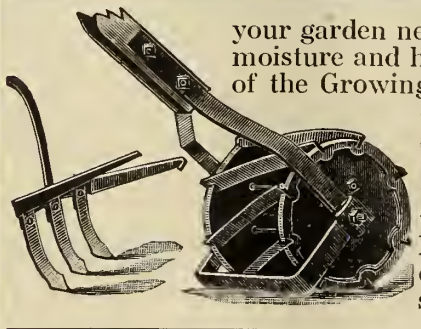
Our live 1912 catalog tells you what you ought to know when you plant trees. Ready in February, and sent free. Write for it today.

HARRISON'S NURSERIES

Atlantic Avenue BERLIN, MARYLAND

Valuable Maryland and Delaware Farms For Sale
Write for particulars.

In Dry Weather



your garden needs mulching to conserve the moisture and hold the plant food for the use of the Growing Crops. After rains, cut the crust and pulverize the top soil so that air can penetrate to the roots of the plants. All this can be best done by the use of the **Barker Weeder & Mulcher.** Write today for full descriptive circular and our special factory-to-user offer.

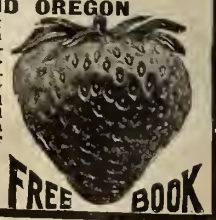
THE BARKER MFG. CO., David City, Nebr.

Great Crops Of **STRAWBERRIES** And HOW to GROW THEM

is a complete treatise on strawberry culture written by America's greatest strawberry expert. Indorsed by agricultural colleges and strawberry growers of highest authority. It tells all about our big branch strawberry plant farms in

IDAHO AND OREGON

Where the pure Kellogg thoroughbreds are grown to perfection for our *Pacific Coast and Inter-Mountain State customers.* Government reports show that strawberries yield more dollars per acre and give quicker returns than any other crop. Get our book and learn how.



IT'S FREE!

R. M. KELLOGG CO.
Box 805 Three Rivers, Mich.

FREE BOOK

Wonderful Fall Bearing Strawberries These new berries are a great success. They bear fruit every fall as well as spring, three crops in two years. They have yielded as high as 10,000 qts. to acre in Aug., Sept. and Oct. of first year, with us. We cannot get enough fruit to supply demand. I know of nothing quite so profitable. We are also headquarters for Plum Farmer, Idaho and Royal Purple Raspberries, Watt Blackberry, Early Ozark Strawberry, Hastings Potato. Catalogue of all kinds of Berry Plants free. Address

L. J. Farmer, Box 230, Pulaski

generally favored, although some growers irrigate these crops by furrows, as is done in the West, and most growers water tomatoes, potatoes and similar crops by means of the furrow system.

Opinions vary greatly as to the most profitable truck crops to grow in Florida. Much seems to depend upon the liking of the man doing the work. Some men like to grow celery, while others don't like this crop at all. Some men prefer to raise head lettuce, and the crops they produce are wonderful. Others will specialize on beans, and still others on potatoes. In every case, however, it will be found that the grower has two or more crops which can be grown on the same soil, thus getting maximum returns. Tomatoes follow lettuce very nicely, and a crop of corn or potatoes can be grown after the best of the tomatoes have been sent North.

It will be readily understood that the man who keeps his land busy producing profitable truck crops must be right on the job all the time. This work requires brains, and it requires work—but it pays big returns. The summer season is the time to rest, and the Florida truck grower enjoys his vacation period. Some of them come North, some take a steamer for Europe and spend the season in travel, while others who are particularly industrious, have apple orchards in the North and look after them during the off season in Florida. The writer recently saw a man who has a grapefruit grove in Florida and an apple orchard in Colorado, and he thinks he has the ideal combination to make money and keep him employed the year around.

Now is a good time to visit Florida. The climate will be found delightful, the people will be found most hospitable, and the products of the soil and the sea food which is everywhere available will delight the palate of the visitor from the North. Don't expect too much of Florida. It's a new country, with almost unlimited possibilities, but much development work remains to be done, and good settlers from the North are wanted to help in this work. If you can find time, go down and see the country and study conditions; you will find the experience most interesting and most helpful, and you will get a proper idea of the country and its possibilities. Low rates to that country are now made by all railroads, and this is a delightful time of year to make the trip.

THREE-YEAR-OLD GRAPEFRUIT GROVE ON SEABOARD AIR LINE RAILWAY

Grapes in Washington.

The acreage of vineyards in the Sunnyside Valley has been considerably increased within the past few years. In fact, there was no acreage a few years ago, only a few vines in gardens and home vineyards. But this volcanic ash soil seems to be ideal for grapes, especially for the vinifera varieties. I was recently shown a Thompson seedless vine which I was told had been set but four years, which was fully four inches in diameter at the base, with a tremendous growth of cane wood and fine fruit. Native varieties thrive and yield heavily, but do not bring as good prices as the big and beautiful Black Hamburgs, Flame Tokays, Muscats, Malagas and Rammonias. In fact prices for the Concord class were so poor this season that a large part of the crop was manufactured into bottled juice, which promises to develop into a thriving industry.

I have 75 or 80 varieties under test, but on account of circumstances beyond my control, everything in that line had to be neglected this season, and I have secured very little reliable data. I was hoping for some fine results from the Russian grape Zabalkanski, which Tribble Bros. of California—who have a very large number of varieties under test—consider the most beautiful of its class, and superior to the Tokay. But my Zabalkanskis were all killed back to the ground last winter and bore no fruit this season. Unless it proves more hardy in the future it may be difficult to grow it here. However, most the vinifera class need some winter protection to insure them against damage, although varieties differ in hardiness. Thompson seedless and Rommonia seem to endure more cold than Tokay or Muscat.

Best results are secured on well enriched soil by using plenty of irrigation water early in the season to procure rapid growth, and shutting off the water early in the autumn so that ripening of both fruit and wood will be hastened by the drying out of the soil. A friend of mine lost several tons of beautiful Malagas, Rommonias and Tokays this season by frost, owing to tardy growth and slow ripening. He proposes to treat these vines with a coat of manure and irrigation earlier next season.

Cornichon and Emperor are evidently too late in ripening for this climate. What few do ripen are lacking in sweetness, on account of the cool weather at ripening time. Emperor is too sour to eat.

I am pleased with the behavior of Munson's "Armalaga." It has made a very thrifty growth and delicious fruit this season, the second year after setting. While not as large a berry as some of the pure vinifera varieties, it is very firm and does not part easily from the stem. Its color, white, is against it for a market grape, but if it will thrive in the East where the pure viniferas will not, it ought to be a valuable addition to the list for the home vineyard. I am disappointed in the Banner grape. It is pretty and has a pleasant flavor, but too acid next to the skin to suit me. It actually sets my artificial teeth on edge to eat them.

Three years ago a vine brought from Japan was given me for testing, but it has made rather slow growth and bore no fruit. I have also some recent importations from other countries by Tribble Bros. and by the U. S. Department of Agriculture which have not yet come into bearing. I hope to be able to report on some of these at some future time.

Washington. GEO. H. PATCH.

The Seeds That Yield Are Sold By Field

You know this, if you've tried them. If you haven't, do so this year. If you do, I know I'll have you for a customer right along in the future. My seeds are different because I grow them, or select them from the stock of other growers, to my own standards. I've been farmer, trucker and fruit grower, as well as seedsman, for many years; so that I've learned the kind of seeds that are needed to make the average garden or the average farm yield the crops it should.

Of course you're "some gardener and some farmer," yourself. So am I—if I may be pardoned for saying it—and I feel pretty sure that, in my twenty years' experience, I've picked up some things that **you** haven't. These facts I have put into my catalogue, and if you read it, you can save trouble, time and money.

Mine is a Different Catalog

Take your vegetable garden—take beans, for instance. There are a lot of **good** beans, but there are only about two or three **best** kinds for your particular locality. My book tells about beans in such a way that you can pick out the best ones for **your** place right off.

Same way with farm seeds—you know what a reputation my field corn has. The new strains of corn I have produced have raised the standard of corn production all over the corn-producing states. And same way with seeds for that flower garden—I'm mighty proud of what the women folks think of my flower seeds.

Get My Catalog NOW

—**RIGHT NOW**—when you have time to sit quietly down and read it through. I have copies here for seed planters who **really want** better crops this year. Plenty of books for really interested folks, but none for idle inquirers.

HENRY FIELD, President, Private Desk 15

HENRY FIELD SEED COMPANY

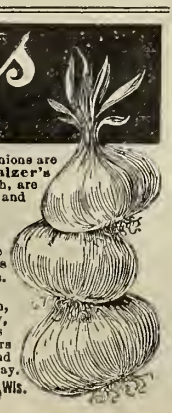
SHENANDOAH IOWA

FERRY'S SEEDS

Good gardeners are those who raise good flowers and vegetables. Good flowers and vegetables come from good seeds. We produce good seeds—the inference is obvious. For sale everywhere.

1912 SEED ANNUAL
Free on Request
D. M. FERRY & CO.
Detroit, Mich.

Onions

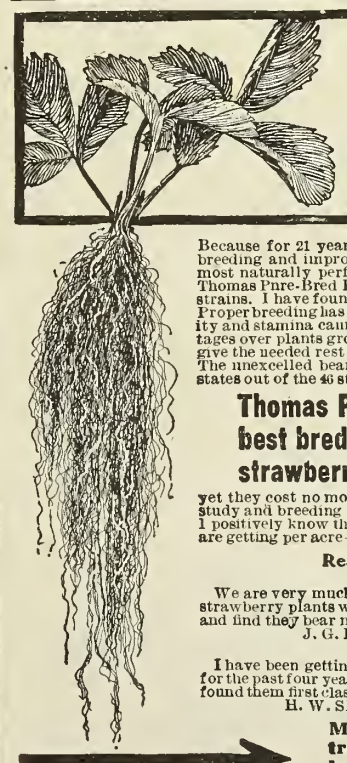


The largest, best keeping, handsomest Onions are produced from Northern Grown Seeds. **Salzer's Seeds** are grown in the extreme North, are pedigree stocks, and for purity vitality and yield are unsurpassed. Catalog tells.

8 MARKET SORTS, 12c.
The following are the three most popular sorts: One large package each **White Portugal, Yellow Globe Danvers** and **Red Wethersfield,** to test, 12c.

FOR 16c.
10,000 kernels of splendid Lettuce, Radish, Tomato, Cabbage, Turnip, Onion, Celery, Parsley, Carrot, Melon and Flower Seeds producing bushels of vegetables and flowers **for 16c postpaid.** Our great Plant and Seed Catalog free for the asking. Write to-day.

John A. Salzer Seed Co. 208 S. 8th St. La Crosse, Wis.



Bigger Crops of Better Strawberries Grow from Thomas Pure-Bred Plants

Because for 21 years I have devoted myself, body, brain and conscience, to up-breeding and improving the strawberry. I started right. I selected Anna—the most naturally perfect soil and climate for strawberry culture—as the home of Thomas Pure-Bred Plants. Every year I have produced new and more productive strains. I have found that some plants show a strong tendency toward betterment. Proper breeding has enabled me to produce plants which for bearing qualities, vitality and stamina cannot be equalled. Thomas Pure-Bred Plants have many advantages over plants grown North, South, East or West of Anna. Our soil and climate give the needed rest and dormant season to a degree that does not exist elsewhere. The unexcelled bearing qualities of my plants are proved by record crops in 40 states out of the 46 states in the Union

Thomas Pure-Bred Strawberry Plants are the best bred, best grown, best dug, best packed strawberry plants that money can buy,

yet they cost no more than "average quality" plants. I've devoted my life to the study and breeding of the strawberry plant. This one thing I do. I have 200 acres. I positively know that I can increase your yield. I care not how many berries you are getting per acre—if you use my plants, you can get more.

Read What Some of My Customers Say:

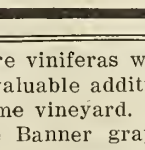
Lonisiana.
We are very much pleased with our strawberry plants we bought from you and find they bear nicely.
J. G. HIRSCH & BRO.

Illinois.
I have been getting plants from you for the past four years and have always found them first class and true to name.
H. W. SHACKELFORD.

Arkansas.
My 27,000 plants are doing fine, much better than my neighbors', who used native plants. E. E. WILLIAMS.

Missouri.
The plants I ordered arrived in a good condition. All plants I have ever ordered from you have been true to name and I have been pleased with them.
G. M. WITHERS.

My personal guarantee that every plant is true to label and free from disease is backed by my 21 years' experience and reputation right in my own home county.



I will help you select the varieties best suited to your soil and climate. I can prove to you that whether grown for home use or for the market, Thomas Pure-Bred Plants will bring you the largest return for your money, time and labor. The leading features of my system are explained in

My Great Strawberry Book

Send for it to-day. I'll send it, all charges paid. It's valuable alike to beginners and large growers. It tells how to buy plant, cultivate, market. 48 pages, 65 engravings. Write to-day.

W. W. THOMAS The Strawberry Plant Man
136 Main St., Anna, Illinois

GOOD

Strawberry Plants

Is what you want for spring planting, we have them at the right price. Our fall trade was larger than ever before. We are now booking orders for spring. Send today for our spring catalogue.

LOUIS HUBACH Route 2 Judsonia, Ark.

CARE OF THE ORCHARD

How a Berks County, Pennsylvania, Man Made His the Best Orchard in the State

Fourteen years ago, Elijah M. Zerr, President of the Farmers' Union of Berks county, Pa., saw the need of a new orchard on his farm. His old trees were decaying. Mr. Zerr began to lay the corner stone for a new orchard and planted 300 trees, consisting of Gano, York Imperial, Ben Davis, Smith Cider, Smokehouse, Wealthy, Wagner, Red Astrachans and Yellow Transparent, chiefly however, of Gano and York Imperial. The trees grew vigorously and kept on growing, beyond the owner's expectations until about seven years ago, when San Jose scale became troublesome.

THE COMFORTABLE HOME OF MR. ZERR

Mr. Zerr began spraying in the summer of 1907, when everybody else in Berks county had plenty of apples. Zerr's trees, though young, bore a light crop. Reverses visited the other farmers' trees the following years and they had no apples, and many lost their trees by the scale. This scientific farmer knew that he would eventually win and he kept up the work, though at times it seemed quite tedious and a most disagreeable undertaking. Every spring and fall, he sprayed. Two years ago, he called in the state inspectors under the guidance of State Zoologist Prof. H. A. Surface, and Zerr's orchard was made a demonstration orchard. From then on, at certain periods, men well versed in the control of the San Jose scale and other ills that befall fruit trees, would come to the orchard and tell Zerr and his son-in-law, J. Garfield Eagleman, who by this time became Zerr's tenant, just what to do. Zerr needed no second lesson, he went ahead obeying instructions, knowing that his teachers knew what they were talking about.

Last spring, when the trees were still dormant, they started to spray for the San Jose scale, using one of the prepared lime-sulphur mixtures approved by the state department. Five gallons of the concentrated solution was mixed with fifty gallons of water, and the entire orchard was sprayed four times in the course of the summer. Lime-sulphur and arsenate of lead were also used for the codling moth, six quarts of the concentrated preparation to fifty gallons of water.

The instructors also told the Zerr folks how to trim their trees properly, and at times the instructors took a fancy to the work, working with Zerr's men for days to get them properly trimmed, so that pruning was done in a scientific way. This meant lots of hard work, but the result was, that there was a decided change in this young orchard the first year, and now it has no equal in the state.

Just before Mr. Zerr started to pick the crop, a state inspector again visited the orchard, and pronounced the crop 95 per cent. free from codling moth; and that some trees showed hardly 2 per cent. of the fruit so affected.

From the 300 trees more than 2,500 bushels of apples were picked, and every apple was so perfect, that they could be sold at fancy prices. Then, there were 500 bushels more, that had, perhaps, some little defect or not so uniform in size to class them as No. 1, but far superior to most apples that came from the ordinary orchards in the neighborhood. The wind-fallen apples were turned into cider, and made thirty-five barrels, besides sixty gallons of fine apple butter. This did not include the earlier crop picked from the Yellow Transparents and the Red Astrachans; nor those from the Wealthy trees, a fall variety, which amounted to several hundred bushels.

TWO GANO TREES IN THE ORCHARD OF MR. ZERR

Most of the trees are Gano, York Imperial and Ben Davis. The Gano are equal in color to any apples from the great apple belts of the irrigated regions of the far West; and according to state inspectors, and Prof. H. A. Surface, who was also on hand when the crop was picked, they were far superior to any apples that arrived in the East from the states of Oregon, Washington and California, either as to taste or color. What could be said of the Gano could also be stated of Zerr's York Imperial, Ben Davis and Mammoth Black Twig, of which there are a few trees of the latter variety in the orchard.

One tree of the York Imperial, fourteen years old, bore a crop of nineteen bushels of picked apples; another tree eighteen bushels, and there were many trees of this variety and of Gano, that bore twelve or more bushels; the Gano mostly bearing over fifteen bushels per tree.

Mr. Zerr believes in commercial fertilizer. He uses a mixture that is high in phosphoric acid and potash, analyzing about 9 to 12. For his orchard this last summer he used two tons of South Carolina rock and one ton of phosphoric acid and potash. The orchard was continually cultivated until the last days of July, for the purpose of holding the moisture, and corn was raised in the orchard until this year, but from now on the soil under the fine trees will only be cultivated. The trees are headed low and picking was an easy job. In one day three men picked 150 bushels and one picker made a record of seventy bushels in one day.

With the exception of several hundred bushels sold by Zerr and his son-in-law, Mr. Eagleman, in Birdsboro and Reading, nearby market towns, the remainder of the crop was sold

Planet Jr.

This name is a guarantee all over the world of the most modern scientific farm and garden tools manufactured. Every Planet Jr

cuts your work in half

These tools double your crop yield, pay for themselves in a single season and last a life-time. Built to *do the work*, by a practical farmer and manufacturer with over 35 years' experience.

No. 6 **Planet Jr Hill and Drill Seeder, Single Wheel Hoe, Cultivator and Plow Combined** plants all garden seeds accurately in hills or drills; hoes, cultivates, and plows quickly, and thoroughly. Popular with farmers and gardeners everywhere.

Planet Jr Twelve-tooth Harrow, Cultivator, and Pulverizer is invaluable in strawberry and truck patches and the market garden. Its 12 chisel-shaped teeth and pulverizer leave the ground in finest condition without throwing dirt on plants.

FREE! A 64-page illustrated farm and garden book!

For the asking you can get this bookful of valuable information on all crop growing. You can't afford to miss it.

Send postal for it today!

S L Allen & Co

Box 1107C Philadelphia Pa

"EVERYBODY"

Can Afford a Gasoline Engine With Galloway's New Low Prices

30 Days FREE Trial

You've never before heard of such startling values—I've never offered anything like them and you know full well that no one else has ever come anywhere near my regular prices. But this time I've a startling reason. *I want 10 men or more in every township in the country to own and operate a Galloway Engine*—I've decided to double my factory capacity by increasing the sales twice and sell two where I formerly sold one—this calls for unusual values—hence, the greatest offer I have ever made. I can save you from $25 to $300 on an engine according to the H. P. needed. It doesn't matter what sized engine you want I've got the one to fit your wants and do more work and better work at less actual cost than any other engine in the world. Write at once for full information of the Greatest Offer Ever Made To American Farmers—don't delay but send me your name and address now, before you do another thing. Let me prove to you in cold facts why I can put $25 to $300 in your pocket.

1½ HP $27.50

Other Prices in Proportion

WM. GALLOWAY COMPANY
Wm. Galloway, Pres.
1035B Galloway Sta., Waterloo, Ia.

No Such Quality in any engine—no matter what price you pay—the Galloway price saves you $25 to $300

Pull Stumps! Make Big Money Easy!

Increase the value of your land. Raise stumps, trees and hedges *out of ground*, then raise big crops. Do work for neighbors or rent machine at a big price. You can pull trees faster than you can cut them. Get the only Puller that is self-anchored and stump-anchored, the *unbreakable*

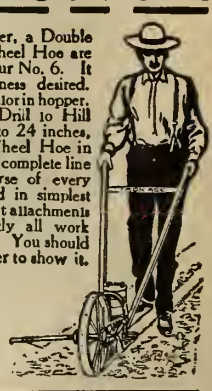
Milne All Steel Combination Stump Puller

Simple, light, handy, rapid, powerful. Many features—Patent Wire Rope Coupler, All Steel Rope Safety Double Power Pulley, Double, Triple and Quadruple Power Attachments, etc. Our new Rotary Power Attachment is a wonder for sawing, grinding, washing, and other power work—a farm horse power.

SEND NAME Get our new catalog of facts, proof and prices. Address MILNE MFG. CO., 788 Eighth Street, Monmouth, Ill.

FOUR TOOLS IN ONE

A Drill Seeder, a Hill Seeder, a Double Wheel Hoe and a Single Wheel Hoe are all combined in Iron Age, our No. 6. It drills accurately any thickness desired. Shut-off on handle, brush agitator in hopper. Changeable instantly from Drill to Hill Seeder or reverse. Drops 4 to 24 inches, as desired. Changed to Wheel Hoe in three minutes. Is but one of complete line that fits the needs and purse of every gardener. Can be purchased in simplest form and added to as different attachments are needed. It does perfectly all work after breaking up of garden. You should see this tool. Ask your dealer to show it. Write us for special booklets.



Complete line of farm, garden and orchard tools.

BATEMAN M'F'G CO.
Box 5062 GRENLOCH, N. J.

Harvey Bolster Springs

prevent damage to eggs, garden truck, fruits, live stock on road to market. Make any wagon a spring wagon. Soon save cost—produce brings bigger prices—wagon lasts longer—horses benefited—thousands in use—"my wagon rides like auto" says one. Get a pair at dealers. If not at dealer's write us. Insist on Harvey's. 40 sizes—fit any wagon—sustain any load to 10,000 lbs. Catalog and fistful of proofs free.

HARVEY SPRING CO., 7361 7th St., Racine, Wis.

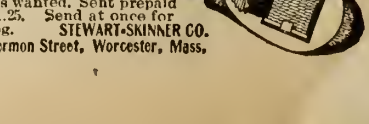
GUARANTEED

FOR MENDING HARNESS

It takes a wax thread, feeds from spool and does the work of any harness maker machine. It is indispensable for farmers. Agents wanted. Sent prepaid for $1.25. Send at once for catalog.

shoes, tents, awnings, pulley belts, carpets, saddles, suit cases, buggy tops, dash boards, or any heavy material.

STEWART'S AUTOMATIC AWL is the only perfect Sewing Awl.



STEWART-SKINNER CO.
83 Hermon Street, Worcester, Mass.

right out of the orchard in carload lots, at prices in excess of what was paid to any other farmer in the neighborhood. They were disposed of by the hundred weight, and loaded in box cars. Five men were at work in the orchard during the picking season.

Mr. Zerr's farm is one of the finest in the county, adapted especially to fruit culture and small truck farming. On it is located what is probably the only irrigating plant in the county, used for the raising of lima beans, peas and other small fruit and vegetables (not used, however, in the orchard). He harnessed Hay creek that flows through his property, pumping its water to the highest elevation on the farm, and then distributing it by gravity, and by this method he has raised more per acre than his neighbors. He makes a specialty of peas and lima beans, growing hundreds of bushels and his watermelons were the largest and best that were grown in Berks county. Thirty acres are thus irrigated.

The theory that Pennsylvania was

PICKING APPLES IN THE ZERR ORCHARD

unable to regain its prestige as a fruit state has been disproved by this member of the Geigertown Farmers' Union, and nearly every neighbor of Mr. Zerr will have an orchard in bearing condition in a few years, or will resurrect old orchards which have been partly killed by the scale.

When Prof. Surface visited the Zerr orchard, it was at the time the annual picnic of the association was held in their hall at Geigertown, and during one of the intermissions, a journey was made to this state demonstration orchard, when Prof. Surface after examining the fine fruit, had this to say, about apple growing in the state. He picked up one of the fine Gano apples, and said:

"No longer do we look to the West for fine fruit. They cannot grow any finer fruit than this in appearance and they cannot grow any equal to this in quality. When their fruit and yours meet in the markets of the world, your product will be found better and will bring better prices.

"We have yet to learn to handle our fruit properly. We should handle our apples as carefully as eggs. I know of three men in Pennsylvania who realize $3 a bushel for their apples.

W. J. Lewis and Bro., of Luzerne Co., raised 23,000 bushels of apples. They packed them carefully in bushel boxes and received $3 a box. They would not sell more than 5 boxes to one customer and then the purchaser was obliged to take four boxes of red apples and one of Greenings. This they did to get rid of their Greenings, for the American market demands a red apple.

"Abroad matters are different and the King of England does not consider a meal complete unless he concludes it by eating a Newtown or Albemarle Pippin grown in Virginia.

"You need not worry about the size of your fruit. It would take a man with an appetite like a government mule to want an apple as large, as this (picking up a 'pound apple') a variety grown in this section for many years. If you produce quality you will get your price.

"Be sure to make an honest package. This year by letting my peaches ripen on the trees and sending them to market in evenly packed baskets, with uniform fruit throughout, I got 25 cents a basket more than did my neighbors.

"You ask, will we be able to compete with Western growers? This orchard is the answer. You have here, size, beauty, color and quality. It costs Western growers 69 cents a box to ship their fruit East. We can afford to grow it at that price and make a profit. Of course, if we can get more we ought to do so. We ought to get all that the market will stand.

"An advantage would be to buy and sell co-operatively. The fruit should be properly assorted and neatly packed. We can't grow more fruit in Pennsylvania than we can consume, if it is properly handled. An advantage would be for a community to combine in the erection of a cold storage plant. The apple growers of Adams county, Pa., have done this. They store their apples in their own vicinity from where they can be shipped to any market.

"It is often advantageous to pack apples in boxes. In this way a box of fruit often sells for more than does a barrel which contains more than twice as much. The apple is the king of fruits and it pays well to grow it. It pays also to care well for your orchards, whether it grows apples or peaches.

"I would plant but four varieties of apples for commercial purposes. If you want to do successful orcharding, you must either do the work yourself or let your shadow fall upon the man who does it, or employ an expert to do it, or expect to fail. It is no trick. If the trees are properly fed and cared for you can expect success. There should be three sprayings—once while the trees are dormant, once just after the blossoms fall, and again ten days later. The first spray should be lime-sulphur solution; the second and third, lime sulphur and arsenate of lead. In feeding the trees, barnyard manure or commercial fertilizers should be applied.

"In planting an orchard I prefer a one-year old whip, four to five feet high. This I cut back to two feet and in the case of a peach tree, to a foot and a half. I want my trees to head low so that when bearing fruit, the lower limbs rest on the ground, and the next limbs on the lower ones and so on. This prevents the trees from breaking, brings the entire tree within reach of the spray pump and makes gathering of the fruit easy. I would be careful to plant in the right kind of soil. Limestone soil is all right for apples, pears and quinces, while shale soil is better for stone fruit. I would plant on elevated land, so that I would have both soil and air drainage.

"I would want the soil in the same condition as I would want it for planting potatoes or corn—not too wet and not too dry. In preparing to plant I would draw a furrow through the field and come back in the same furrow. By dragging a log chain across the furrows I would make the corners where the trees were to be planted. I would prune the roots to about five or six inches, cutting off the tap root altogether, so as to get a spreading root system. I plant the trees about two inches deeper than they were in the nursery. I then place two inches of earth on the roots and tread it down hard. (Don't put manure or fertilizer at the roots, the tree does not need any fertilizer the first year.) Then fill in the ground and make it level.

"Cultivate the trees as a row of trees, the same as you would a row of corn. Cultivate faithfully the second and third years, then you can let the apple orchard go to sod if you want to. Cultivate peaches and plums all the time. Alfalfa is the worst crop you can grow in the orchard. Its roots go deep and rob the trees of the moisture they need to develop the fruit, which is 90 per cent water. You had better sow vetch, cowpeas or crimson clover."

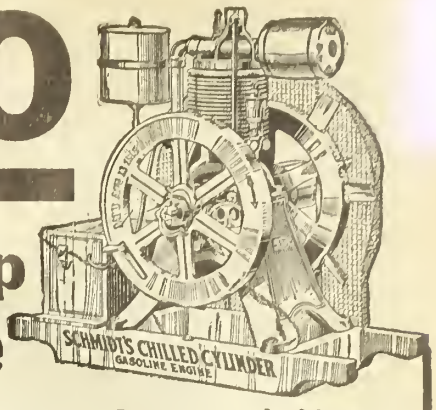
By the time Prof. Surface had told all this to the Berks county fruit growers, the stars were seen above the apple trees, and they all returned to the hall, where they were served with lunch, Mr. and Mrs. Zerr and Mr. and Mrs. Eagleman, being among the "hosts" of the occasion.

H. WINSLOW FEGLEY.

Pennsylvania.

$7.50

And You Keep This Great Engine



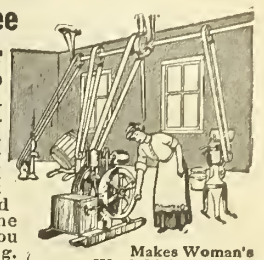
Yes, sir, that's right—you keep this engine for $7.50, a wonderful gasoline engine offer, an offer without a parallel. We ship you Schmidt's Chilled Cylinder Gasoline Engine on your simple request without an order or any promise from you. You use the engine 10 entire days, use it all you want to. Then if you don't want it, send it back at our expense. If you do wish to keep it, pay us **only $7.50 and the rest in the easiest monthly payments. We send you the engine free,** to prove that it is the greatest **air cooled** 3 horse power engine on earth. It is the only engine with the marvelous, powerful **chilled cylinder.** The only engine for farm use with a **spark retarder.** The new type gasoline engine that has revolutionized the gasoline engine industry. The only engine good enough to send out on **actual free trial** without a cent down in any way.

Ten Days' Trial FREE

This is the first genuine free trial ever offered on gasoline engines for farm and shop use. We want you to see that women and children can run this engine. Use the engine to run any machinery you have—the pump—separator—washing machine—corn sheller—grinder—anything. Engine is ready to run when you get it. We will send you prepaid our sensational offer and our very useful book "How to Use Power" free.

5 Years Guarantee Schmidt's Chilled Cylinder Gasoline Engine is absolutely guaranteed for 5 years in every piece and part. The biggest bank in Iowa backs our $1,000 challenge offer.

Send for Free Catalog



Makes Woman's Work Light and Easy

Get our big Gasoline Engine catalog right away. Do not delay about this. Find out all about Schmidt's Chilled Cylinder Gasoline Engine before you think of buying. We will also send you free our book, **"How to Use Power."** To all who will write promptly, we will send this useful book. It tells you just how to use a gasoline engine on the farm or in the shop. Be sure to send us your name and address today.

Schmidt Bros. Co. Engine Works, Dept. 3661, Davenport, Iowa

Mount Arbor Nurseries

E. S. WELCH, Proprietor 130 Center Street SHENANDOAH, IOWA

APPLE, CHERRY, PEACH

LARGE SUPPLY

Currants, Grape Vines, Gooseberries, Blackberries

POPLAR CAROLINA, Immense Stock in all Sizes

APPLE GRAFTS—Made to order a specialty. We are prepared to supply machine wrapped grafts of best quality, put up by skilled workmen. Make a specialty of a complete line of GENERAL NURSERY STOCK. Would be pleased to quote your wants.

Fruit Trees and Small Fruits With a World-wide Reputation for Vigor, Yield and True Species

Largest and most complete collections in America. Strong, well developed trees and plants, free from defects and parasites.

This business, established in 1840, has 72 years of expert propagation and square dealing behind it. This is a guarantee to you of entire satisfaction.

We take extra care in packing and shipping every order—large or small. Goods bought from us will arrive in any part of the country in perfect condition.

Write for 72nd Annual Catalogue

A safe and standard guide to the fruit farmer, and to buyers of Ornamental Trees, Shrubs, Roses, Evergreens and Hardy Plants. Sent free on request.

ELLWANGER & BARRY
Mount Hope Nurseries,
Box 28, Rochester, N. Y.

FITZ OVERALLS

The FITZ reserve stock is always complete on every size.

If your dealer does not have your size in stock he can get it for you within a day or two.

Burnham, Munger, Root D. G. Co.
KANSAS CITY, MO.

Write for Free FITZ Book.

FRUIT TREES

We have the nicest lot of guaranteed fruit trees you ever saw—apples, plums, cherries, pears, peaches. All grown in the north, hardy, healthy, absolutely free from scale. And they're all going to be sold at bargain prices.

We Do Not Sell Through Agents

No need of your paying agents' commissions and expenses. Buy direct from the nursery. We save you about half the price agents charge.

Get Our Nursery Book

Tells how to plant trees, shrubs, vines, etc. Tells how to care for them, when and how to spray. Gives a fund of information and quotes prices that are bound to interest you. We prepay the freight on orders of $5 or more.

ALLEN L. WOOD, Woodlawn Nurseries
578 Culver Road, Rochester, N. Y.

SEEDS Large package Giant Pansies and fine Illustrated Catalog **FREE**
SPECIAL OFFER: 10 varieties Floral Gems and 10 sorts Spencer Sweet Peas, 6c.
Burbank's
A. C. ANDERSON, Box 9, Columbus, Nebr.

The Honey Raspberry.

Very hardy and productive. Large, scarlet berries of excellent quality. A hardy Trial Plant of the above mailed postpaid for only 10c. Also our new Seed and Nursery book, very instructive.

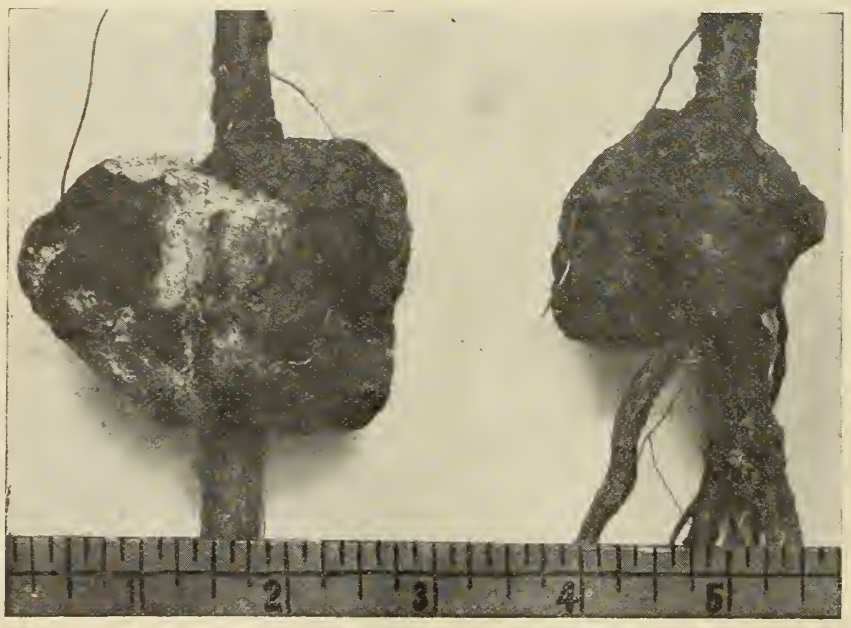
Farmer Seed & Nursery Co., 524 4th Av. Faribault, Minn.

CROWN GALL ON ALMOND

A great difference of opinion exists between nurserymen and fruit growers as to the extent of injury, if any, caused by crown gall on roots of fruit trees. Nurserymen claim that little injury seems to follow galls on the roots of fruit trees, while fruit growers generally claim that when galls completely encircle a root the latter dies or ceases to perform its functions. In states where fruit trees are carefully inspected, the inspectors usually throw out all trees infected with galls, claiming it is dangerous to plant them.

Without desiring to take sides in this controversy—for we confess we know but little about it—we want to tell of some galls on roots of almond trees.

At Morrisania Ranch, in Colorado, some almond trees were planted years ago and have never been profitable. Recently we hitched a Hercules stump puller to these trees and pulled them out. On many of the roots were found great galls, two of which are shown in the accompanying illustration. These galls were not found merely on the main roots near the trunk, but far out on the lateral roots—these galls, for



GALLS ON ALMOND ROOTS, TEN FEET FROM CROWN OF THE TREE.

instance, were perhaps ten feet from the trunk of the tree. Both these galls completely encircled the root, the galls being hard and wart-like. No injury whatever seemed to have resulted from this condition, however. The roots beyond the galls were as green and vigorous as they were on the side nearest the trunk. These roots were plentifully supplied with fibrous feeding roots on both sides of the galls, and the functions of the roots seemed in no way impaired.

No one had ever suspected that the roots of these almond trees were so infected with galls, for the trees have been very healthy and vigorous; they have made a good growth every year, the trees having been planted about thirteen years. There was seemingly no reason why they should not have remained healthy for many years, so far as the galls were concerned, and the presence of the latter would never have been suspected if the trees had not been pulled out by the roots.

These galls are not true crown galls, of course, since they were out on the lateral roots, and not at the crown of the tree, yet in every way they resembled the regular crown galls. It would seem from this experience that the nurserymen have somewhat the better of the argument.

The Control of Peach Fruit Spot By Fall Spraying.

The peach fruit spot (Coryneum beyerenkii) was first reported in Colorado during the summer of 1908. From this time it has been on the increase in certain localities until the majority of the peaches in some orchards were badly infested with the fungus during the last year or so. The peach fruit spot should not be confused with the peach mildew (Spaerotheca pannosa), which is altogether another fungus trouble.

The peach fruit spot appears on the fruit about the latter part of July or the first part of August. Last year (1910) it was first noticed August 10. Its appearance on the fruit will vary somewhat with the season. It first appears on the fruit as a dark brownish or black speck about the size of a pin head. In a few weeks it grows one-eighth to one-quarter of an inch in diameter and is generally round. It then has a very dark, almost black center around which is a dark brown ring, and the outer margin of the spot is reddish in color.

The upper portion of the peach, as it grows on the tree, seem to be affected more than the lower portion. This shows that very likely the spores come from the branches above those upon which the peaches grow. The trouble is always worse in closely set orchards where shade is dense, and it is also found to be worse in the center rather than on the outside rows of such orchards. This is due, no doubt, to the more moist condition found in such orchards. A comparatively moist season is more favorable for the growth of the fungus than a dry one.

Careful investigation and several experiments have been made to determine when and what kind of spray should be used to control the peach fruit spot, with the following conclusions:

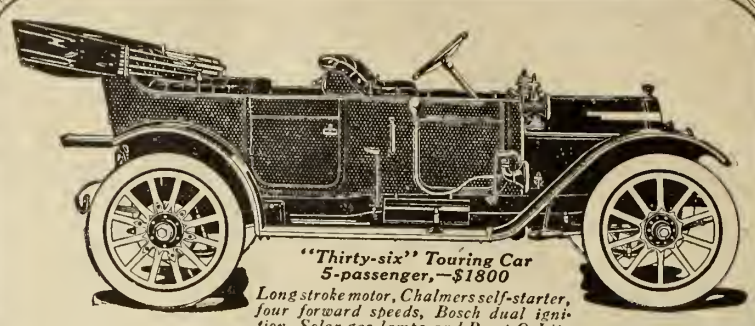
1. Spray in the fall with lime-sulphur or Bordeaux. Either a good commercial brand of lime-sulphur, one gallon to ten gallons of water, or home-made lime-sulphur, twenty pounds of lime and fifteen pounds of sulphur to fifty gallons of water, can be used with good results. If Bordeaux is used, make as follows: Use four pounds of copper sulphate (blue-stone), five pounds of stone lime to fifty gallons of water. First, dissolve the copper sulphate in either hot or cold water; dilute it by adding water to make twenty-five gallons of the solution. Slake the stone lime and dilute with water to twenty-five gallons, making a milk of lime. Pour the copper sulphate and milk of lime solutions together into the spray barrel or tank through a medium fine sieve.

2. Apply either the lime-sulphur or Bordeaux sprays in the fall as soon as most of the leaves have fallen. This generally can be done the latter part of October or the first part of November. The writer prefers lime-sulphur to Bordeaux, but either will control the trouble if the spraying is thoroughly done. Do not use a metal spray tank for the use of Bordeaux unless it is lined or made of copper, as it will eat into the metal.

3. Prune heavily in late winter to allow the sun to penetrate to the branches and leaves during the summer. If the trees are set so closely as to crowd, it would be well to cut out every other one in the rows, so that the trees alternate in the rows.

R. S. HERRICK.

Colorado Agr. College.



"Thirty-six" Touring Car 5-passenger,—$1800

Long stroke motor, Chalmers self-starter, four forward speeds, Bosch dual ignition, Solar gas lamps and Prest-O-Lite tank, ventilated fore-doors, 36x4-inch tires, Continental demountable rims.

"Leans Right Up In the Collar and Pulls"

THIS expression describes very well the mule-like pulling qualities and the bull-dog endurance of the Chalmers "Thirty-six" motor.

Chalmers cars are built for durability: for day-in-and-day-out service; they have a reputation which has made them standard.

The new Chalmers "Thirty-six," the leader of the 1912 line, gives to the farmer, at $1800, a car which he can compare favorably with the high priced cars. When the "36" was planned we instructed our engineers to build a four-cylinder, five-passenger car that would leave absolutely nothing to be desired. We said we would fix the price when the car was ready.

We think in the Chalmers "36" we are offering a car that actually does leave nothing to be desired. The "36" has a splendid motor, with large cylinders, long stroke (4¼" x 5¼"). This motor is a great puller on high speed; a wonderful hill-climber, and will give you all the speed you want. Although rated at 36 h. p., it will actually develop 40 h. p. It is a motor that will "lean right into the collar and pull."

The Chalmers Company was the first to offer a real automobile at a low price. We believe that the "36" is the first medium priced car which will compare with any five-passenger motor car, no matter how costly. It is a car, so reliable, so sturdy, so durable, so good looking, that it will appeal to the farmer as no car heretofore offered can.

The well-tried Chalmers "30," the car that won the last year's Glidden Tour, the car which last year, fully equipped, sold for $1750—now, through improved methods of manufacture—is this year offered to you at $1500.

We invite you to inspect Chalmers cars. Comparison has sold more cars for us than all our advertising. Your local dealer will be pleased to give you a demonstration of Chalmers cars. A postal card will bring you our latest catalog and an introduction to your nearest dealer. Let us get acquainted. Let us hear from you *today*.

This monogram on the radiator stands for all you can ask in a motor car

Chalmers Motor Company, Detroit, Mich.

TO DESTROY APHIS, THRIPS, ETC.
Without Injury to Foliage

SPRAY WITH

"Black Leaf 40"

SULPHATE OF NICOTINE

"Black Leaf 40" is highly recommended by Experiment Stations and spraying experts throughout the entire United States.

Owing to the large dilution, neither foliage nor fruit is stained.

Like our "Black Leaf" Extract, "Black Leaf 40" may be applied when trees are in full bloom and foliage, without damage to either.

Also, "Black Leaf 40" is perfectly soluble in water—no clogging of nozzles.

PRICE:

10½-lb. can, $12.50. Makes 1000 gallons, "5-100 of 1 per cent Nicotine."
2½-lb. can, 3.25. Makes 240 gallons, "5-100 of 1 per cent Nicotine."
½-lb. can, .85. Makes 47 gallons, "5-100 of 1 per cent Nicotine."

These prices prevail at ALL agencies in railroad towns throughout the United States. If you cannot thus obtain "Black Leaf 40," send us postoffice money order and we will ship you by express, prepaid.

The Kentucky Tobacco Product Company

INCORPORATED

LOUISVILLE, KENTUCKY

How to Grow Fine Fruit and tremendous big crops. See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture." WINFIELD NURSERIES

Coyne Brothers Handle All Kinds of Fruit and Produce 160 Water Street, Chicago, Ill.

AGENTS It costs me about $2.00 to secure your name and ship sample machine, but it's a dead sure way of convincing you I've got best household invention on earth. Canvassers and crew managers to make up to $20.00 a day. Elmer E. Stevens, 1288 Adams Express Bldg., Chicago, Ill.

In writing advertisers please mention The Fruit-Grower.

PRICES RIGHT—FREE CATALOGUE—NO AGENTS
Three Hundred Acres of All Kinds of
SMALL FRUIT PLANTS
Most complete assortment in America. Guaranteed true to name. Wholesale and Retail.
SELIGMAN PLANT CO. SELIGMAN, MISSOURI

Sharpen Tools 30 Days Free

You can try this all metal shaft drive tool grinder, with its Dimo-Grit (artificial diamond grit) wheels for 30 days **absolutely free**, and without putting yourself under any obligations. You can put all your tools in bright, shiny, keen condition, and you will be amazed how quick and easy you can do it. You can grind your discs and plow points, sharpen your saws, axes, ensilage cutter, and mowing machine knives—every tool on your farm—all at no cost. Use the outfit 30 days—**then if you don't want it, send it back at my expense.**

Fourteen Machines in One—1, fine Dimo-Grit wheel; 2, coarse Dimo-Grit wheel; 3, universal tool rest; 4, chisel and plane bit guide; 5, Dimo-Grit razor hone; 6, Dimo-Grit scythe stone; 7, Dimo-Grit saw gummer; 8, Dimo-Grit polishing wheel; 9, medium Dimo-Grit wheel; 10, buffing wheel; 11, Dimo-Grit oilstone; 12, Dimo-Grit pocket hone; 13, sickle grinding attachment; 14, disc grinding attachment.

Dimo-Grit—"the wheel for steel"

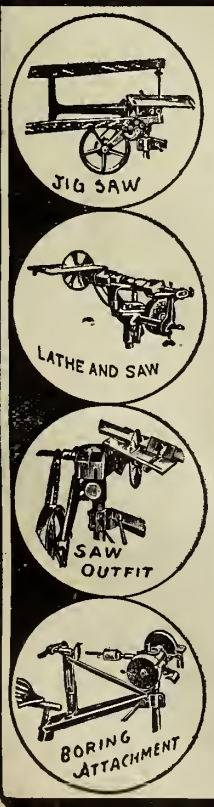
25 times faster than Grindstone—10 times more efficient than Emery—no danger of drawing temper—no need of cooling with water

Dimo-Grit is the new artificial diamond abrasive, a twin product of carborundum you have heard so much about, but Dimo-Grit is especially adapted to steel, leaving the keenest, smoothest edge. Dimo-Grit cuts hardest steel as easy as emery does copper. The Dimo-Grit wheels of this grinder, **turning 4000 revolutions per minute,** make the hardest job of grinding but a few minutes' easy work. **Prove it by trying this outfit on your own tools 30 days free.** Dimo-Grit crystals are really artificial diamonds as hard as real diamonds, fused in the marvelously hot electrical furnaces at Niagara Falls in which fire brick and metal melt like beeswax and are vaporized like water in a kettle. Genuine South African diamonds could cut steel no quicker than Dimo Grit. Carborundum wheels furnished if wanted.

Luther Hummer Tool Grinder

Farm Outfit consists of machine and 14 attachments—16 other attachments from which you can select what you want.

No machine ever built is like the "Hummer"—it is all steel and iron—nothing to wear out—steel shaft drive like automobile—ball bearing, dust-proof bearing. **Costs no more than cheap chain drive grinders.** Runs as easy by foot as a sewing machine—engine power can be applied. The 14 farm attachments equip you to do all farm grinding. From the other attachments, such as jig-saw, rip saw, lathe, drill, etc., you can select what you want. No other machine so moderate in price saves money so many different ways. You can prove it by 30 days' free trial. **Five years guarantee. Over a half million Luther Tool Grinders now in use.**



Separate attachments from which you can select what you want.

Besides the sharpening attachments which are included in the sharpening outfits, there are 16 other attachments from which you can select what you want. In this way you can secure a turning lathe, drill, circle saws, jig saws, metal polisher, skate sharpener which hollow grinds them perfectly, etc.—16 in all—simply by getting these attachments to go on your "Hummer" Grinder.

If you were to purchase machines to do the same work that these attachments will do, it would cost a good deal, but by getting these attachments for your grinder you can completely equip your workshop for amazingly small cost. Our Free Book describes all attachments.

Dimo-Grit Sharpening Stones

Ask your dealer for Dimo-Grit sharpening stones, the fastest and smoothest cutting sharpening stones in the market—look for the name "Dimo-Grit" on the stone.

Big illustrated 40-page book free

This book contains the story of artificial diamond sharpening substances, and of the marvelous electrical furnaces at Niagara Falls, one of the wonder stories of modern science, exactly as printed in McClure's Magazine. It fully describes the Luther "Hummer" Grinder and attachments and gives pointers on tool sharpening. You will find it valuable to you in many ways. This book is free. Return the coupon and get it, along with our 30 days' free trial offer.

Return coupon for free trial offer

Send the coupon for full particulars about our 30 days' free trial offer—then decide if you would like to have us send this wonderful labor-saving tool for 30 days' free trial, absolutely without the slightest risk or obligation on your part. With the free trial offer we will send the 40-page book. Please remember that the coupon places you under no obligation whatever—it is just a request for information. Send for our free trial offer today and get a quick answer.

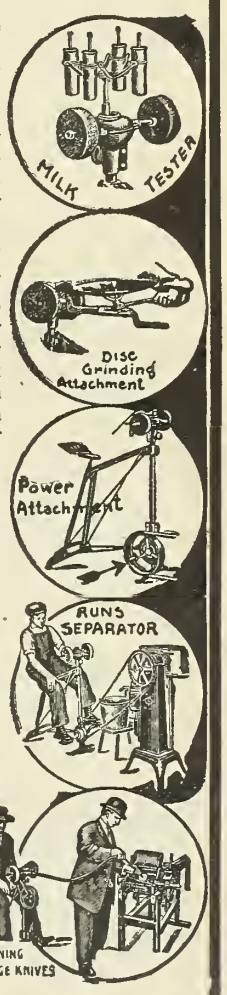
Luther Grinder Mfg. Co.

264 Stroh Building **Milwaukee, Wis.**

Save time and money with this wonderful machine

With the flexible shaft attachments you can sharpen ensilage and threshing machine knives and mower guards, flutes on corn huskers, etc., without removing them—horse shoe calks, clip horses, shear sheep, etc.

The tool rests and attachments automatically give proper bevel to tools, enable a 14-year old boy to do difficult grinding, such as grinding discs, gumming saws, sharpening twist drills and other all edged tools.



Milk tester alone pays for grinder many times over

Over one-third of the cows of America do not produce enough butter fat to pay for their "keep," as any agricultural college or station will tell you. The Babcock milk tester attachment will show you which cows are making money for you, and which are losing money. This alone pays for complete outfit. Price only $2.75.

What others say

Here are just a few of the thousands of testimonials we have received. Our Free Book gives hundreds more—all enthusiastically praising the Luther Grinder.

Agricultural College Recommends It

I find the Luther Grinder an ideal machine for general farm use, and I believe it will be money well spent for any farmer to have such a grinder to keep his tools in shape on the farm. It is as far in advance of the old fashioned grindstone, which required the small boy to turn the crank, as the electric light is in advance of the tallow candle. The machine is well put up, and I am happy to say is sold at moderate cost.

HENRY G. KNIGHT.
Director of Agriculture, University of Wyoming, Laramie, Wyo.

Government Officer Approves

No doubt you wonder how I like the grinder; will say that I am very well satisfied with it and wouldn't be without it for twice the price. Everyone that sees it says it is sure all right.

C. H. SUTHERLAND,
Flint, S. D.
Dept. of Interior, U. S. Indian Service.

Could More Be Said?

As yesterday was a stormy day, I thought it a good time to thoroughly test my grinder. I have a heavy hand ax that had cut so many nails, and had become so badly "nicked" and "gapped" that last summer I decided it would be economy to buy a new one rather than take time to grind it. I bought a new ax, but the thought struck me that the old nicked hand ax would be a good test for the Luther Grinder, so I put on the coarse wheel and went after it and it took me just sixteen minutes to grind every "gap" out and put the old ax in better condition than it was when it came from the factory. Any carpenter knows what it means to grind "gaps" out of an ax on a grindstone. It would have taken me half a day to have done the job on a grindstone.

The machine is all you claim for it and more too. Any one who will give it plenty of speed and very right pressure will obtain results he can't get on any other grinder. It runs so free and light that it is not tiresome to grind with it.

Oswego, Kans. J. L. BALLARD.

Coupon

Luther Grinder Mfg. Co. 264 Stroh Bldg. Milwaukee, Wisconsin.

Please send, without cost or obligation, your 30 days' Free Trial Offer and large book free.

My name is .....

My address is .....

THINK OF RAISING FRUIT?

Some Valuable Suggestions For the Beginner in Setting Out and Caring For an Orchard

Without doubt a very large percentage of the beginners in the orchard business come from the city and non-fruit growing sections. These persons, as well as others, are confronted with the problem of choosing a locality or section in which to begin their chosen profession. I say "begin" advisedly, as this profession is like unto the saying of the Master Builder, "many seek, but few findeth." All fruit sections, near fruit sections and make-believe fruit sections are eager to attract buyers and each claim to be the original Garden of Eden. If the land a "shark" is trying to sell is not in a fruit section it is in close proximity, as one man advertised land as being near or adjacent to the Rogue River country, when in fact it was about 100 miles distant, and that across the mountains. Another man in Chicago sold a foreign "sucker" a piece of fruit land (five acres) in southeastern Oregon, unseen, which was 150 miles on a bee line from the nearest railroad. After a would-be fruit grower has read all the dope from different sections he is in no condition to make a selection. If you are unable to visit the different sections look into the reliability of the agent or company you are about to deal with. However, if it is at all possible, visit the different sections and see for yourself just what they are doing. After you have selected a locality it would be well to get an expert to pass upon the tract before buying.

Nearness to markets and transportation is a very important consideration. The markets are of two kinds, namely, home and foreign. In other words, you sell your crop in a nearby town, or ship. A large percentage expect to ship their output and to this class the question of transportation is of very great importance. Unless you can be absolutely sure of this factor, it will be best for you to look further. Get as close to the shipping point as possible, as long hauls by wagon will take a big slice out of your profits.

The Site.

When you have decided on a locality, whether in the Northwest, West, Middle West or East, close attention must be paid to the particular site on which the orchard will be planted. Study this spot with reference to soil, elevation and water and air drainage. Any soil that has a depth of four feet and will produce a good yield of farm crops will produce fruit trees, especially apples and pears. However, whether or not these trees will produce fruit depends on the drainage. Trees will not thrive where they have wet feet; that is, the soil being waterlogged two-thirds of the year. The water keeps out the air and forces the tree to form its roots near the surface. When a dry spell comes on, the tree cannot mature its crop properly for lack of nourishment, as the water table has dropped far out of reach of the shallow roots. A site on which the air will not circulate readily is to be avoided. The tree may do well, but the loss of crop from frost will be frequent. The work of the frost on such a spot was well illustrated in a newly planted vineyard in this locality. While the surrounding country is ideally suited to fruit growing this one tract has a depression of about one-third of an acre in extent, and the lowest point was not over five feet below the surrounding land; yet the leaves on the vines in this low spot were frosted at least a month in advance of other plants. The reason for this is that cold air settles down into the depressions and if it cannot flow off rapidly frost will appear here before it will on well-drained land.

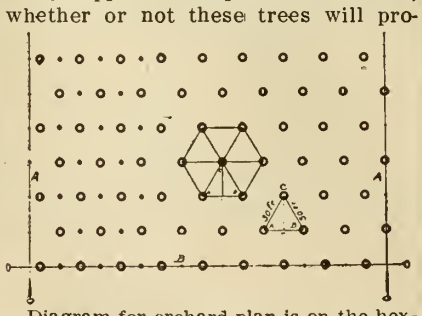


Diagram for orchard plan is on the hexagonal plan. The black dots indicate where fillers are to be placed.

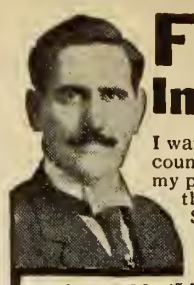
Preparing the Soil.

The land being secured, or if the prospective fruit raiser is already a land owner, the next step will be putting it in shape for the trees. The amount of labor and money that will have to go into this phase of the work will depend on whether or not you have purchased improved land. As an example, let us take some of our Northwestern soil, covered with fir or pine. I have seen some of this burned over land that could be put in shape for the trees for about $25 per acre. However, this is not the rule. The usual cost will be nearer $100 per acre, and much runs up to $250 to $300 per acre. Improved land at $100 to $250 per acre is always cheaper than $50 land in the rough. Sometimes the heavy timber is chopped off and sold, the smaller growth slashed and burned, then a bunch of goats turned loose on what is left for four or five years. By this time the small stuff will have decayed. The big stumps are either split with powder, then pulled out, or burned out by piling wood around them, covering this over with bark, then dirt, and starting a fire in a vent left for that purpose. This is known as charcoal pitting, and it takes something of an expert at the job to be, as I say, a "roaring success." Sometimes the man who is doing the work thinks it more economical to shoot the stump clear out of the ground. This leaves quite a hole, and will cost about $5 for the "prize" stumps. Of course if you are in a big hurry you can shoot the green stump, then pull it out with a donkey engine. All grubs, stumps and trash should be removed before planting. One thing we are very thankful for is the fact that all the good fruit land is not confined to the fir and pine districts.

After the ground is cleared of all trash it must be given a good, deep plowing. Our land here is free from timber, so we can go ahead with the plow. We used two big gas engines, each pulling eight plows and a drag harrow. These plows were put down twelve inches deep, thus producing an ideal bed for setting trees. This deep plowing is very necessary, as it is the last time the soil can be stirred deeply in the spot the tree will occupy, that is by plowing. I know some orchards that experts thought advisable to have the soil loosened deeply just where the tree stood, so a hole was bored down under the tree three or four feet in depth and one-half stick of giant powder dropped in and fired. Excellent results were reported. However, we must not neglect the first plowing, even if we can resort to such drastic treatment.

System for Laying Out the Orchard.

Of course you have been figuring on just what system you are going to use in laying out your orchard. There are four that are most generally used. They are the square, quincunx, hexagonal and contour. The first is most generally used, as it gives more room for inter-cropping. The quincunx system is simply the square system with a tree set in the center of the square. The hexagonal is set on an equilateral triangle which, when all of the trees are in, gives an appearance of one tree surrounded with six, or a hexagon. The contour is used on hill sides, and especially where irrigation is to be used. The rows follow the contour of the hill, thus allowing a gradual slope for running the water. The latter system is very little used. Some prefer the hexagonal system as the largest number of trees can be planted per acre without crowding, as each tree is exactly the same distance from every other tree. The number of trees per acre for each system when a given distance is used, is as follows: Take

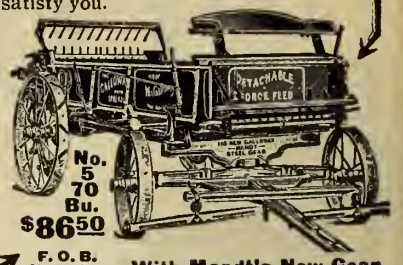


FIRST TEN MEN OR MORE In Every Township—Answer!

I want to place 10 Manure Spreaders or more in every township in the country in the next few months. And that means that I have to cut my prices to the bone to do it! So the first ten men or more who answer this from each township will receive a startling offer on the best Spreader in the world—Galloway's New No. 5, with Mandt's New Gear. A gift of as good as $50 to these men—be one of them! Why hand over $50 extra to a dealer or agent when you can buy *direct* from Galloway? Keep the money in your pocket and get a *better* machine. My 45-55 bushel Spreader, $39.50—complete with trucks, $64.75—sent on 30 to 60 days' free trial—money back if it doesn't satisfy you.

Don't Wait! Get quick action on this wonderful offer. Be one of the first from your township. I have the world beaten on Manure Spreaders—Mandt's famous new gear and eleven special patented features that cost you not one penny extra. My prices to you are less than your dealer can buy Spreaders for spot cash in car load lots! Send your name and address on postal today, and my big offer will go to you at once.

WILLIAM GALLOWAY, President
William Galloway Company, 1039AB Galloway Station, Waterloo, Iowa



F. O. B. Waterloo With Mandt's New Gear

WHY NOT RAISE YOUR OWN FLOWERS FOR

Decoration Day

YOU CAN DO IT for the PEONY will produce them for you, and there is no flower to compare with this superb bloom. Plant a dozen now. They will supply you with great armfuls of glorious, fragrant blooms for Decoration Day.

We have ten acres of the finest varieties. Choice named White, Pink and Red Peonies, $2 per dozen. Choice named Phlox and Iris, assorted colors, $1 per dozen. Other hardy flowers at like figures.

We have a complete line of Flowering Shrubbery, Shade Trees, Evergreens, Fruits. Complete illustrated catalogue upon request.

C.S. Harrison's Select Nurs. Co.
YORK, NEBRASKA

STOKES' SEEDS

"Seed Catalog Time"

is here and I have a beauty with colored illustrations and a free proposition with cash prizes which you will be interested in.

Send for a copy today—free if you mention The Fruit-Grower.

WALTER P. STOKES, Seedsman
Dept. 30. Philadelphia

Sand Vetch The Hardiest Forage Crop and Greatest Fertilizer

Our hardy Sand Vetch will grow anywhere, regardless of heat, cold or drought. Especially good for sandy, dry land. Crops range from 6 to 10 tons per acre. Excellent feed for growing animals or milch cows; 25 per cent more valuable than any other fertilizer. Write for free prices on Sand Vetch, Sweet Clover and Alfalfa.

Griswold Seed Co., 137 South Tenth Street, Lincoln, Neb.

COW PEAS and SOY BEANS As feed: unexcelled, rich in protein. As fertilizer: stores nitrogen. As crops: big yielders. These legumes fit into all systems of farming. Write us today about seed, and ask for our booklet on cow peas and soy beans.

HICKORY SEED CO., 114 Trade St., Hickory, N. C.

$100 Worth of Seeds Free

With First Order from New Customers

The biggest, best, most liberal seed offer ever made. We want to introduce our Guaranteed, Sure-to-Grow Seed in your neighborhood and convince you of their superiority. We want you for a customer this year, for a trial makes a permanent customer. Write today for our Free Offer and 76-page catalog of Field & Garden Seeds.

A. A. Berry Seed Co., Box 465 Clarinda, Iowa.

FRUIT PACKAGES

Climax Baskets for Peaches, Grapes, or Melons. Hallock and Leslie Berry Boxes and Shipping Crates. Bushel baskets, crates and boxes. Write for winter prices.

Wisconsin Fruit Package Co., Crandon, Wis.

BERRY BOXES

CRATES AND BASKETS, CHERRY, PLUM AND APPLE BOXES, CLIMAX BASKETS, BIG OR SMALL —AS YOU LIKE THEM.

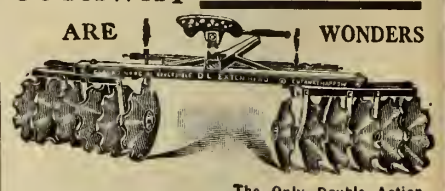
We have the best equipped mill in the Northwest, and manufacture the Ewald Patent Folding Berry Boxes, the only folding berry box made of wood veneer that gives satisfaction. A liberal discount on early orders. A postal brings our Price List.

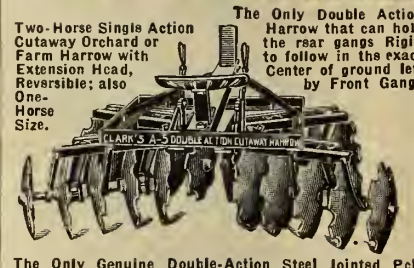
FRUIT PACKAGE CO. CUMBERLAND, WIS.

Wright Fruit Package Co.
EXCELSIOR, MINNESOTA

Handles the famous Ewald Folding Berry Box, the only folding box without a fault. We have everything in the fruit package line. Will ship you 100 boxes or a carload. Our material is the best; our prices are right. We ship from West Minneapolis, Minn.

CLARK'S CUTAWAY HARROWS ARE WONDERS





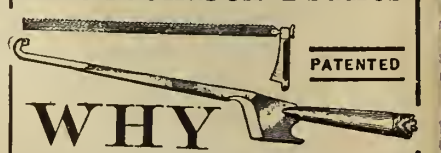
Two-Horse Single Action Cutaway Orchard or Farm Harrow with Extension Head, Reversible; also One-Horse Size.

The Only Double Action Harrow that can hold the rear gangs Rigid to follow in the exact Center of ground left by Front Gangs

The Only Genuine Double-Action Steel Jointed Pole Cutaway Harrows. (Can be Extended.) For orchard or farm. Send for catalogue—Fruit Growers Supplies.

E. G. MENDENHALL,
General Distributing Agent for the West
Box 360. KINMUNDY, ILLINOIS

The Monarch Pruner



PATENTED

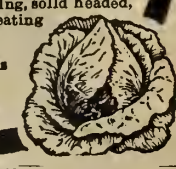
WHY bruise the limb, strip the bark and injure the tree, when you can avoid it all by using the MONARCH? Now is the time to investigate this ideal pruner. A simple, durable and speedy tool, with keen cutting edge and detachable saw. Cuts largest limb or smallest twig. Will last a lifetime. Satisfaction guaranteed. Write us for price and circular.

The Monarch Pruner & Mfg. Co, Inc.
Spokane Washington

FRESH CABBAGE SEED

My elegant New Book of Buckbee's Famous "Full of Life" Seeds, tells all about the best varieties of Money Making Cabbage; you should have this wonderful instructive Catalogue. I will mail it WRITE TODAY **FREE** Mention this Paper together with a liberal sample package of BUCKBEE'S GREENBACK CABBAGE the new, early, big yielding, solid headed, long keeping, World Beating Variety.

H W BUCKBEE,
Rockford Seed Farms
Farm 362
ROCKFORD, ILLINOIS



PLENTY OF DOLLARS if you grow pedigreed fruit. See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."
WINFIELD NURSERIES

Get Our Half Price Offer

On The CAPITAL Gasoline Engines

Sizes from 2 horse power to 140 horse power. Made without packing. Big Catalogue.

C. H. A. DISSINGER & BRO., Lancaster, Pa.

Easy, Economic Spraying WITH THE **American Wonder Sprayer** HAND OR POWER

Have you seen our literature? If not, write today. We have something new you should know about. Agents wanted.

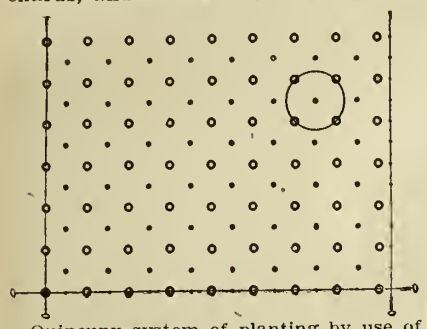
FOSTER STEEL STANCHION CO.
925 Insurance Bldg., Rochester, N.Y.

PRUNING Book by Professor Bailey. Tells everything about pruning. You need it. Price $1.50. The Fruit-Grower, St. Joseph, Mo.

thirty feet as the distance, and with the square system you will have 48 trees, the quincunx 84, and the hexagonal 55; or, if you want it in percentages, the quincunx will give you 75 per cent more than the square, and the hexagonal 15 per cent more than the square.

Laying Out the Field.

There are several ways by which the trees can be gotten into straight rows. I will mention two which are very satisfactory. One is to set every third or fourth row of stakes with a compass, then stick the rows between by stretching a chain across and stick in pegs to mark the places for the trees. Land can be staked off by this means for about 50 cents per acre. The other system is the wire. We have used the three wires here in the Lewiston Orchards, and have set 5,500 acres with



Quincunx system of planting by use of three wires. "A," side wires; "B," cross or planting wire. Buttons 15 feet apart.

excellent results. Our wires are what is known as wire rope or cables, built on the same plan as those that are used for clothes lines, only larger. The markers are made out of a small strip of tin, bent around the wire, then a small stove bolt, put through the ends, thus forming a clamp. If the wire stretches these markers can be readjusted. We go over our wires every few days and adjust all buttons or markers. In making the marker, have as few sharp edges as possible.

In making up our wires we used a thirty-foot distance, and as our planting was on the square, with a filler in the center our two side lines were spaced fifteen feet apart. The cross line in this case also had buttons spaced fifteen feet apart. The ends of the wires were provided with rings for the anchors, which consisted of an iron rod one inch in thickness and three feet long. Our land is cut up into five-acre tracts, with a stake at each corner. A wire is stretched down each side of a lot, which is 620 feet long, and the cross wire is stretched across one end fifteen feet from the proposed fence line.

We use a man for each thirty-foot button. He plants his tree; the wire is shifted to the next button, which is fifteen feet, and the man shifts over to the fifteen-foot button on the cross wire. This is the filler. When the wire is moved again, the planter shifts back to the thirty-foot buttons. We find this a rapid, accurate method. On good ground a crew of eleven men and a foreman have set as high as twenty acres per day. The rows are absolutely straight. We have set as high as 640 acres in a single block, and the rows were a mile in length, also crossing quite large hollows, yet these rows could not have been run across the field by a surveyor with any more accuracy.

If you wish to use the hexagonal system, the same wires can be used, but the position of the buttons will have to be changed on the cross line; that is, if you are going to use the thirty-foot distance. If you use another distance all the buttons will have to be changed. For the thirty-foot distances set the buttons on the cross wire twenty-five feet apart. In planting, the crew will set the first tree at the fifty-foot marks on the cross line, then when the shift to the next button on the side lines is made, the crew will plant at the twenty-five foot buttons.

This gives a perfect hexagon. The method for finding the distances for the buttons is very simple. Every three trees forms an equilateral triangle, as A, B, C, in figure 3. The distance from A to X is exactly one-half that between A and B; therefore, distance A to X equals distance buttons should be spaced on side lines. The distance X C is the distance between the buttons on the cross lines. If you do not wish to purchase the woven wire cable, a common grape wire will answer very well.

When ready to prepare the wires, stretch them as taught as possible, on a level piece of ground, and use an accurate measure for locating the buttons. The object is to have all wires uniform.

Fillers.

Will it pay to put in fillers? This question can be answered, yes, and no. It depends on the kind of filler. We put in fillers to increase the returns for the first few years. Sometimes the returns are reduced by an injudicious use of fillers. In sections where the peach will thrive, this fruit is used. This is a good tree for some localities, but even in some peach sections it is not advisable to use it. I have seen this filler removed after the fifth year because it did not pay. The reason was choice of wrong varieties. These persons planted early varieties and when they came into bearing, the crop ripened just two weeks later than the same variety on a lower level not three miles distant. If you are going to use the peach, it will be well to go into the matter pretty thoroughly. In almost any section it is best to stick to the shippers. When you have made your choice of variety, don't be a hog and plant two fillers to each permanent tree. I have seen growers fall down just as hard on this point as on the wrong variety.

The apple or pear makes a good filler. We are using these two kinds of fruit to the exclusion of all others. Select varieties that come into fruiting at an early age. The Jonathan, Rome Beauty and Winesap are excellent for this purpose. We set our trees 30x30 feet, with the filler in the center. This will allow us to make use of the filler for twelve to fifteen years before it will have to be removed. For pears, we use Bartlett, Winter Nellis and d'Anjou.

If one wishes quick returns the small fruits are the best fillers, and especially is this true of the strawberry. If you are going to use this fruit, don't, by all means, plant it closer than five feet of the young tree. As the trees increase in size, widen the cultivated space on each side of the tree.

As I have said before, the filler is used for the purpose of increasing the returns from the orchard for the first few years, and just as soon as the permanent trees begin to need the space the filler must come out. Your business is to produce a high-grade orchard, and nothing must be allowed to check its growth.

We use the filler with either the square, hexagonal or quincunx systems. When the latter system is used, plant the varieties you select 20x20, and when the trees begin to crowd, chop out as shown in illustration 3.

Fall or Spring Planting.

There is considerable discussion as to which is the best time for setting trees. I have had good success with both fall and spring planting. This year our fall planting was somewhat better than the spring plant. Both were done under the same foremen and exactly the same soil conditions. The trees planted in the fall have at least one month the start of those planted in the spring. Part of this start is due to the warm soil in the fall, and part to the soil becoming well settled around the roots before spring. Where the winters are very severe planting must be put off until spring.

Good nursery stock is very essential to a good growth of tree. Don't buy the largest tree you can find. You will not get a good stand with this kind of a tree, for the simple reason that all the feeding roots are cut off when the tree is dug. On the other hand, don't buy a small tree, just because it is cheap. The stocky, medium-sized one-year-old tree is the best. You can bring this kind of a tree up in the way that it should go. If your stock arrives before the soil is ready, dig a

Burpee's

"The Leading American Seed Catalog"

Is now ready for mailing. The first edition of more than four hundred thousand copies will soon be distributed. As usual it is sent unsolicited only to "Customers of Record." We shall be pleased, however, to mail a copy immediately upon application (a postal card will do) to every one who appreciates QUALITY IN SEEDS.

This SILENT SALESMAN (and we employ no "talking" salesmen to solicit orders), tells the plain truth about The Best Seeds That Can Be Grown. Besides colored plates of Burpee-Specialties, this bright book of 178 pages shows hundreds of the choicest vegetables and most beautiful flowers, illustrated from photographs. It is almost indispensable to all who garden either for pleasure or profit.

The "HOUSE OF BURPEE" is known the world over not only as EXPERTS IN SWEET PEAS, but also as SEED SPECIALISTS. No other American firm has ever introduced so many novelties of sterling value—and no other growers supply seeds annually direct to so many planters. It might be to your interest to read THE BURPEE ANNUAL. It will cost you only one cent for a post-card to send us your address, and you are under no obligation to buy. We never annoy applicants with "follow up" letters!

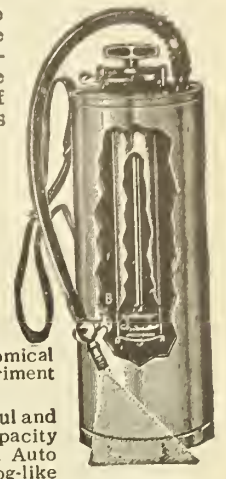
Shall we mail you a copy?
If so, kindly write today.

W. ATLEE BURPEE & CO.
Burpee Buildings Philadelphia

Easier And Quicker Work Surer Results At Less Cost With Brown's Sprayers

Don't Spray Till You Know The New Way

Let us send you free, our complete Spraying Guide, telling about the newest and surest ways of spraying—the best results, quickly and at the lowest cost. Follow the example of 300,000 gardeners and fruit growers who have proved that



Brown's Auto Spray

is the most thorough, durable, and economical sprayer made. Endorsed by Experiment Stations everywhere.

Auto Spray No. 1 is the most powerful and efficient hand power spray made. Capacity 4 gallons. Fitted with Brown's patent Auto Pop Nozzle, it forces a fine mist or fog-like spray or heavy stream to every part of trees, vines and plant. Starts and stops instantly—no waste of solution between trees or plants.

Brown's Auto Spray Gasoline Power Outfits are equipped with a non-heating, light, compact engine. Thoroughly reliable and efficient for very heavy work. Simple, economical, durable and fast working. Pump made of brass, can't rust or corrode—capacity from 50 to 250 gallons. Also large assortment of Traction Power Outfits for all purposes.

Brown's Non-clog Atomic Nozzle for large sprayers, throws powerful stream or fine spray. Keeps working day after day without cleaning—never clogs—a big money maker. Best for all field and orchard work. All Auto Sprays sold on guarantee of satisfaction or money back.

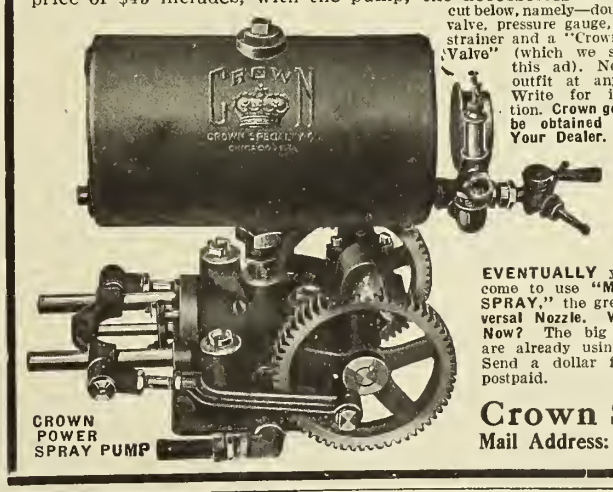
Free Book Brown issues the best Spraying Guide to follow. Write for it whether you want a new sprayer at once or not. Our quality and prices speak for themselves.

THE E.C. BROWN CO., 29 Jay St., Rochester, N. Y

A Power Spray Pump for $45.00

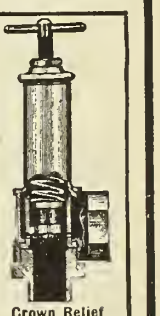
Just What You Have Been Looking For But At Least $20.00 LOWER in Price THAN YOU Expected to Pay

A high grade, large capacity pump, which will maintain a steady pressure all day long at any point up to 300 pounds. Can be run by any make of engine. Our special engine, gear-connected to pump on cast-iron bed-plate, furnished when desired, at correspondingly low price. With this complete outfit you can run 4 leads of hose at 300 pounds pressure continuously. The price of $45 includes, with the pump, the accessories shown in cut below, namely—double hose valve, pressure gauge, suction strainer and a "Crown Relief Valve" (which we show in this ad). No better outfit at any price. Write for information. **Crown goods can be obtained through Your Dealer.**



CROWN POWER SPRAY PUMP

EVENTUALLY you will come to use **"MASS-O-SPRAY,"** the great **Universal Nozzle. Why not Now?** The big growers are already using them. Send a dollar for two, postpaid.



Crown Relief Valve
The only Perfect Pressure Regulator in the market. It is a new invention on an entirely new principle. It costs no more, but it will outlast 4 of the old type, and you have none of the usual troubles. At least write a line and find out about this and our other specialties.

Crown Specialty Co.
Mail Address: Box 297, CHICAGO

trench and heel the trees in. Cut the bundles and spread out the roots so that the soil will sift down in among them. Tramp the soil in well, so that the trees will not dry out. If you cannot get your trees in until late, they should be heeled in where the sun will not shine on them. After a tree starts into growth, then planted, it will not give as good a growth as a perfectly dormant tree. Where the trees are to remain in the pit all winter, at least half their length should be covered. We put 150,000 trees into our pits last fall and covered to within a foot of the top. The trees came out of the pits in good condition. Of course, such deep covering will not be necessary in very mild winters; that is, where the temperature does not go much below 20 degrees.

When everything is ready for planting, the trees are taken out of the pit —that is, as many as needed for a day's or half day's planting, and loaded into the planting wagon. Our wagons are of the low iron-wheeled type, with a six-inch bed. A layer of straw is put in, then the trees. The whole is covered with old sacks, then thoroughly watered. A wagon cover is thrown

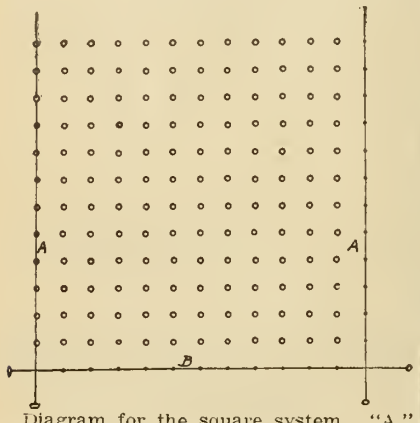


Diagram for the square system. "A," side wires; "B," planting wire. Trees set at the buttons on the wires.

over the bed and the wagon is ready for the field. We find that this keeps the trees in excellent condition.

The wires are stretched and a hole dug, so that the button is over its center. Be sure and get the hole large enough so that there will be no danger of cramping the roots, and deep enough so that the tree can be set at least three inches deeper than it stood in the nursery row. Take a tree out of the wagon and prune off all broken roots, cut back all ragged ends, and all long roots, to eight or ten inches. Place the tree in the hole, so that the body is in line with the button, and fill in with the top soil until the roots are covered, then get in the hole with both feet and tramp the soil down firmly. Fill up to the top of the hole and tramp again. Throw on a few shovels of loose soil to prevent the soil baking around the tree. When planting with a wire, always keep behind the wire.

When the planting is done in the spring, cut the tree back as soon as set, to twelve to eighteen inches. Peach trees are cut to the first height, and apples, pears and crab apples to the latter. If the planting is done in the fall, the trees need not be headed back until towards spring.

There is one serious drawback to fall planting, and that is the rabbits. The jackrabbit is the worst of all. We have used protection, but with no degree of success. The method that has been fairly successful was to put a man out on the tract with a dog and gun. In this way we kept them pretty well thinned out. In some sections the orchardists build rabbit-proof fences. However, we do not feel the necessity of going to that expense.

Idaho. CHAS A. COLE.

An Amateur Succeeded.

I notice in the November issue of The Fruit-Grower on page 32, an article from an Indiana minister that interests me very much, not because it is written by a Hoosier, and not because he is a minister, but because he is interested in reviving apple culture in Indiana, and he is a fruit grower of about my caliber. I want to say here that while we small fellows do not make as much profit or fuss as the larger fellows, we can have just as much pleasure—and it is a pleasure, too—and obtain as good results from cultivation and spraying as he can.

I became interested in reclaiming old trees in the winter of 1908 and 1909. I have an orchard of about 100 trees of different varieties, about fifteen years old, set out for a home orchard. It never had been sprayed previous to 1909, and for several years had not yielded enough apples for family use. My first step was to subscribe for The Fruit-Grower. I then procured a narrow-bladed saw and a pair of hand pruners, and in February started in to prune according to my own ideas. I think I cut out about five carloads of brush. I picked out twelve trees to spray, for a trial. I next procured a bucket pump, an oyster pail, some commercial Bordeaux and arsenate of lead. I attached about twelve feet of hose to the pump and lashed the hose to a sapling. I had never heard of an extension rod. I then fastened a large box to the old farm sled and waited for the time for the petals to fall from the bloom. I then gave the twelve trees three applications about three weeks apart, omitting the Bordeaux the two last times.

I never saw the orchard again until the latter part of September, when the summer Bellflowers were ripe. I never saw anything that surprised me as much as those twelve trees. I thought they excelled any picture I ever saw. The Rambos and Winesaps were the finest I ever saw.

I did not make any count, but I know that over 90 per cent were perfect, and from that time I have become what my neighbors call a "chronic spraying crank."

In 1910 I used Pyrox on all my trees with good result, and this last spring used commercial lime-sulphur and arsenate of lead, but we had a cold, wet, late spring, which ruined our crop. I doubt if it could have been saved with heaters, as we had a sleet just before the trees bloomed. But I am going to try to have a banner crop next year. I have used a Myers barrel pump the last two years and think it a good one. What little I know of this work I have learned from The Fruit-Grower.

Indiana. FRANK D. SMITH.

What Fillers to Use.

We are often asked what to plant in the new orchard that will bring a return the quickest. Many suggest planting extra trees to be cut out when they begin to crowd. That is good, but I have never yet heard of anyone who had the nerve to do it. The filler trees are always left.

For fillers, it is always best to leave out the extra trees and use some other crop, either an annual, or some kind that is short-lived. Corn, cotton, potatoes, cabbage, onions, tomatoes, berries of all kinds, and a host of other vegetables or small fruits make ideal fillers. They do not crowd the permanent trees; they must be cultivated, irrigated and handled in such a manner that makes their culture ideal for the orchard; then such crops bring in a great deal more money, at the end of five years, when fillers should be removed, than can possibly be obtained in the same length of time from tree fillers.

Bordeaux Mixture.

Blue vitriol	4 pounds
Quicklime	4 pounds
Water	50 gallons

Dissolve the blue vitriol in a wooden bucket of hot water. Slake the lime with enough water to make a thin paste, then add to half the required amount of water. Add the blue vitriol water to the other half, then pour the two, at the same time, into the spray tank, and it is ready to use. This is the standard fungicide. Paris green or arsenate of lead may be used if it is desired.

You Can Get

A Price List of Call's Nurseries, Perry, O., for the asking. They make a specialty of dealing direct with their customers, and send out the finest Fruit Trees that can be grown.

Do You Know the Difference Between MAKING Money AND SAVING Money ?

Here is one difference between the two:

You make money when you read The Fruit-Grower and are helped by its articles.

You save money when you renew for several years at a time and get special rate: Three years for $2; five years for $3; ten years for $5.

There can be no question that anyone who reads The Fruit-Grower regularly makes money by doing so. No one person knows all there is to know concerning horticulture; new things are developing all the time, and the man who waits until he learns everything from his own experience, dies before he has learned much about fruit-growing. And he has wasted years of labor and thousands of dollars in getting the experience.

Yes, friends, you need the benefit of the experience of others, and you get it in The Fruit-Grower. In this issue, for instance, are several articles from subscribers who confess that they have learned how to spray their fruit trees and to save their crops by reading the articles in The Fruit-Grower. They find that they cannot do without the help they get from our articles. Read these appreciative letters lately received—and we can quote thousands just like them:

The Fruit-Grower is the best magazine of its class. I have tried nearly all of them.—James A. Wiley, Ohio.

I cannot do without The Fruit-Grower, and gladly renew my subscription to your journal—a journal that no American farmer should be without. —C. W. Hoffman, Nebraska.

The Fruit-Grower is without a peer when it comes to a good, live, wide-awake fruit magazine.—Dr. W. J. Keyes, Ohio.

To say I am interested in the contents of The Fruit-Grower is putting it mildly. It's the best paper in all its details of any that it has been my good fortune to read. It handles all subjects pertaining to fruit-growing in a masterly and convincing way. Why should I not subscribe?—John F. Parks, Rhode Island.

I have been much pleased with The Fruit-Grower and helped by the information gained from it. This being so, I gladly renew my subscription for five years and inclose $3.—Charles M. Webb, Illinois.

I consider The Fruit-Grower worth $50 to me for the year past, in the sale of my apple crop.—M. W. King, New York.

I expect to be a subscriber to The Fruit-Grower as long as I live, if it is kept up to its present high standard of excellence.—E. T. Daniels, Okla.

The Fruit-Grower is most valuable, and the only regret I have is that I did not subscribe for it long ago.—W. M. Buddecke, New York.

Our subscription list of fruit and garden magazines runs up to $30 a year, but if we were forced to cut the list to one paper, we would pick The Fruit-Grower as that one, without a moment's hesitation.—Mrs. John Rawley, Oregon.

These folks have all been helped in the past, and The Fruit-Grower will help them, and it will help you, still more in the future. Every effort possible will be made to make The Fruit-Grower of greatest help to its subscribers. If we don't publish the information you want, ask questions.

Now, about saving money:

You want The Fruit-Grower to continue its visits to your home. You want the benefit of its helpful articles. You are going to renew your subscription.

Now, the thing to do is to save money by renewing for several years at once. You save money, and you save annoyance. You can feel secure in knowing that The Fruit-Grower will continue its visits, and it will be off your mind.

Here's the money-saving schedule:

Three Years for . . $2.00
Five Years for . . . $3.00
Ten Years for . . . $5.00

If you send $3 for 5 years or $5 for 10 years, we will send you free, postpaid, a copy of The Fruit-Growers Guide-Book, Cloth Bound. This is the most up-to-date book on fruit-growing, contains nearly 300 pages, nicely illustrated and thousands of copies have been sold at the regular price, $1.00 per copy.

A lot of our subscribers are paid ten years in advance. Thousands are paid three years ahead. Get in line with them by sending your long-time renewal at once. We've a Brother Jonathan Calendar waiting for you; it's a good one —ask for it. We want Brother Jonathan's smile to make 1912 the best year you have ever known. Renew your subscription before the calendars are all gone.

THE FRUIT-GROWER
St. Joseph, Missouri

P. S.—Don't forget our great Gardening and Poultry issue for February. Send us report of your gardening experience. We will pay prizes for best gardening or poultry photographs. Send yours at once.

"Moon Farming"

There is one question I have always dodged. I don't want to get started discussing it, for it is pretty sure to start an argument.

This question is as to "planting by the moon." I suppose I have had it put to me a thousand times in the last two years. The last time is by a Fruit-Grower reader out in Washington. He says that a man from Ohio who came to work for him and who claimed to be an authority on farming, told him that the only time to plant potatoes was in the dark of the moon when the sign was in the feet. He tried it and had poor success and he was rather beginning to doubt the word of the man from Ohio. Also he followed the moon sign on tomatoes and lost out on them, too.

Also he wanted to know what were the best black seeded melons, both for first early and for main crop. Here is my answer to him:

I really don't believe the moon has any effect whatever on the potato crop. My experience agrees very much with your own. Of course, it seems hard to understand why sometimes a crop will set well and other times fail utterly, but I am sure the explanation is in the soil or the season and not in the signs of the moon.

My plan for planting potatoes has been to plant just as early in the season as I could possibly get the ground ready. I have planted before now when there was still frost in the ground. Water melons, I aim to plant when it is warm enough so that the corn is beginning to come through the ground. This generally means about a week after corn planting time.

In black seeded water melons, I would advise Cole's Early for first early, and followed up by Sweetheart for main crop. But really I wouldn't let the color of the seeds interfere with the growing of some high quality variety. Most of the high quality main crop melons are included in the Kleckley class, which are all white seeded. I would advise, by all means, either one of the Kleckleys, Tom Watson or Alabama Sweet, even if they are white seeded. Your customers will soon learn the difference and tal e the white seeded melons instead of black.

Tomatoes in Oklahoma.

There seems to be a great deal of trouble in Oklahoma and Texas about getting tomatoes to set on well. Some people there tell about getting good crops, but more tell of lots of vine and bloom but no tomatoes. Here is a letter from Edmond Barnes, Mt. Park, Okla., and my answer:

"Will take the liberty to ask you a few questions concerning tomatoes. We have an irrigation system here; we had all the water we needed, but our tomatoes just wouldn't set. I planted Spark's Earliana, Truckers' Favorite and Matchless. The Matchless did tolerably well, but not a fifth as well as they should have done. All of them bloomed well. I will be pleased very much if you will tell me of a variety that will stand the hot winds and dry weather which we are accustomed to having here. I want one early and two late varieties. Well, people in this section of the country are looking forward to a good season next year. We have had about a two-inch rain and then about six inches of snow on top of that right recently, so here is hoping you a Merry Xmas and a Happy New Year."

The trouble with your tomatoes not setting well was in the season and not in the seed, and not very much in the variety. In hot, dry weather, especially if the ground bakes hard, tomatoes are almost certain to drop their bloom and fail to set. Customers in other parts of Oklahoma have had success by keeping the ground constantly stirred and cultivated or mulched. Either plan would keep the ground from baking and would keep the vine constantly thrifty and growing.

The Early June has been the most successful of any in that country. It is somewhat similar to Earliana, but better. Most people like New Stone best for main crop. It is very similar to Matchless, but I like it a little better, although it would be hard to tell them apart. For a purple tomato, I notice the Southern shippers, especially in Texas, always use the Acme or Beauty, and it may be that these varieties stand dry weather better than others. I do not know that they do, but I am simply guessing at it from the fact that the Texas men always use them.

Try at least a part of your patch, keeping it thoroughly stirred on top either with the hoe or the cultivator, and try another strip, mulching it so as to keep the ground cool and moist.

Cow Feed in the Mountains.

Henry E. Daws, of Colorado, writes me that he wants to grow feed for two cows this summer and has only two acres to spare for that purpose. He has no alfalfa and no pasture. He wants to get feed for the cows as soon as possible and something that will make lots of good milk. Asks about rape as cow feed. Here is my answer:

I would not advise you to grow dwarf Essex rape for your cows. The trouble is it would make the milk taste, and the cream would taste even worse than the milk, and I understand that you want to sell the cream. Rape has the same taste that cabbage does, and you know how cabbage and turnips will make milk taste. It is all right for young stock, but no good at all for milk cows.

My advice would be to plant a mixture of peas and oats, or possibly peas and barley. The peas to use are not the southern cowpeas, but the northern or Canadian field peas, the round, smooth seeded, white kind that can be sown very early in the spring the same as barley and oats, and, in fact, the two should be sown together. Use about one hundred pounds of each per acre.

When you are sowing the peas and the barley or oats the main thing to watch out for is to get the peas deep enough. Some people sow the peas first and plow or cultivate them in so as to get them in good and deep, and then sow the barley or oats and harrow them in so they will be shallow.

This mixture can be pastured all right, but I believe it would be better to keep the cows in a lot and cut the grain, or rather the grain and peas mixed and throw over to them. The trouble is if you let them pasture it they will break it down and waste about one-half of it, but by cutting it and throwing it over the fence you can save every bit of it. This mixture should be ready to cut by about the middle of June, possibly a little earlier. You should begin cutting it when the peas begin to bloom. It will last until probably the middle of August. From then on you would need to have some other feed. Possibly, however, there would be more than the cows could eat while it was green and you could cure it as hay.

I would suggest that you set aside about one-fourth acre and plant it to Mammoth long red mangel beets. These would be ready to begin using by about September 1st or possibly sooner and would make a world of feed all fall and all winter. One-fourth acre should make about ten tons of beets which would feed two cows practically all winter. You would need three pounds of seed for one-fourth acre and it would cost you about 35c per pound.

What to Grow For Early Market.

S. I. McElhoes, of Oklahoma, writes me that he has a few acres of good ground near a good market town and wants to know what to grow for early market that will make the most money for him. He is new to the trucking business, but is going into it to win. His case is exactly similar to dozens of others who write to me and the same advice will apply to all.

It would be a hard matter to tell you just what and how much you ought to plant, for it depends entirely on your market. You must grow the things that pay best in your market and that are in the most demand. With a city the size of yours it would seem that there would be plenty of demand for all you could raise of almost anything, so you would not need to worry about having a surplus. As a general rule, it pays to plant very heavily of early radishes, onion sets, early peas, early beets and early cabbage. Radishes take no work at all, and if you don't have sale for them, you can plow them up and plant another crop. The onion sets, if you do not sell them for green bunching onions, will bottom down and make big, dry onions to sell in June or July. But the onions, early peas, early beets, early cabbage and early tomatoes, always pay enormously and are always in demand. If you get in the market early with them, you will never have enough to supply the demand. The principal thing with some of these crops is to get them started very very early and put in the ground just as early as possible. I would suggest that you order the little book, "A Fortune in Two Acres." Also, it might pay you to get other books on gardening.

How to Make $400.00 Out of an Acre.

Can $400 per acre be made at trucking? Can you do it? Sure! Chas. Nelson, of Arkansas, writes me that he has entered a contect and that he must plan some way to make his acre of land produce $400. He wants to know what I would advise him to plant. He suggests sweet potatoes. Here's my advice:

I certainly would be glad to help you in any way I can, but it is a hard matter to make four hundred dollars per acre. There are lots of us that would be glad to do this if we were sure of it. Sweet potatoes ought to do remarkably well in your locality, and if you have a good market, you might be able to make this much out of them, but it would have to be a mighty good crop and a mighty good market.

If you are allowed to make two or three crops on the ground, it would be easy to make the four hundred dollars. I would suggest that you put in a crop of early garden of some sort, such as radishes, peas and beans, and get them off in time to make a crop of sweet potatoes, then plant a fall garden of some kind. Of course, this would be on the supposition that you have a market for garden stuff. You could easily get the crop off the ground in time to plant sweet potatoes. The land should be broke out this fall and well worked.

The Seed Situation.

There is going to be a lot of scrambling for seed in some lines this spring. Seed peas, for instance: I guess there never was a time in the history of the seed trade when peas were so scarce. It is not a question of price, but of getting peas at all. Gradus and Thos. Laxton for instance. I don't suppose there is a seedsman in the United States who could or would supply a full bushel of either one. Lots of other sorts are as bad.

Some kinds of onions are scarce, too. Globe Danvers, Ohio Globe, White Globe and Red Globe are all scarce.

Carrots are almost out of the market. Beets are scarce and high. French celery, especially Golden Self Blanching, is almost prohibitive in price. One seedsman recently quoted it at $28.00 a pound.

So my advice would be to get your order in early, especially on these items. You ought to order early anyway, and get the seed in time to test it before planting.

HENRY FIELD.

Shenandoah, Iowa.

In the Spring You Should See

Morrisania

Only about ten or twelve 10-acre tracts at Morrisania remain to be sold in 1912, and they will surely be sold if those who are interested will visit Morrisania and make personal inspection. If you want a tract of high-grade fruit land, or if some member of your family needs the benefit of Colorado's health-giving climate, arrange to see Morrisania soon.

At Morrisania all kinds of fruits are in bearing to show what can be grown; everything has been tested and we know just what can be grown. Water supply has been tested for twenty-five years, and there is no uncertainty as to quantity or quality of water for domestic use or irrigation.

We have about sixty acres of apples in bearing, twenty-five acres of prunes and five acres of peaches; with apricots, cherries, plums of all kinds, etc., for home use. Nearly 200 acres of young orchard have been planted and more trees will be set in Spring of 1912.

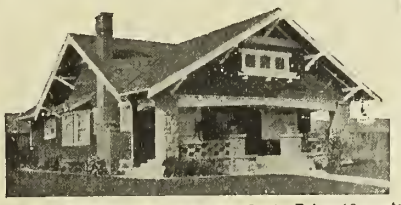
Now is the time to buy, if you want some of this fine land. When the remaining tracts are sold, no more land at Morrisania is available.

Write for illustrated booklet, and if desired we will furnish names of those who have bought at Morrisania, and you can ask them what they think of the place. Address

Morrisania Land & Orchard Co.

Box 1277 ST. JOSEPH, MO.

STILLWELL CALIFORNIA BUNGALOW BOOKS



PACIFIC COAST HOMES combine individuality of design with artistic and economical construction. Western Homes are of absorbing interest in exteriors and plans. Genuine Bungalows especially appeal to everyone, and are a popular and profitable form of investment. Our two books contain plans, descriptions and cost estimates of low-cost houses, suitable for any climate.

"Representative California Homes."—Price, 50 cts. A book of 50 Bungalows, Cottages and two-story residences of 5 to 10 rooms, costing $1500 to $6000.

"West Coast Bungalows."—Price, 50 cents. A book of 50 one-story, very artistic, inexpensive Bungalows of 4 to 6 rooms, costing $500 to $2,000.

BUILDER'S SUPPLEMENT NO. 1, Price 10 cents. Free with Orders for two books. Remittances of coin or money orders preferred.

E. W. STILLWELL & CO., Archts., 2170 Henne Bldg., 122 Third St., LOS ANGELES, CALIFORNIA

FOR ALL KINDS OF SMALL PLANTS! RAIN, SUN AND WIND PROOF.

Reap what you plant! Do not take unnecessary chances, when you can avoid same, by helping with a protector. Profit by the gain in maturity. Remember the "Early Bird catches the Worm." Full information and sample sent on receipt of 5cts. Only by NATIONAL PAPER BOX CO., Kansas City, Mo.

ROSES of NEW CASTLE

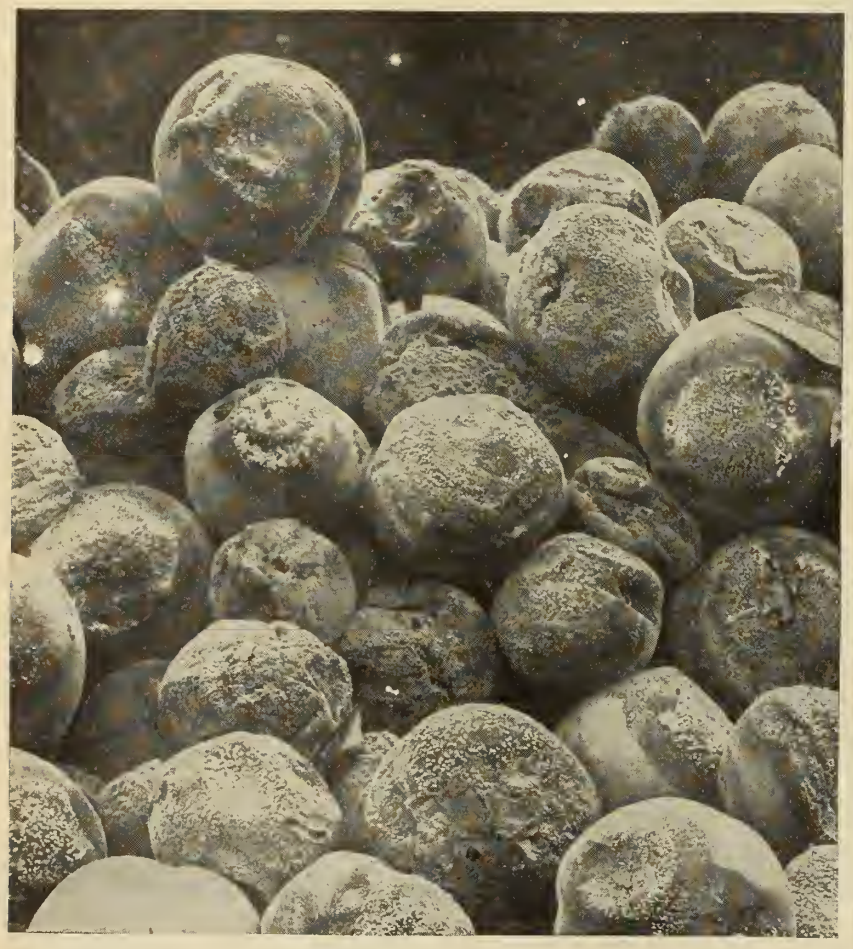
is the greatest book on the culture of roses and other plants ever published. 86 pages, exquisitely illustrated in natural colors. Gives lifetime experience. Tells everything about rose culture. Describes wonderful Hoosier Roses, hardy plants, bulbs, seeds, etc., world's best for home planting—FREE. Write now.

HELLER BROS. CO., Box 127 New Castle, Ind.

BROWN ROT ON STONE FRUITS

The most serious disease of stone fruits is brown rot, which attacks the fruit at about the time it is approaching maturity. It is caused by a fungus that lives over winter on the old mummied peaches lying on the ground, and the strange part of it is, that burying these old, dried up and diseased peaches only helps to mature the fungus tissue that is within them, and enable them to send up through several inches of soil a peculiar toadstool like body from which great quantities of spores are given off to spread to peaches on the tree.

Brown rot is far more troublesome in damp weather than in dry weather, and possibly it is because of the dry air that this disease is not troublesome in the peach districts of the western states. Because of the very dry weather that prevailed all over the country this last summer brown rot was very scarce in those sections which were favored by a crop of peaches. But in ordinary years it is always in evidence on peaches, plums, (especially European and Japanese varieties of plums) cherries, and in rare instances on some other kinds of fruits.



BROWN ROT ON PEACHES. (Photo from U. S. Dept. Agriculture.)

The disease is most apparent on the fruits themselves, although the fungus extends into the twigs and causes them to blight. Its first appearance on a fruit is as a small brown spot. This rapidly enlarges and invests the entire fruit. Before the rot has advanced very far there appears in the center of the brown, rotten area a brownish mould over the surface. This is a mass of spores, which is carried by the wind to other fruits, and the disease is extended. So rapid may this disease spread in warm, moist weather at peach harvest, that fruit which is picked in the afternoon in perfect condition, and packed at once will be half rotten by the time it gets to market, even in a refrigerator car. This disease is the greatest enemy of the peach grower, and until three years ago there was no way known by which it could be successfully combatted.

Professor W. M. Scott, of the United States Department of Agriculture has developed a method of spraying peaches which is entirely effective in keeping this plague in perfect control, and not defoliating the trees. The usual fungicides, Bordeaux in particular, when applied to a peach tree in full foliage will cause the leaves to drop, as the peach foliage is very sensitive to copper sprays. Professor Scott found that an application of self-boiled lime-sulphur could be applied to the peach with absolute safety, and that it would control the rot with certainty. It was found that when arsenate of lead was added to the lime-sulphur, that the fungicidal value of the mixture was increased and rendered more effective. In addition it controlled the plum curculio, which nibbled holes in the skin of the peach and made an opening through which the spores of brown rot quickly gained entrance.

Self-Boiled Lime-Sulphur.

The spray solution is made by placing 8 pounds of freshly slaked lime in a barrel and enough water added to almost cover it. "As soon as the lime begins to slake, add the sulphur, first running it through a sieve to break up the lumps. The mixture should be constantly stirred and more water added as needed to form a thick paste at first and then gradually a thin paste. The lime will supply enough heat to boil the mixture several minutes. As soon as it is well slaked, water should be added to prevent further cooking. It is then ready to be strained into the spray tank and applied." This quantity should be diluted with water to make up to 50 gallons, and may have 2 pounds of arsenate of lead added to it if desired.

In making this material it is well to bear in mind that the boiling must not be allowed to continue too long, for the sulphur will go into solution and chemical changes will take place that will result disastrously to the foliage. Five or ten minutes boiling, before the cold water is poured in is usually sufficient.

Trees must be sprayed with this material at about the time the shucks are beginning to drop. About a month later make another application, including the arsenate of lead to get the curculio. Make a third application about a month before the fruit ripens, omitting the arsenate of lead at this application, as some of the spray will stick to the fruit until it is ripe, and on that account the poison at the last spraying is objectionable.

As this mixture is not a solution, but contains a large amount of solid matter which settles quickly, it is absolutely necessary that it be kept constantly agitated while being applied.

Concentrated lime-sulphur solution, either of the commercial brands or home-made, when greatly diluted are giving good satisfaction in controlling brown rot. Where the commercial brands are used, special directions accompany the material telling the dilution to use. It is well to follow these directions, as the brands of different manufacturers are somewhat different in strength, a dilution suitable for one is not always the most effective dilution for another.

Black Rot of the Grape.

This is one of the most troublesome and destructive diseases of the grape. Its greatest damage comes from the fact that it chiefly attacks the fruit and causes a spotting and rotting of the immature berries, when they are a little more than half grown. But it may also attack the foliage and the canes, producing roundish spots in which the tissue quickly dies and turns brown.

Bunches of grapes which have been destroyed by this disease may hang on the vines over winter, and in this way serve in spreading the disease the following season. On this account, if neglected this disease is capable of producing great damage to a vineyard.

BLACK ROT OF THE GRAPE
(Photo by Mo. Exp. Sta.)

In treating this disease all of the old clusters of dead grapes should be removed from the vines and from the orchard when pruning in early spring. Then the canes should be given a thorough spraying with lime-sulphur, to be followed during the summer with Bordeaux. Lime-sulphur has not been found as desirable for the summer applications, as Bordeaux.

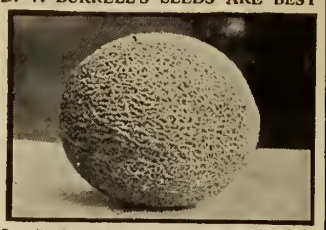
SEED CATALOG FREE

Burrell's Improved Kleckley Sweet Watermelon
The finest watermelon grown. Best quality, surest to produce a crop. It should be in every garden. Catalog lists this and all kinds of Garden Seeds. It's free.

BEST SEEDS, READ WHY

D. V. Burrell's Seeds are Best. Because I plant the best stock seeds skill can select and money can buy. If there is a special strain of Tomato, earlier and better than the rest; if there is a Cantaloupe of better flavor, a better shipper and more resistant to unfavorable climatic conditions which cause rust or other unfavorable results; if there is an earlier Cucumber that is prolific and a good shipper and more profitable to grow; if there is a special strain of Onion for any desirable purpose; if there is a Wax Bean, a Cabbage, a Pepper, or any other variety of vegetable which has been proven better than the rest, I spare no expense necessary to get or produce this seed for my customers. I want you to produce the most profitable crops in your community and then do me the favor to say: "You can get the Best Seeds from D. V. Burrell, Seed Grower, Rocky Ford, Colorado, and they cost but little more than ordinary seeds." This is why thousands of the most successful planters of the United States plant these seeds each year and grow Money Making Market Gardens or Home Gardens which are a source of pleasure and supply a well furnished table. I want you to plant my seeds this year. Catalog free.

SEED CATALOG FREE
D. V. BURRELL'S SEEDS ARE BEST



Burrell's Rust Resistent Rocky Ford Cantaloupe
will produce fine melons where ordinary varieties rust and are a failure. Best sort for market growers. I grow 2000 acres of seeds.

D. V. BURRELL, SEED GROWER, Drawer 23 Rocky Ford, Colorado

Why Do You "Dress Up" When You Go Visiting?

Because you want to look well—you want to present an attractive appearance. Surely you do, and you are right, too.

But how about your printed matter?

How about your catalogue, if you have something to sell?

How about your stationery, if you have letters to write?

Your printed matter represents yourself away from home, and good printed matter pays in more ways than one.

Is your printed matter—your catalogue, your stationery—all that it should be? Does it create a favorable impression with strangers?

Good printing costs but a trifle, as compared with its real value in an advertising way. Poor printing is expensive, even if it costs you nothing—it "looks bad," and looks count for a lot, nowadays.

The Fruit-Grower can print you a neat, attractive catalogue that will sell your stock. We have a fine lot of cuts to illustrate the book. Write us about your catalogue, and let us tell you about our service.

Every reader of The Fruit-Grower needs good stationery. It makes a good impression on one to get a letter written on neatly printed stationery. It creates confidence in the man or firm back of the letter. Let us print some fine letterheads and envelopes for you.

And how about labels for your fruit packages?

You should use them, for they make the package look attractive—and that helps sell your fruit, you know.

We have a fine lot of cuts, to be printed in colors, and make a specialty of label printing. Write us for samples and prices, and get your order in before fruit season is on.

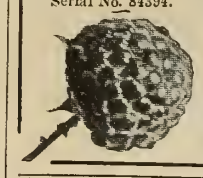
No matter what you need in printing, The Fruit-Grower can furnish it, and we want to help you. Ask us for price on whatever you need. Address

THE FRUIT-GROWER
Printing Department
ST. JOSEPH MISSOURI

GET 35c TO 50c MORE PER CRATE FOR YOUR RASPBERRIES
BY PLANTING OUR VIGOROUS NEW EARLY
"BLACK PEARL"

Crops very heavily and is a firm shipper. Free from blight, never crumbles, and is five to ten days earlier than other varieties. Never winter killed. Large as the Cumberland, but more prolific, and jet black. Tested nine years under our own observation. Sells on the market for 35c to 50c more per crate than all other varieties. Write for full information. Free catalogue and price list of fruit trees, small fruit plants, ornamental shrubs and flowers.

Trade Mark, registered. Serial No. 84394.



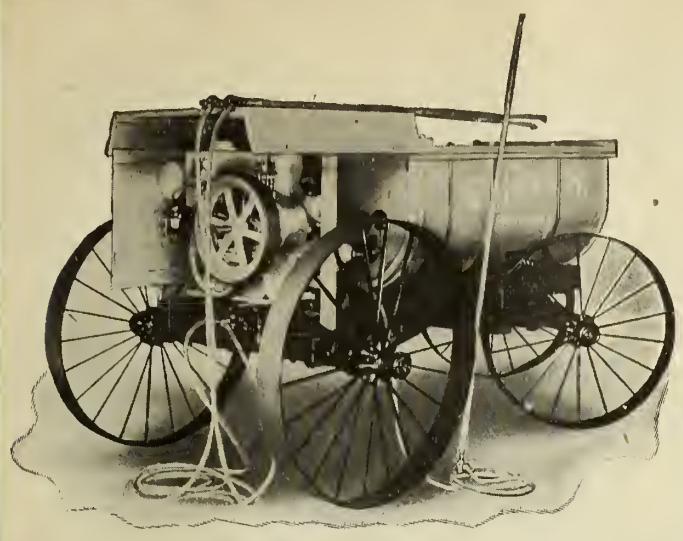
Established 20 years.
HOLSINGER BROS
Rosedale, Kansas.

Art of Propagation

A hand book for nurserymen, florists, gardeners and fruit-growers. Tells how to grow all kinds of trees from seeds. How to bud, root-graft, transplant, prune, spray and impart information valuable to anyone interested in growing fruits of all kinds. Tells how to propagate apple, pear, cherry, peach, grape vines, raspberries and all kinds of fruit, shrubs and plants. Where and how to get all kinds of tree seeds. Spraying material. How to grow your own fruit trees at a cost of less than 2c each. Is the most complete work of the kind published, and is based on thorough Scientific Methods. Sent postpaid to anyone sending 25c in silver to the

Harbor Springs Nursery Co.
HARBOR SPRINGS, - MICHIGAN

In writing advertisers please mention The Fruit-Grower.

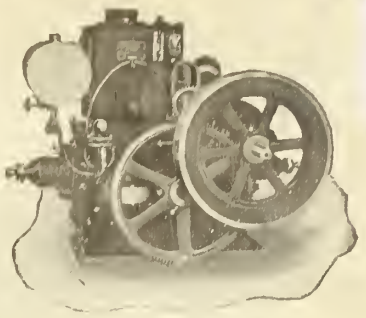


AD 1—See Corner Coupon

THE COAST-TO-COAST SPRAYER

HERE IT IS—THE NEW

"Western" Friend Power Sprayer



New Western Motor-Pump

The October and November Fruit-Grower said this machine would pump **250 Pounds Steady Working Pressure with Increased Capacity—and it will.** It is the simplest, strongest, most compact, smoothest working **High-Pressure Power Sprayer on Earth.** It has Quick Detachable Valves—Separable Seats—Quick Adjustable and Accessible Packing—Quick Detachable Pump Plungers and the **Celebrated Bosch High-Tension Magneto. (No Battery.) $10,000 Could Not Buy a Better Machine.** The first Gasoline Power Sprayer was a "Friend"—Fruit-growers have the benefit of this priceless experience.

Fig. 1—Regular Orchard Model. Hundreds Now in Use in the West.

AD 2—See Corner Coupon

Many New Ideas

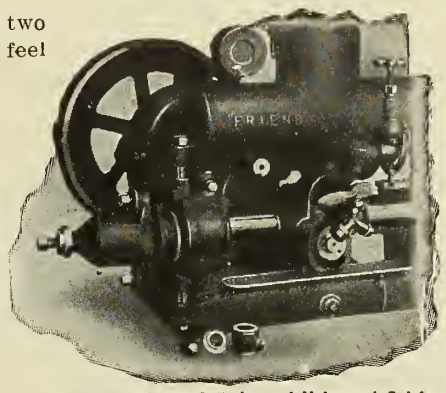
are sprung on the people each season. Some are **Good—MORE are not.** Is it not true that during all this time the **"FRIEND"** has moved steadily forward with Real, Substantial Improvements **that have Made Good?** We ask no fruit grower to do our experimenting. He has **troubles of his own.**

Here is how only two out of hundreds feel about it:

"Friend Mfg. Co., Gasport, N. Y. Gentlemen: We have your quotation of the 23rd. Enclosed you will find our check for one of your new 1912 Western sprayers equipped as per your specifications. We are pleased to say we have used the "Friend" power sprayer for four seasons and consider it in a class by itself for all kinds of work in orchards, especially in the use of home-boiled lime-sulphur mixture. With the machine we now have, in the last two seasons we have put through it over 30,000 gallons of lime-sulphur besides several thousand gallons Bordeaux mixture, and have never had occasion to look at the packing of the pump, which feature alone is worth the price of the machine to us. We have never had to stop five minutes with the machine in the orchard. We are ordering this new Western model for use in our orchards along with the one we now have. Yours is the simplest pump on the market, in our opinion at least after 8 years' experience with power outfits and they have no equal. The fact is, we can not find words to express the satisfaction we have had in the use of your machines; they are simply so far ahead that competitors can never catch up. Your new machine must be perfection; make shipment as soon as possible. There is a great future for your machine in Canada. Yours very truly,

C. E. FISHER & SONS,

Dulverton Fruit Farm, Growers and Shippers of Fancy Fruit, Queenston, Ont.



Disassembled Pump Cylinder and Valve and Quick Access of Packing.

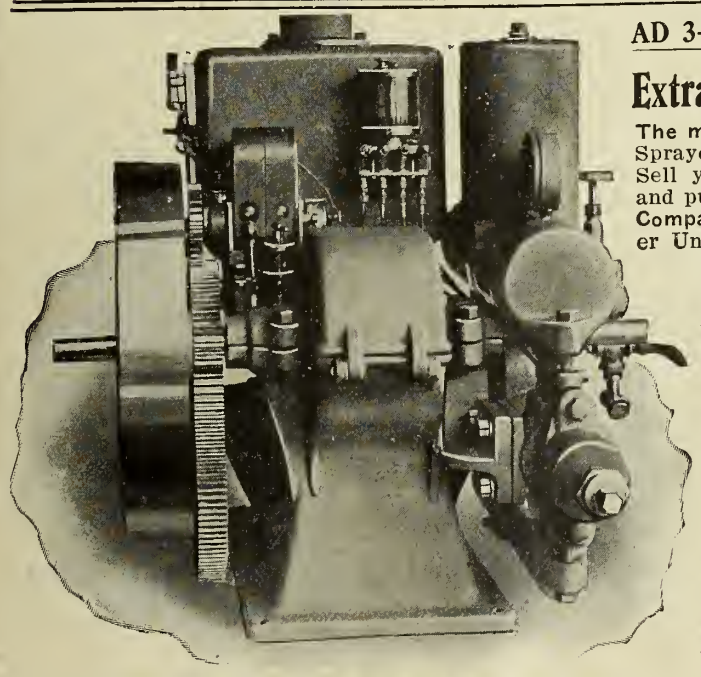
Club Together With Your Friends and We Will SAVE YOU MONEY

Fig. 2—Special Low-down Short-Turning Hilly Orchard Model.

Mr. Geo. Evans, Mgr. Hillcrest Fruit Farm, Stamford, Ontario, writes:

Gentlemen: Please send us the latest catalog on "Friend" Spraying Equipment. The "Friend" spray pump and engine we purchased from you in early spring of 1910 has given us complete satisfaction. We feel that there is not another outfit in existence that will do as much work and with as little trouble as ours. We have applied over 33,000 gallons of spray mixture the two seasons we have had it and the only cost, besides fuel, has ben a set of valve seats. We think that is extraordinary seeing that nearly half the mixture was winter strength lime-sulphur.

When the Outfit was put away at the end of last season it appeared in as good shape as ever. We have never yet had occasion to pack the pump; that in itself is a very big consideration for in the matter of pump packing with our previous Outfits we had nearly got perpetual motion down to a science.

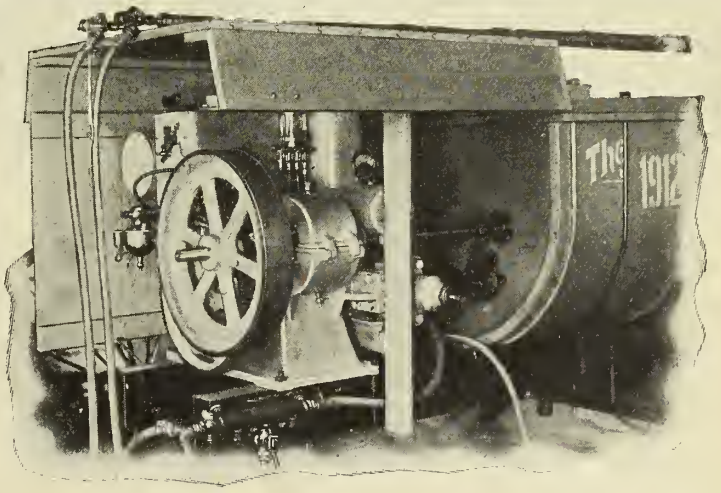


New Western "FRIEND" Motor-Pump. Note the Simple, Rigid, Compact Unit and Its Graceful Lines.

AD 3—See Corner Coupon

Extra-Exchange-Extra

The most important part of a Sprayer is the **PRESSURE.** Sell your old, heavy engine and pump and buy this **Neat, Compact, High-Pressure** Power Unit. Put it on your old Sprayer and spray as you never sprayed before. If you do this we will **give you a "Friend" $10.00**



Power Propeller Agitator FREE

If you can't sell the old engine and pump, tell us all about it and let us make you an exchange proposition. We will allow you ten times what it's worth. Only a few minutes are required to mount this motor-pump on your old machine. Don't worry about "room enough"—sets anywhere. Every day we receive letters saying, "We bought a ———— Sprayer (no exceptions); it gives us lots of trouble—packing leaks, or too heavy, or can't get pressure, or engine won't run on sidehill, or have to repack every day, etc., etc., etc." Now, if the above proposition does not put a stop to it all, and you are not satisfied, **we will trade back.**

THE STRONGEST, EASIEST WORKING, HIGH-PRESSURE HAND PUMP ON EARTH. IDENTICALLY LIKE THE POWER PUMP. QUICK ADJUSTABLE and ACCESSIBLE PACKING, and QUICK DETACHABLE VALVE SEATS, ETC. A REAL "FRIEND," WHEN THE PRESSURE IS ON.

Fig. 15—Hand Pump. We Have Others.

"FRIEND" Outfits are made in the largest and best equipped factory in the world that is devoted exclusively to the manufacture of **SPRAYING OUTFITS.**

We need nothing—we ask for nothing—we simply make the Best Sprayer in the World (that's our hobby), and the up-to-date fruit growers (who know Sprayer Weaknesses) somehow have sufficient confidence in the **"FRIEND"** to place orders freely. Every day now brings them. Fruit growers who buy the **"FRIEND"** get full value. No bad accounts for the cash customer to balance. Wherever you see a **"FRIEND," You Know It's Paid For.** Our Complete Outfits are made in many different styles, ranging in price from $250.00 to $350.00.

Special Introductory Prices Offered. If interested, ask for catalogue. Prompt Deliveries on Early Orders.

Hundreds of Up-to-Date Fruit-Growers have told us, when speaking of other Nozzles, "They are a nice little nozzle, **but they don't Get There like the 'Friend.'"**

"FRIEND" MFG. CO.

Gasport, Niagara County, New York

Our Good Old "Quaker Motto" is

SATISFIED CUSTOMERS

We wish it were possible to know your requirements by simply signing your name. But it's too important a matter to handle so lightly. If you are interested in any of our machines, sit right down and tell us about it, in your own language, just what you have in mind. We'll Do the Rest

FARMING AS A BUSINESS

Business Principles Applied to Farming Is As Necessary As in Other Lines of Trade

Reducing farming to business principles and putting the farm on the same basis of a manufacturing establishment is the way the up-to-date man is carrying on his work. Producing a crop of grain, hay, milk, hogs or fruit is just as much a manufacturing process as converting leather into shoes or iron into a grain binder. This fact is appreciated by a great many farmers throughout the land, and more are coming to it each year.

While the man who is farming a small amount of land, where most all of the work is done by himself and members of his family, the cost of producing a crop is felt less keenly than where the farm belongs to an incorporated organization, and where none or very few of the members of the company are employed on the farm. But on a large farm the factory plan of management, if such it may be called, is indispensable.

One of the spraying rigs at work—note the arrangement of the spraying tower; one man operates six nozzles and covers the tree in an instant. The team never stops moving.

As the name indicates, the principal business of Darby Fruit Farm is that of growing fruit. The farm comprises 840 acres, over 500 of which are in bearing apple trees.

This orchard has been in bearing for a number of years, and Mr. J. F. Riddell, the superintendent, says that for several years the crop has been sold in the cities of Texas, where they have brought a premium. Most of the fruit has been packed in boxes, especially the better grades, while the poorer grades have gone into barrels and the culls to the evaporator. The crop this year was light, but ran close to 10,000 barrels, had it all been barreled. But their box pack has met with so much favor that Mr. Riddell says hereafter it will be used exclusively, and improved over what it has been.

On this great farm the cost of every operation is accurately known. Every man has certain duties to perform, just as has every man in a factory. A bookkeeper is employed whose sole duties are to look after the time of the employes, to keep record of the time consumed in each kind of work and to keep the accounts of the company. Various blank forms are used to facilitate this work, and to simplify finding out the cost of each job. For example, in the work of spraying a card is used on which each spraying gang reports the number of trees sprayed, the kind and quantity of material used, the number of hours worked, the time that is lost and other data that is needed in figuring out the cost of spraying the entire orchard, or a single block or acre, or even a single tree.

Now, to most of us, a scheme such as this may seem like "red tape". But it isn't. It is business; it is absolutely necessary in order that the company may know at the end of the year how much money they have lost or made and where and why the profit or loss may be found. It also makes possible an accurate means of locating places where improvements may be made, and is the absolute foundation for the success of the company.

This farm is unique in a good many respects as it has its own water supply plant with five miles of pipe line, extending to each of the five tenant houses, four spray stations, the barns and dwelling houses. The pumping plant is located in one corner of the farm, where a well 500 feet deep furnishes a supply of water of exceptional purity and abundance. This well, however, is one of six. Four of the others produce water too salty to use, while the fifth produces gas, under a pressure of seventy-five pounds. This gas well was opened only a few months ago, and will be developed and piped to all of the buildings on the farm, where it will be used for illumination and heat.

I spoke of four spraying stations to which the water is pumped. These stations are located at convenient places in the orchard, so that when a machine runs out of liquid it has only a quarter of a mile at the most to go to refill with the spraying material.

At each of these spray stations there is a large tank for the storage of water for emergency use in case the pumping plant should break down during a spraying period. Below, and at one side of this water tank is a platform at about the level of the top of a tank on the spraying machines, on which are the mixing tanks for the various spraying materials. Some of these are for the preparation of bordeaux mixture and others for lime-sulphur. These two materials, in addition to lead arsenate constitute the materials used for the most of the spraying work.

As each of these spraying stations constitutes the center for definite working areas, they are also used for the supply station for the fuel used in the orchard heaters. Most of the orchard has already been provided with oil burning smudge pots, and before another season the entire orchard will be equipped. At each of the spray stations a 5,000-gallon tank of oil will be provided, so that in case the oil should be needed in a hurry on some frosty night in spring, the farthest point in the orchard will be only a quarter of a mile from a big supply of oil.

The management of the Darby Fruit Farm looks upon orchard heating as an insurance, just as much of an insurance as the spraying work, and on this account the orchard heating equipment is being arranged with just as much care and efficiency as though the life of the orchard depended upon it. But so far in the life of the orchard, the damage to it from late frosts in spring has amounted to little or nothing. However, the frost fighting apparatus is in position, and a delayed visit of Jack Frost in the spring will be given a warm reception.

One man is in charge of each of these stations, and during spraying periods he is responsible for the preparation of the spray material. He does all of the mixing at his station, and sees to it that the tanks are properly filled with the desired liquid. Two men accompany each spraying outfit, one driver and one spray man. The spray man manipulates the spraying tower, and on account of its construction, great speed can be made, and yet the work done with exceptional accuracy. This is due to the construction of the spraying tower. It

Nursery Catalogs

Sample Illustration

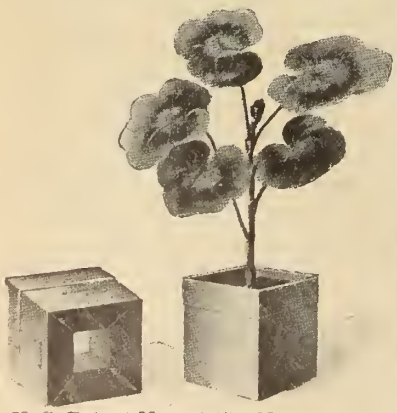
We have one of the most complete printing plants in the West for handling this special line of work. Everything that is necessary to the making of the kind of work you need to help sell your stock—a high grade catalog.

We can take the entire work of compiling the book for you if you desire. We have a practical knowledge of horticultural subjects, botanical names, varieties, the best arrangement, etc. We are able to give you valuable assistance in issuing your catalog so it will be of value to you in selling goods.

Write us for information as to prices and suggestions.

THE FRUIT-GROWER
ST. JOSEPH, MISSOURI

National Plant or FLOWER POT



U. S. Patent No. 906,674, Nov. 24, 1908. E. Bierwirth, Patentee.

A Paper Flower Pot! A Money Maker! A Money Saver! THE IDEAL in REALITY. It has no superior and is the best friend of all who use any kind of Flower Pots for Plants to be transplanted, started in Greenhouses, Hotbeds, etc. A sample (folded and boxed), and circular sent on receipt of 10 cents. Address

National Paper Box Co., Kansas City, Mo.

$584.00 Buys All Lumber, Lath

Shingles, Doors, Windows, Mill Work, Hardware and Nails needed to build this Modern Four-Room Bungalow, including Architect's Blue Print Plans and Complete Specifications.

Size—24x28, 4 Rooms and Bath

Get Our Book of Designs Our Design Book contains more than 50 Designs of Houses, Bungalows, Barns, etc., for which we furnish all Brand New Guaranteed Material.

Mailed on receipt of 10c Postage.

Read Our Free Building Plan Offer

GET OUR WHOLESALE PRICES ON LUMBER, MILLWORK, ROOFING, PLUMBING AND HEATING PLANTS

FREIGHT PREPAID

CHICAGO WRECKING COMPANY

4100 Gravois Ave., St. Louis, Mo.

Mention The Fruit-Grower.

CALIFORNIA

Oranges Free

If you are interested in investigating California land, write us and we will advise you how and where you can buy such land, and receive a standard box of our fruit; California oranges free. Express prepaid.

MERCED FRUIT & FARM LAND CO.
424 S. Broadway, Los Angeles, Calif.

IF YOU ENJOY READING

send for "The Story of the Rest-U," a humorous tale of an inventor's experience. Sent free for the asking. **C. T. HARD, 434 Laughlin Bldg., Los Angeles, California.**

Great Crop of Apples for commercial or home market.

See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."

WINFIELD NURSERIES

consists essentially of a three-fourths inch iron pipe attached to a revolving joint at the back corner of the wagon. The upright portion of the pipe is about three feet long. At the upper end there is a 45-degree elbow from which the pipe extends ten feet farther. From six to eight nozzles are placed at intervals along this pipe, so that all portions of one side of the tree can be covered at the same instant. Then as the pipe is hinged at the bottom, it can be swung forward and back, to the right or left, as needed, and by arranging the nozzles on different angles it is easy to cover the tree with greatest ease and very quickly. In fact, the team does not stop at each tree, but walks forward slowly but continuously. Mr. Riddell says that each of their eleven spraying wagons will cover an average of ten acres each per day.

This orchard is laid out in blocks with streets at convenient intervals. The trees are arranged in long, narrow blocks, and on each street, every block of trees is conspicuously labeled so that anyone who can read can locate himself at any place in the orchard, and there is thus eliminated the possibility of a stranger getting lost in this vast orchard.

The soil on which these trees are growing is a thin black loam, laying practically level, and underlaid with a tight blue clay. But a system of culture has been adopted which enables the trees to make a good growth each year and produce good quantities of fruit. Cowpeas and rye are used alternately in blocks, together with cultivation. The soil is all cultivated in the spring. By mid-summer cowpeas are drilled and allowed to make all the growth they will. The hay is not removed, but if cut, is allowed to remain on the ground. More often it is not cut, being allowed to die with the first frost of autumn and remain as a cover for the soil during winter. These blocks are broken and cultivated the next spring and kept in cultivation during the summer, and

The Central Spray Station on the Darby Farm. Each of the four stations is equipped in the same manner, except that the water tower is not as large. Back of the spray station are the barns.

then a crop of rye is put in for a winter cover crop, and it is followed the next spring by cowpeas. Three hundred acres of cowpeas were planted this last summer, but on account of the very dry weather they did not make as much growth as usual.

Maintaining the soil fertility, and preserving the top soil is an important matter in this orchard, and the immense area planted to cowpeas each year would furnish a great quantity of hay for the live stock on the place, but it is needed more as a soil cover than as feed. There is an abundance of other land on this farm outside of the orchard for hay and grain, and at the time of my visit over ninety tons of hay was on hand. The company makes its own hay, as hay harvest comes at a time the hands are not busy with orchard work, but all of the corn and wheat land on the farm is leased to tenants, as the company devotes all of its efforts to orchard work, realizing that they are better off that way.

The company keeps seven cows, some of which are Jerseys eligible to registry, all having been tested for tuberculosis. They also have a big flock of thoroughbred chickens, and twenty-seven work horses. The chickens, cows and horses are cared for by the stablemen, who do nothing else. They weigh the feed for the horses and cows, do the milking, weigh the milk each day, harness and unharness the horses and whatever other duties there are in connection with the maintenance of the stables. They also gather the eggs night and morning, recording the number each day. The manure from the stables is never allowed to accumulate, but is loaded direct from the stalls into a spreader and carried to the orchard, where it is distributed.

All operations on this farm are carried on in a manner characteristic with good business management. Nothing is done by guess work. Everything is modern, and there is the minimum of waste, either of time, materials or produce. This company is now well established, and is building a strong and efficient organization, and is bound to become one of the greatest fruit-producing companies in the Middle West.

Date	No Spray	Block or Blocks	Clear or Cloudy	Mixture	Hours Worked	Hours and Minutes Lost	Why Lost
7/17	5	5 & 6	Cloudy	Bordeaux	9½	½ H	
	Formulas 2-3-5	Mixed A B 5		15 acc of Nozel			
	Varieties	Station 2 & 1		" out of Gasolene			
	150 Jonathan	Grimes	50	R Beauty	50	York Imp	2 50
	M B Twig	Winesap		Mo Pippen	50	B Davis	50
	200 Gano	Ingram		Genitor		Huntsman	2 00
	Champion	Stayman		Delicious	50	Senator	50
	Black Ben	King David		Assorted		Cherry	
No Tanks Used	Remarks						5 50
							Acres 11

Card used by the Darby Fruit Farm in keeping the record of their spraying work. One of these cards is given to each sprayman every day while spraying. It must be filled out and given to the bookkeeper at night.

Aphids, Plant Lice, Green Fly, Etc.

By such names as these are known those little insects of various colors which attack various kinds of plants, and obtain their food by inserting their tiny beak into the opening buds, the twigs or leaves of plants and suck the juice. They cannot be poisoned. The only way they can be destroyed is by some material that touches them and kills by irritation, or closes up their breathing pores and kills by suffocation.

These insects are green, black or reddish brown in color, depending on the kind of plants they attack, and the variety of the insect, while one group has its body coated with a white woolly substance, from which the insect gets the name, "woolly aphis."

These insects are sometimes quite difficult to kill, but such sprays as kerosene emulsion, tobacco extract and fish oil soap are most effective. The tobacco sprays are most easy to prepare and apply. Make the application very thorough, for it will kill only those insects which it touches. Spraying with lime-sulphur while the trees are dormant helps hold the insects in check by destroying some of their eggs.

The Hardie Sprayers

The Sprayer That is Free From Experimental Risk

5,000 Hardie Power Sprayers are in use Today and over 25,000 Hand Outfits

The **Hardie** is found in the best orchards of this country. There is a reason and we want to tell you what it is

We want to tell you about our Free Trial Offer. We know what our sprayers will do and want an opportunity to show you. We take all the risk, you take none. Our 64-page catalogue is the most complete spray pump catalogue ever issued. Our booklet entitled, "SPRAYING"—How, What With and What For— is full of things you ought to know. These publications are ready for mailing and are free for the asking. Write today.

THE HARDIE MFG. CO., Main Office and Factory HUDSON, MICH.

FACTS ABOUT APPLE GROWING

The healthier the tree, the better the fruit. The longer trees are sprayed with "Scalecide," the more beautiful, healthful and fruitful they become. Mr. Geo. T. Powell, President of the Agricultural Experts Association, has used "Scalecide" exclusively for the past six years on his 160 acre orchard at Ghent, N. Y. He gets twice the price for his apples laid down at his Railroad Station that the growers do in Hood River. Mr. J. H. Barclay, of Cranbury, the acknowledged champion apple grower of New Jersey, has taken all the first prizes for the past four years at the New Jersey Horticultural Society meetings. He has used "Scalecide" exclusively for the past six years. Men who *KNOW* use "Scalecide." A postal request to Dept E will bring you by return mail, free, our book, "Modern Methods of Harvesting, Grading and Packing Apples," and new booklet, "SCALECIDE, the Tree-Saver." If your dealer cannot supply you with "SCALECIDE" we will deliver it to any R. R. Station in the United States east of the Mississippi and north of the Ohio Rivers on receipt of the price; 50-gal. bbls., $25.00; 30-gal. bbls., $16.00; 10-gal. cans, $6.75; 5-gal. cans, $3.75. Address, B. G. PRATT Co., 50 Church St., New York City.

H. J. WEBER & SONS NURSERY CO., WESTERN DISTRIBUTING AGENTS, NURSERY, MISSOURI

Strawberry Raspberry Blackberry Gooseberry and Asparagus

Grape Currant Rhubarb Plants

Everything fully guaranteed. No agents, premiums or schemes of any kind. All plants sold strictly on their merits, and IN LARGE LOTS AT WHOLESALE PRICES. 20th annual catalogue free.
A. R. Weston & Co., R. 11, Bridgman, Mich.

"LIGHTNING" SPRAYERS

At Your Dealer's or Write us.
This Pump quickly attached to any barrel by bolting to staves at upper end of barrel. All working parts brass. Requires no priming. Brass ball valves and valve seats, paddle agitator. 5-ft, 5-ply hose. Brass Vermorel Nozzle, throws any size spray or stream 50 feet, and impossible to clog. Adapted for spraying fruit trees, whitewashing stables and various other purposes. Also 15 other styles to select from. For spraying garden vegetables, trees, shrubbery, washing wagons, windows, etc. Write for free catalog and agents' proposition on full line.

No. 25 fig. 300-bbl. Spray Pump.

D. B. Smith & Co., 54 Genesee St., Utica, N. Y.

FREE BARGAIN BULLETIN

Every Month

Before you build get our prices. Smashing reductions in LUMBER 3,000,000 Feet—new and used. Every grade and dimension. Write today and we will send you free regular monthly list showing everything—doors, windows, roofing, paint, hardware, etc. 500 Items. HOUSEWRECKING SALVAGE & LBR. CO., 1725 Troost KANSAS CITY, MO

CANNING FACTORIES FOR SALE

On time, per cent of pack, or cash. 15 sizes. For Farms, Large Communities or Towns. Make you $30 to $300 a day. Write for Free Booklet.
THOS. M. BROWN, Springfield, Mo.

Make $$$ Growing Fruit

The time is ripe right now.
See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."
WINFIELD NURSERIES

For Sale Apple Seedlings, Root Grafts, Evergreens. Write us. E. W. Jones Nursery Co., Woodlawn, Va. Bx C.

"A word aptly spoken is like apples of gold in network of silver." When you write advertisers always mention The Fruit-Grower

Profitable Fruit-Gr

The Moncrief System of Pedigree-ing Known Fruitage Prepotency

By Joseph Moncrief, Originato of Pedigreed Horticulture

THE UNIVERSAL COMMENDATION which we have receive from various sources—many o extremely eminent authority—has con firmed our conviction that we have es tablished a much improved method o fruit propagation. These approvals o our system of propagation have com from the highest sources amongst Gov ernment Officials, State Authorities an from the best Horticulturists from many states.

Great Room for Improvement

America is noted not only for re sourcefulness, but for wastefulness a well. A good deal of this wastefulnes comes primarily or principally from a inherited habit of taking little from a large acreage instead of a great cro from off a small acreage.

With this change in rural life condi tions, the necessity of growing a large crop from the acreage, has come a stil greater call for better quality—the cal of the commercial markets.

Twenty-five years ago, the orchard that produced a hundred bushels of ap ples per acre was considered a really ex traordinary investment and at 25, 30 o 40 cents per bushel it averaged quit fairly with the general farm crop and that seemed quite as satisfactory.

Now neither such quantity nor qual ity would save it from the keen edged axe or the malice of its previous ben efactor.

Appreciations from Highest Authorities

Extract from letter written us by A. D. Shamel of the United States Department of Agriculture, dated Nov. 17, 1911:

"This summer I run onto a lot of folks who didn't believe that there was any such thing as bud variations, in fact I think the majority of fruit growers are under that impression, simply from the fact that we have been taught that difference in trees under similar conditions are due to local soil conditions or the influence of stocks on scions. Difference of limbs on the same tree can hardly be explained from such causes, however, and if we admit as any careful observer must, variation in limbs of the individual tree, then logically, the possibility of bud variation and resultant individual tree variation must be admitted.

In citrus fruits we are finding marked difference in individual trees under the same conditions in the following characters: productiveness, time of ripening fruit, number of seeds, shape of fruits, thorniness of trees, and habit of growth of trees. The seed, thorn and season of ripening are characters that could hardly be due to any other cause than bud variation. Admitting this, why not admit that variation in other characters are due to the same cause?

I feel sure that in order to reap the benefit of the progressive work that you are doing in bud selection that it will be necessary to determine the extent and importance of individual tree variation in commercial orchards of established varieties and carry on a campaign of education along this line. In order to do this most effectively you will need data secured from individual trees in these groves or orchards.

Some of the citrus growers both here and in Florida are numbering every tree in their orchards, when the fruit is picked from each tree, the picking foreman records in a note book the yield of each tree. In some cases this data is put down, (recorded), in boxes of fruit or the fruit is weighed with a pair of scales mounted on a truck, or the number of fruits is counted by a trained laborer. It is not a difficult or expensive matter when once organized for it. **Some citrus growers are finding that 15 per cent of their trees are producing the bulk of their crop, much to their surprise.**

The Baldwin orchard that I spoke about in my letter where we found the striking individual tree bearing full crop this season, the "off" season in Connecticut, was the Hale and Coleman orchard at Seymour, Connecticut. Mr. J. H. Hale, South Glastonbury, Conn., is the owner and manager of this orchard. The Ben Davis trees on this property had as good crop this season as last, so that it occurred to me if this variety bore a crop this season why not the Baldwin? Further the 18 Baldwin trees wo marked scattered over the orchard bore ideal crops with no apparent explanation, why the rest of the trees were barren. Mr. Hale was sure that three of these trees at least had full crops last season, so that we wondered whether or not some Baldwin trees might not be regular croppers. **If so and this character can be propagated, what a financially important fact this will be to Baldwin growers?** The determination of individual tree behavior or performance in established orchards appeals to me as similar to the study of the individual dairy cow in a herd. Before the Babcock test, and records of milk production were undertaken, people for hundreds of years had little or no notion of the importance of the individual cow from the profit standpoint. In a few years all this has been changed and practically all dairy herds are studied in order to weed out the unprofitable cows or "borders." Only once in a great while is a cow found that is a record breaking performer, similar perhaps to the possible rarity of great tree performers (bud sports), but the greatest commercial importance lies in bringing the average for the herd up to the average of the good performers, and the weeding out of the poor performers. May not our most important work be similarly the production of strains or "Klans" of established varieties the individuals of which produce like the best individual under similar conditions?

Washington, D. C., December 13, 1911.
The Winfield Nursery Co.,
Winfield, Kansas.

Gentlemen: I am in receipt of the apple folder which you sent me and which is referred to in your letter of the 6th instant. I have looked the folder over with much interest and should think that it ought to serve the purpose of putting your work before the fruit growers in a very effective manner. The fac simile copy of your pedigree records, which show your method of selecting parent trees, will undoubtedly serve a very useful purpose in this connection; the record forms, which are published, indicate the care and discrimination which you are using in selecting trees from which to secure scions.

Wishing you the success which you deserve in your present line of work, I remain, Yours very truly, H. P. GOULD, Pomologist in Charge of Fruit District Investigation.

Write for this Great Catalogue Today

BRED FOR QUALITY BRED FOR QUANTITY PEDIGREED PEDIGREED
WINFIELD NURSERIES

IF YOU Want To Make Success CERTAIN You MUST Get a Copy of This Grand FREE BOOK Pedigreed Horticulture

If interested in planting trees commercially or a home orchard, and will send your name and address, we will send you a copy FREE of charge, with our compliments.

PLANT PEDIGREED TREES

"This pedigreeing method enabled the isolation of n strain of peaches now known as the Hottes Elberta. This is Elberta, pure and simple, but of a highly desirable type of this good old variety, and one which produces fruit of uniform size, roundness, color and quality."—Prof. E. H. Favor.

wing Made Certain

This was an age when horticulture vas in the primer stage — the age vhen growing apples, peaches and ther fruits—were only a side issue o the general home life. The greater art of all fruit which reached the narket in those days was only the eft-overs of home consumption. Now ruit growing has become a commer-ial profession and one of the highest eveloped of all pursuits in rural life.

What an advancement in growing nethods, in cultivation, pruning care, ighting of insects and pests, the hwarting of Jack Frost with the mudge pots—all to grow better fruit —all to reach the big rewards offer-d by discriminating markets.

And yet—with all such advancement in orticultural methods, not over one orchard n every six or seven is ever profitable and ot over one tree out of every three in even he profitable orchards, is satisfactorily re-nunerative.

There are hundreds of orchards planted ll over this country, which are after years f careful growing attendance, proving so nprofitable that the owner becomes dis-ouraged in his ambition at fruit growing as business, so that he first neglects the or-hard and finally either applies the ax to it r discards it to fate.

Finding Quality Breeders

In some of these orchards, and in almost very orchard, without a single exception, ou will find a few trees—just a small per-entage of the whole—that habitually pro-uce a very sufficient crop of really high-uality fruit. Were all the trees like these xceptional ones, the orchard would prove ery profitable—but that fearful predom-nating majority of drones far overbalances nvestment and expense vs. income.

Now the logical method of eliminating ailure in profitable orcharding—so that all rchards planted universally shall reap a rofitable or satisfactory remuneration for nvestment and labor—is to plant nothing ut trees like these exceptional habitual uality and quantity bearing ones.

Heretofore the only determined effort in his regard has been to make careful selec-ion of the young trees planted—so far only s outward appearance shows in character f growth.

We have no fault to find with this discrim-nation, there is certainly general outward uality of trees just the same as we find in very class or variety of live stock—the ame individual outward appearance that nakes one horse worth double that of an-ther even of the same breeding.

The Inherent Basis Is Fixed

But there is another factor in tree quality vhich we believe—yes, we know—is far more mportant than this outward appearance or ifference, that of inherent quality. The blood r strain record of past parentage perform-nce or production—this is the crucial crim-nal negligence back of every unprofitable rchard and behind every individual unre-ourceful tree.

Good cultivation, proper soil and climate nay grow a more perfect tree, but it can ever grow quality or quantity-bearing habit nto a tree propagated from an unprofitable ree.

Impress this into your mind for all time, ecause no man can reverse this unalterable aw of nature—that like begets like—that lood tells in tree life just the same as it overns animal life.

Good feeding, vigilant grooming and care vill vastly improve the looks of a scrub or lug horse—but it is still a scrub and it will eproduce scrubs, not now and then, but all he time.

In successful live-stock breeding great are is given to selecting individuals of un-sual merit—for no other reason than that ve know we can most reasonably and as-uredly expect a like reproduction—that all he inherent qualifications of the originals will be reproduced perfectly in the offspring r duplications.

Now this is absolutely true in plant or tree ife—by obtaining and propagating exclu-sively from scions from these unusual and habitual quality-bearing and quantity-bearing, grown-up record-established trees in the bearing orchard—we know with a certainty that every tree propagated therefrom will repeat these extraordinary profitable trees.

This gives us a whole orchard of these extraordinarily profitable trees—and **Profitable Fruit Growing Made Certain.**

Now if planting a commercial orchard tomorrow—or a home orchard—wouldn't you feel surer of a safe and profitable investment in planting all of the trees propagated from such selected parentage?

Would you want to buy and plant trees propagated from scions taken from trees which had never proven that they could or would reproduce profitably—or from scions taken from unbearing trees in the nursery row—or from water sprouts—waiting six, eight or ten long years to find at last that few of the trees in your orchard are remunerative? And yet this is just what hundreds and thousands of orchard planters have been doing for years and years—and then cutting down their orchards and pronouncing fruit growing unprofitable.

We believe that orcharding is one of the most lucrative, most healthful and happy vocations in all the world—that there is greater opportunity now in it than in any other industry in rural life.

The cry of the cities with their tremendous markets, is for fruit, and they are not so particular about the price, if it is of fancy quality.

Real, Genuine, Pedigreed Stock

We have been breeding up some extraordinary trees, every one of which has been propagated by our exclusive method of first pedigreeing known fruitage prepotency. There are no others in America superior to them, and they are going to make some planters the greatest returns that have ever been produced. Every tree in this propagation has a pedigree—a blood parentage that has already made good.

There is about a quarter million trees in this special growing—the greater number being of commercial varieties in big demand. The additional expense of growing trees by this particular method necessarily makes them cost a little more—nothing as compared with the multiplied profits you will get from them.

Necessarily it makes them also limited in quantity, as we are only able to find restricted quantities of such scions and these from many states—our experts selecting them in person.

When we sell those already grown, we cannot furnish more until another season's growing. We never substitute trees grown by the old gambling method.

Free Consultation

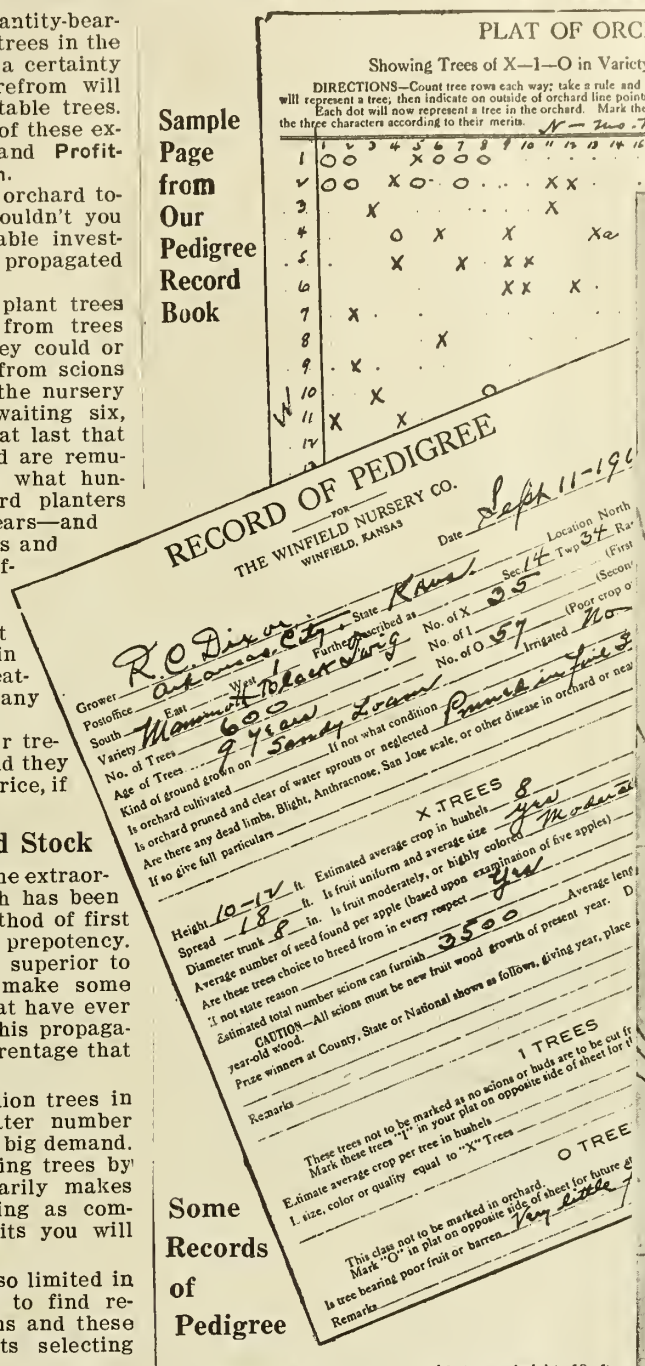
We solicit correspondence and inquiries with those interested in our propagation, those anticipating planting trees during the coming season, and to those who will advise us the number of trees they expect to plant or acreage, location, market growing for, etc.—we will be pleased to send a copy of our Complete Illustrated Story of the World's Best Trees—**"PEDIGREED HORTICULTURE"** free of charge and without obligation.

This beautifully illustrated book contains a great amount of extremely interesting and valuable information for the man who expects to purchase or plant trees. Send for it **today**—it's **free.**

Yours for Profitable Fruit Growing —Made Certain.

J. H. Moncrief
President

Sample Page from Our Pedigree Record Book


PLAT OF ORCHARD

Showing Trees of X—1—O in Variety Mammoth Black Twig

DIRECTIONS—Count tree rows each way; take a rule and draw a line around dots needed so that each dot will represent a tree; then indicate on outside of orchard line points of the compass with N. E. S. W. Each dot will now represent a tree in the orchard. Mark the dots that represent the above variety with one of the three characters according to their merits. N — two Pippins to the North

RECORD OF PEDIGREE

FOR THE WINFIELD NURSERY CO. WINFIELD, KANSAS

Date Sept 11-19

Grower R. C. Dixon Postoffice Atoma City State Kans.

Variety Mammoth Black Twig Age of Trees 9 years Kind of ground grown on Sandy Loam

No. of Trees 600 Described as Further Location North South East West Sec. 14 Twp. 34 Range

No. of X 35 No. of 1 57 No. of O Irrigated No

Is orchard cultivated If not what condition Pruned in fine

Is orchard pruned and clear of water sprouts or neglected

Are there any dead limbs, Blight, Anthracnose, San Jose scale, or other disease in orchard or near

If so give full particulars

X TREES

Height 10-12 ft. Estimated average crop in bushels 8

Spread 18 ft. Is fruit uniform and average size Yes

Diameter trunk 8 in. Is fruit moderately, or highly colored Moderately

Average number of seed found per apple (based upon examination of five apples)

Are these trees choice to breed from in every respect Yes

If not state reason

Estimated total number scions can furnish 3500 Average length

CAUTION—All scions must be new fruit wood growth of present year. Do not use year-old wood.

Prize winners at County, State or National shows as follows, giving year, place

1 TREES

Remarks

These trees not to be marked as no scions or buds are to be cut from them. Mark these trees "I" in your plat on opposite side of sheet for future guide

Estimate average crop per tree in bushels

O TREE

Is size, color or quality equal to "X" Trees

This class not to be marked in orchard. Mark "O" in plat on opposite side of sheet for future guide

Is tree bearing poor fruit or barren Very little

Remarks

Some Records of Pedigree

Jonathan "A" Seven year old trees, height 10 ft., spread 14 ft., diameter of trunk 8 inches, fruited regular heavy crops, 1910 crop, 11 boxes fancy fruit. Color very dark red.

Mammoth Black Twig "C" Seven year old trees, height 20 ft., spread 20 ft., diameter of trunk 11 inches, fruited heavy crops each year; 1910 crop, 8 boxes fancy fruit. Color good.

Gano Nine year old trees, height 20 ft., spread 17 ft., diameter of trunk 10 inches, fruited for three years, produced four boxes of fancy fruit, which won first prize at the Colorado National Apple Show; carload from this same orchard won $250 loving cup.

Ragan Fifteen year old trees, height 25 ft., spread 25 ft., diameter of trunk 12 inches; fruited regular heavy crops; 1910 crop, 22 boxes fancy fruit.

Rome Beauty "D" Nine year old trees, height 12 ft., spread 10 ft., diameter of trunk 8 inches; borne heavy crops for three years; 1910 crop, 10 boxes of fine fruit.

Spitzenburg "A" Nine year old trees, height 16 ft., spread 14 ft., diameter of trunk 8 inches, bears regularly, and in 1910 produced 6 boxes of fine fruit.

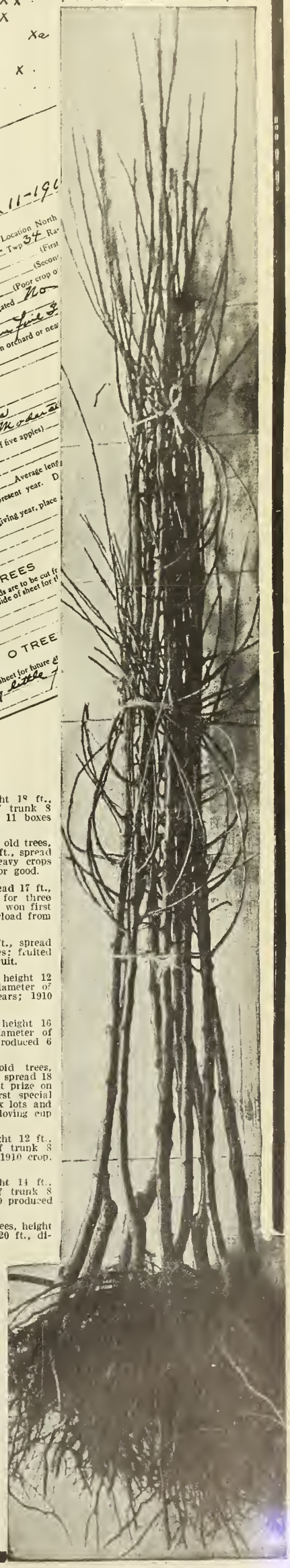
Stayman Winesap "C" Nine year old trees, height 20 ft., spread 18 ft., diameter of trunk 8 inches. Winner of first prize on plate Denver National Apple Show, 1910. First special prize Bartelds Seed Co. First prize on one box lots and shared the Grand Sweep Stakes prize of $250 loving cup with Gano.

Winesap "A" Eleven year old trees, height 12 ft., spread 12 ft., diameter of trunk 8 inches; fruited regularly and bore heavy crops; 1910 crop, 14 boxes fancy fruit.

Winesap "B" Eight year old trees, height 14 ft., spread 12 ft., diameter of trunk 8 inches; fruited regularly for three years; in 1910 produced 7 boxes of fine fruit.

W. W. Pearmain "B" Ten year old trees, height 20 ft., spread 20 ft., diameter of trunk 10 inches; borne regularly for four years; in 1910 produced 15 boxes of fancy fruit.

Write early. All we ask is an opportunity to tell you—write you—about Pedigreed Trees. Then you'll be as enthusiastic about them as we are. Write today.



WINFIELD NURSERIES

Winfield Nursery Co. Winfield, Kansas

ONLY NURSERY IN THE WORLD GROWING BY PEDIGREE METHOD EXCLUSIVELY

HORTICULTURAL SHOWS

The Fourth National Horticultural Congress at St. Joseph—The Denver and Spokane Shows

National Horticultural Congress.

At the fourth National Horticultural Congress and apple show held in St. Joseph, Mo., November 23 to December 2nd the list of entries was not up to the mark set in former years; but the quality of the fruit on the exhibit tables was better than ever, and the lectures were more instructive than usual.

The congress was held in the magnificent fire proof Auditorium, the entire first floor being taken up with the exhibits. In the center of the arena was arranged a pyramid, surrounding the base of which was the box displays of Colorado, North Carolina and Missouri. A fine lot of fruit was arranged on plates covering a dozen or more long tables, and surrounding the arena above the tier of boxes was a broad strip of apples in trays, most of which were arranged in a fashion similar to a standard box pack.

One of the features of the show around which a great deal of interest centered was the student judging contest. This was for a trophy cup awarded by the Twentieth Century Farmer for the best student apple judging team from an agricultural college. This cup is to remain with the winning team for one year, and is not to become their permanent property until a team from the same school has won it three years in succession. Last year this trophy cup was won by the students team from the Iowa Agricultural College, but was carried home this year by the Nebraska team.

THE WINNING TEAM IN THE STUDENTS' JUDGING CONTEST
Prof. R. F. Howard in the center of the back row.

The winning team comprised W. F. Becker, F. C. Miles, H. W. Richey, R. H. Camp, and Will Forbes, and the score for the team was 391.6 points out of a possible 500. The team from Iowa, comprised by I. B. Johnson. J. L. Tompkin, D. A. Jay, C. F. Cochran, and H. E. Ward under the direction of Professor G. R. Bliss, made a score of 387.3 points and the Kansas team, consisting of A. F. Yeager, E. Isaac, C. C. Magill, J. R. Cooper and J. W. McColloch, under the direction of Mike Ahern, made a score of 367.5.

For some unaccountable reason the attendance at the apple show was far less than expected, especially among the people of St. Joseph. Fruit growers from the surrounding districts were present for one or more of the sessions, but the city people, who were expected to make up by far the largest percent of the visitors were missing. But they were the losers, as there was a great deal to learn from the splendid exhibits which were on the tables, and the interesting series of lectures by prominent horticultural authorities which was maintained throughout the session.

Among the winners of the big prizes North Carolina carried off first honors. Professors W. N. Hutt and S. B. Shaw who accompanied this display had reason to be proud of their winnings, as the apples they displayed were good evidence of the horticultural possibilities of the Atlantic seaboard, and contained a large number of different kinds of apples as well as citrus fruits, Japanese persimmons and nuts. In addition they had a fine lot of boxed apples, splendidly grown and beautifully packed.

Winner of the second place was Colorado. Mr. H. A. Richardson and F. S. Carman placed this display and had every reason to be proud of their exhibit. This was really the center of attraction, and in packing, color combinations and beauty of fruit it was well the leader, although taking second place, because out-ranked in point of varieties by North Carolina. Colorado had nothing but apples, while North Carolina had oranges, pomegranates, persimmons, nuts, etc., as well as apples.

The Denver Show.

The first American Apple Congress at Denver, Colo., on November 10 to 17 was an event of great importance to the fruit interests of Colorado. The displays of apples was somewhat smaller than at previous expositions, but there was a noticeable improvement in the packing of the boxed fruit that was on display. This feature was one of the important things that came as a result of the previous apple shows, and illustrated one of the great educational features of such undertakings.

In connection with the apple show there was a series of lectures on important horticultural problems which must be met by fruit growers, and as an amusement feature a carnival was held in which there were some big parades through the streets of the city.

Canon City, Colo. district took more premiums than any other fruit district. The Round Crest Orchards of that district carried off prizes offered to the value of about two thousand dollars in cash, silver trophies and special premiums, while other Canon City exhibitors held up their end equally well.

At this Exposition where the competition was, naturally, very severe the Canon City district took first prize on the best twenty-five boxes of Jonathans, first prize on the best twenty-five boxes of Grimes Golden, first on the best twenty-five boxes any variety, sweepstakes in Division No. 1 first prize on the best District Display of any fruit district in the United States and Canada, and over one hundred other prizes on twenty-five box, ten box, single box and plate exhibits.

Spokane Apple Show.

When the fourth National Apple Show and Enakops jubilee closed in Spokane the night of Thanksgiving day with unmasking of King Apple IV, in the person of former United States Senator George Turner, and the playing of "Auld Lang Sang' by

STAHL'S Hand and Gas Engine Power Spraying Outfits

and "THE STAHL WAY OF SPRAYING" make your spraying work easy and results sure

Stahl's Noxall Hand Power Outfit.

The Stahl line includes in addition to Noxall Outfit shown above, Stahl's Gasoline Engine Power Outfit, Barrel Pumps, Cart Sprayers, Knapsack Sprayers, Bucket Pumps and all Spray Pump Accessories.

Ask for large catalogue fully describing Spray Outfits of any kind, size or capacity, for large or small orchards, gardens or vineyards, also for whitewashing fences, barns, poultry houses, etc. Catalogue also contains much information on the subject of spraying of value to every fruit-grower.

William Stahl Sprayer Co., Box No. 67, Quincy, Ill.

The Kimball Cultivator

Best Implement For Orchard Cultivation

Kimball Cultivator at Work in Orchard at Morrisania

For maintaining a dust mulch in an orchard and for keeping down weeds, the Kimball Cultivator is without an equal. Its blades cut about three to four inches under the surface of the soil, pulverizing the soil and leaving it level; all weeds are cut and germination of weed seeds prevented by leaving the soil in loose condition.

The Kimball Cultivator works well out from the horses and soil can be stirred close to trunks of trees, with horses walking out in the open. The Kimball takes a wide sweep at a time, and eight to ten acres of orchard can be cultivated per day. Thousands of Kimball Cultivators are now in use, and every person who has one recommends it. Mr. Irvine, editor of The Fruit-Grower, used two Kimball Cultivators at Morrisania last season; ask him what he thinks of them. Ask him also if the Kimball is not an ideal cultivator for any part of the country; he will tell you it is an ideal soil-stirring implement.

Clean Cultivation of Orchards Pays

It not only conserves moisture, but destroys the hiding places of insects, such as curculio, which are often serious orchard pests. Apples grown in cultivated orchards ripen later and consequently keep longer; they are of larger size and are usually smoother. The cost of cultivation is not excessive if Kimball Cultivators are used. Send for free booklet describing this great orchard implement—it's free for the asking.

W. A. JOHNSTON MANUFACTURER The Dalles, Oregon

massed bands the preliminary work was begun by the board of trustees, headed by E. F. Carter Van Dissel, for the fifth annual competitive exposition, which probably will be housed in a permanent structure, to be completed in time for the 1912 exhibition. Broad in scope and comprehensive as was the show and accompanying entertainment, November 23 to 30, it is officially announced that the coming exposition will be more in keeping with its name, plans being now under way to secure displays from every state and province in America.

The show just closed was successful in every way. There were not as many exhibits as in 1910, but the displays were arranged in such a way as to give the prospective orchardist as well as the experienced grower a better opportunity to study the educational features. The temporary structure 200 by 225 feet, with two annexes each 90 by 100 feet, afforded ample room for the proper display of all exhibits. The work of the board of judges, consisting of C. J. Sinsel of Boise, Idaho, James Gibb of Kelowna, B. C., and H. J. Austace of East Lansing, Mich., was highly satisfactory and they and Ren H. Rice, secreary of the show and his assistants received praise on all sides.

The Enakops carnival, under the direction of a general committee, headed by Charles Hebberd, was the means of uniting more closely the commercial and industrial interests of Washington, Oregon, Idaho and Montana, many communities of which were represented by growers, princesses of the empire and band organizations.

The week's festivities began with the formal opening of the show at 10:30 o'clock the morning of November 23, the day's program including the dedication of the Monroe street bridge, a $500,000 structure, which has the largest single span (281 feet) of concrete in the world. This was followed by band concerts in the afternoon, and the official and military parade in honor of King Apple in the evening. Afterward the king and princesses, representing 35 communities in the Inland Empire, and members of the court visited the show grounds.

Idaho carried off the chief honors in the carload competition, the Knapp entry winning first on Wagener, also a prize of $500 for the best pack and the International Apple Shippers' association trophy for commercial pack and grade. The Stowe entry, also from Idaho, was second on Wagener. The Oregon entry won first on Yellow Newtown. Washington was first with cars of Gano and Winesap and mixed varieties, also the sweepstakes for taking the largest number of prizes in all contests except plates.

W. L. Dresbach of Mosier, Ore., won the world championship and a prize of $100 in the packing contest on November 30, scoring 96¼ out of a possible 100 points, defeating Charles Mason of Spokane, last year's champion, who scored 93½ points as second and won $50. Earl Benson of Spokane, was third with 93 points and won $25. Benson packed four boxes in 19½ minutes, but was low on the the condition of the pack; Dresbach used 22½ minutes, while Mason required 28½ minutes.

The spraying, pruning and grafting demonstrations by the horticultural department of the State College of Washington, under the direction of Prof. A. L. Melander, entomologist, were attended by many, as were also the daily lectures in the main auditorium. The spraying machine trials also interested growers from all parts of the country. The free packing school was largely attended, some of the students being present the entire series.

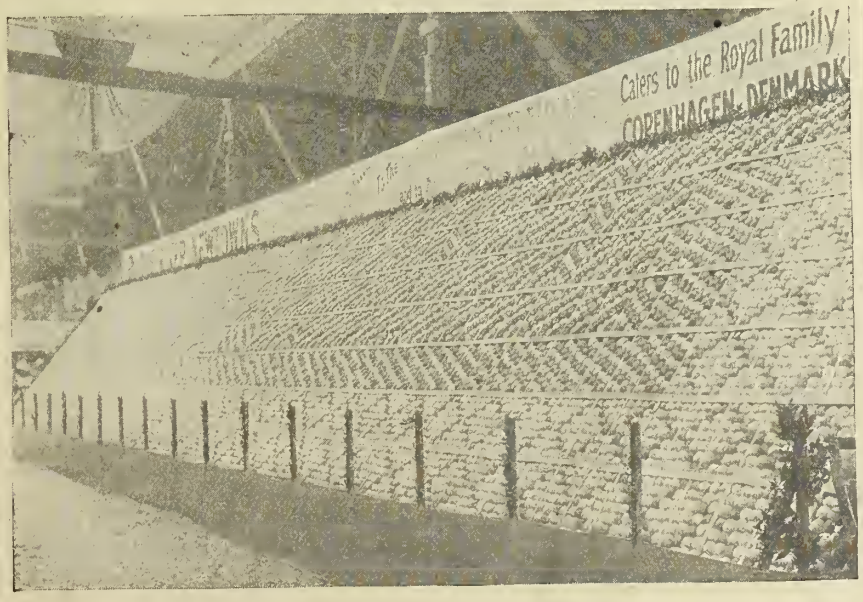
From the spectator's viewpoint the show was more artistic than any of the previous exhibitions, care being given to the display of the fruit as well as descriptions in printed text and pictures of the districts in which it was grown. Another innovation was the exhibits by Indians in northern Idaho. Chief Isaac, though blind for years, showed that the red man can grow apples through intelligently directed effort. He was among the prize winners. The Northern Pacific Railway Company's commissary department had an exhibit eight by sixteen feet, showing a model orchard home, made of sugar. The coloring was true to life.

The formal organization of the Central Fruit Marketing Exchange was completed at the apple show on November 29. L. E. Meacham, traveling representative of the committee of eleven, headed by W. H. Otis of Peshastin, Wash., at the Walla Walla convention last February, who was installed as secretary, has opened a bureau in the Hutton building, Spokane. It is announced that the exchange will handle the 1912 crop, its efforts being confined to Washington, Oregon, Idaho and Montana.

Miss Laura Breese, instructor, and a bevy of young women students in the department of home economics of the University of Idaho, taught housewives how to prepare apples as food in 209 different ways. The demonstrations were witnessed by 20,000 men and women and as many more were supplied with viands. The University of Oregon probably will send its instructor in domestic science and a number of students to Spokane for the 1912 show.

The exhibitors expressed their appreciation of the arrangements by presenting Secretary Rice a set of resolutions on the closing day and on all sides were heard the most complimentary remarks over the manner in which the show was handled. Chief Judge Sinsel said the show was the best of the four so far given and every exhibitor promised to return for the fifth exhibition. "Mike" Horan of Wenatchee, winner of the sweepstakes at the 1908 show, said he will have one or two carloads, and it is expected that other parts of Washington, Oregon, Idaho, Montana and British Columbia will take advantage of the next show.

AUGUST WOLF.



PRIZE WINNING CAR OF YELLOW NEWTOWN ENTERED BY HOUSTON BROS., TALENT, ORE., AT THE FOURTH NATIONAL APPLE SHOW

Would Keep Out Western Apples.

At the recent meeting of the New Jersey Horticultural Society the fruit growers of New Jersey, New York and Pennsylvania were urged to grow as good fruit every year as they have this year demonstrated as being possible, and to drive the Western-grown apples from the Eastern markets.

Northwestern Iowa Horticultural Society Meeting

Accompanied by a fruit exhibit that rivaled that of the Western fruit districts, the Northwestern Iowa Horticultural Society held an enthusiastic and successful meeting at Sioux City on November 2nd and 3rd. The people of the city realized that this was an excellent fruit year in their section of the state and that the quality was of the finest. It was not difficult, therefore, for the officers of the society to secure a good premium list. This brought out an exhibit which, quality and quantity considered, has not been surpassed in the history of Iowa horticulture.

Four rooms of the library building were devoted to these exhibits and overflow space was required. The box display attracted the greatest amount of attention, and while the exhibitors had had but little experience in box packing, their efforts were certainly successful and indicated the possibilities along these lines for future displays as well as the profits to be derived from proper handling of the apple crop of the Missouri Valley.

With such a magnificent exhibit to insrruct and entertain the growers and visitors, it is little wonder that every paper was listened to with close

"LION BRAND" TRADE MARK SPRAYING MATERIALS

Purity, Strength, Effectiveness At It Since 1889

Destroy Insects, Prevent Disease Do Not Injure Tree or Delicate Plant

Millions of Dollars are Lost Annually by Fruit Growers and Vegetable Gardeners Because They Do Not Realize the Enormous and Increased Profit in Persistent Spraying With Properly Made Insecticides and Fungicides

When it comes to fighting insect pests in your orchard, you cannot afford to experiment with unknown insecticides of doubtful value. If the enemies of your fruit trees get a good start, all the spraying you can do will not control them. If you are fighting San Jose Scale, and use poor materials, the fact that they were poor will likely not be apparent until too late to spray again, and an entire season has been lost, and a number of trees injured if not destroyed.

Your first spraying for Codling Moth is done some little time before the insects appear. If they are not destroyed just after hatching, because you have used a poor quality insecticide, you will not know it until too late to kill the first brood, and one Moth which escapes lays about fifty eggs for a later brood. Hence the value of using "Lion Brand" Insecticides and Fungicides of long tested and known reliability.

This is not the idle talk of a poorly posted advertisement writer but a plain statement of facts that can be proved by any reader of The Fruit-Grower who cares to have it proved.

Lime-Sulphur Solution is for San Jose Scale particularly, and Apple Scab. Has a wonderful tonic effect, and makes the bark of apple trees smooth as can be. The only spray that destroys Scale and does not injure trees. Ready for use and more economical than home-made solutions.

The stickiest Arsenate made. Preferable for Codling Moth, Curculio, Elm Leaf Beetle and Chewing Insects of all sorts, on trees, shrubs, vines, bushes and vegetables where it is desirable that the poison should remain longer on the foliage than is possible with other insecticides. "Lion Brand" Arsenate of Lead does not burn most delicate foliage.

Blanchard's "Lion Brand"

Insecticides and Fungicides

have been the Standard of the World for more years than any other manufacturer in this line has been in business

BLANCHARD'S PRODUCTS

"LION BRAND" Arsenate of Lead	"LION BRAND" Grafting Wax
"LION BRAND" Pure Paris Green	"LION BRAND" Sticky Linding
"LION BRAND" Lime-Sulphur Solution	"LION BRAND" Weedicide
"LION BRAND" Bordeaux Mixture	"LION BRAND" Powdered Tobacco
"LION BRAND" Kerosene Emulsion	"LION BRAND" Insect Powder
"LION BRAND" Whale Oil Soap	"LION BRAND" Cattle Content
"LION BRAND" Pure Powdered Hellebore	And a number of Specialties

WE MAKE A SPRAY TO DESTROY EVERY INSECT ENEMY AND FUNGUS DISEASE OF TREES, VINES, SHRUBS, PLANTS AND VEGETABLES

THE JAMES A. BLANCHARD CO., is the oldest, most responsible and best equipped manufacturer of Insecticides and Fungicides in the World.

None but the purest and best-for-the-purpose ingredients are used. Every formula is scientifically correct and thoroughly tested to be the most effective, and safest for its purpose. For 23 years we have made nothing but Insecticides and Fungicides.

Insects and fungus diseases have become so numerous, so destructive, persistent and aggressive that it is admitedly impossible for fruit growers and vegetable gardeners to get crops that can be profitably sold without using Insecticides and Fungicides, and those who grow profitable crops do use them, and know it is plain common sense, and a most economical safeguard to do so.

LION BRAND INSECTICIDES AND FUNGICIDES cannot be surpassed in uniform quality, and are guaranteed under the Insecticide Act of 1910.

We want every one who has a fruit tree of any character, or a bush, or a vine, or a shade tree, and every one who grows vegetables, even if only potatoes, to have a copy of our

FREE SPRAYING BOOKLET

wherein we explain why and how spraying insures larger crops and better quality. Just send your name and address to our nearest office.

Blanchard's Products are sold by dealers and agents everywhere, or direct, if your dealer cannot supply them. Look for the Lion Brand Trade Mark and take no other.

THE JAMES A. BLANCHARD CO.

562 Hudson Terminal, New York — 563 Broad Street, St. Joseph, Michigan

Factories: New York and St. Joseph

Bordeaux Mixture prevents Blight, Mildew, Rot, etc., from destroying Potatoes, Beans, Peas and Melons; keeps spots and specks off Apples, Peaches and other fruit, and makes crops surer and larger. One gallon to 49 of water.

"Lion Brand" Pure Paris Green contains absolutely not a particle of filler of adulterant of any sort, and is accepted the World over as the Standard.

attention, and that the meeting closed as one of the most successful the society has held.

LAURENZ GREEN.

Northern Illinois Horticultural Society Meeting.

The forty-fifth annual convention of the Horticultural Society of Northern Illinois was held at Sterling on December 6 and 7, 1911. The attendance, both of out of town visitors and nearby residents was very good. The large local attendance must be accredited in good part to the efforts of Austin Powers, vice-president of the society, whose home is but six miles from Sterling. This is but another proof that personal, persistent effort will accomplish more than public notices in getting persons to attend meetings of this kind. The fruit display was the largest that has been shown at a northern Illinois meeting for years, and proved that in a season of abundant fruit, northern Illinois can produce as good fruit as any other section of the state. The display of vegetables was large and interesting.

The following were the officers elected for the coming year: President, H. G. Street, Hebron; first vice-president, L. R. Bryant, Princeton; second vice-president, Robin S. Hartwell, Dixon; third vice-president, L. H. Cutler, East Dubuque; secretary, Frank Hays, Wyanet; treasurer, Chas. Hey, Dixon.

Ohio Horticultural Society.

The next annual meeting of the Ohio Horticultural Society will be held at Marietta on January 23 to 26, 1912. In conjunction with it will be an apple show. A fine display is anticipated, as $1,500 is to be given as prizes. As a law went into effect last November in Ohio demanding that where one has ten or more fruit trees, they must be sprayed, it is believed that a great deal of good will come from this meeting towards making Ohio orchards producers of better crops and better profits.

Michigan Fruit and Apple Show.

A fruit show of much interest and value was held by the Western Michigan Development Association at Grand Rapids on November 7 to 11. The displays represented the districts embracing the twenty counties, from Kent on the south to Emmett on the north, and contained a fine representation of the fruits of commercial importance to that locality.

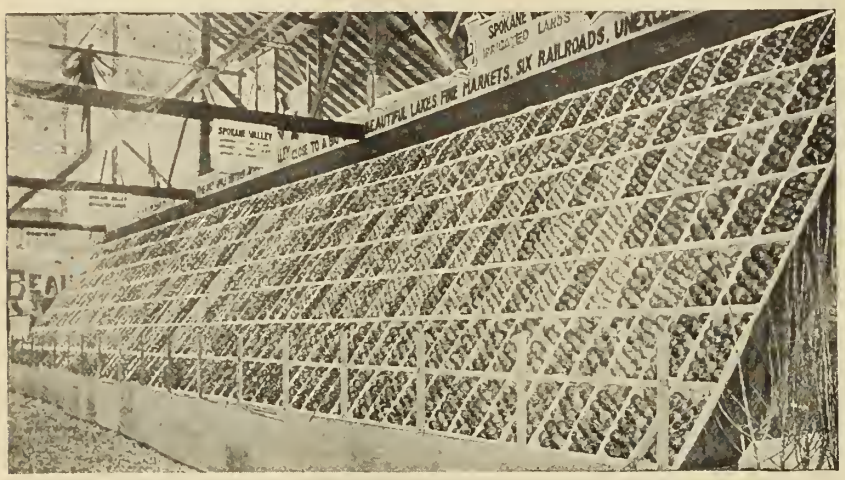
Accompanying the show were lectures on all phases of horticultural work, including packing demonstrations by professors from the Michigan Agricultural College.

The Cornell Fruit Exhibit.

The fifth annual fruit exhibit of the department of pomology was held at the New York State College of Agriculture, Ithaca, N. Y., November 1st to 4th. This year's exhibit brought out some nuusually attractive collections of fruit, and surpassed even the high mark set by that of 1910. Nearly every important apple region in the United States was represented, exhibits having been sent from Washington, Oregon, Utah, Colorado, Michigan, Ohio, Pennsylvania, Virginia, West Virginia, Connecticut, and Massachusetts, in addition to the New York State exhibits. In all there were about six hundred plates, representing about ninety varieties, displayed. Nearly an entire table was devoted to pears, about thirty-five varieties being displayed.

One of the most attractive features of the exhibit was a solid bank of boxed fruit. This fruit was grown on an old orchard in Central New York, which had been neglected for many years and had then been given good care for one year. It compared favorably with fruit grown on western orchards having a valuation of $1,500.00 per acre.

Throughout the four days, during which the exhibit was open, the rooms were filled with students, townspeople, and visiting growers. Such exhibits as this are important factors in giving the public and the fruit-growers an idea of good fruit.



EXHIBITION CAR FROM SPOKANE VALLEY AT THE FOURTH NATIONAL APPLE SHOW, SPOKANE, WASH., NOV. 23RD TO 30TH

Another Cooking Contest for Apples.

A second cooking contest of varieties of apples was made at the recent Spokane Apple Show, and Grimes Golden won first honors in the "pie class." Rome Beauty was decided to be the best baking apple, while Winter Banana, according to the judges, made the best apple sauce. Miss Laura Breese, domestic science instructor at the University of Idaho, and her class, conducted the cooking test, ten men and ten women acting as judges. The varieties of apples entered for this test were Winter Banana, Grimes Golden, Rome Beauty, Winesap, Stayman Winesap, Arkansas Black, White Winter Pearmain, Babbitt, Jonathan, Delicious and York Imperial. Each apple was cooked in three ways: Baked, made into pie, and made into sauce. The baked apples were judged on three points: Color, general appearance and taste. All were cooked without sugar.

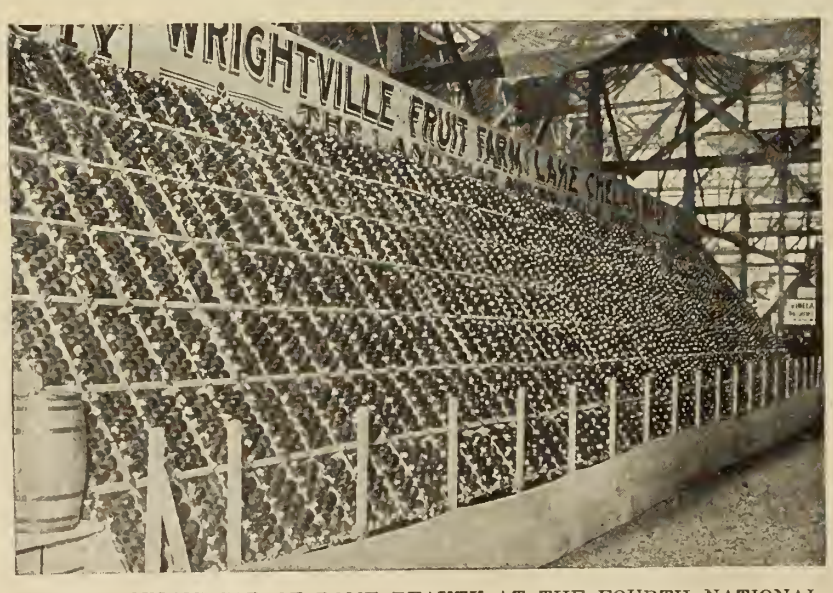
In the baking contest, Babbitt received six votes as being the best color, and Arkansas Black received four votes; no other variety got a vote. On general appearance after baking Arkansas Black received seven votes, Jonathan one and Rome Beauty two votes. In tasting the baked apples, Rome Beauty easily won out, getting eight votes, Jonathan one and White Winter Pearmain one.

Arkansas Black won eight votes for having best color when made into apple sauce, and Rome Beauty received two votes. On general appearance Arkansas Black received seven votes, Rome Beauty two and Jonathan one. For best-tasting apple sauce Winter Banana received six votes, White Winter Pearmain two and Stayman Winesap one.

The pies were judged for taste only, and Grimes Golden received eight votes as first choice; one judge had been called away for this contest, and the tenth judge was unable to decide which pie was best. For second choice of the pies, four judges chose Babbitt and two Jonathan.

Time of cooking the various apples varied greatly, the score standing as follows in the baking contest: Delicious, 38 minutes; Jonathan, 54 minutes; Stayman Winesap, 35 minutes; Winter Banana, 51 minutes; York Imperial, 64 minutes; Arkansas Black, 63 minutes; Babbitt, 44 minutes; Grimes Golden, 49 minutes; White Winter Pearmain, 49 minutes; Winesap, 50 minutes; Rome Beauty, 20 minutes.

In making the sauce the score was as follows, Babbitt not being entered in this contest: Arkansas Black, 7; White Winter Pearmain, 9; Delicious, 7; Jonathan, 14; Stayman Winesap, 8; Rome Beauty, 8; York Imperial, 25; Winesap, 19; Winter Banana, 10; Grimes Golden, 10.



PRIZE WINNING CAR OF ROME BEAUTY AT THE FOURTH NATIONAL APPLE SHOW. R. P. WRIGHT, LAKE CHELAN, GROWER

This contest is most interesting, in giving a line on the relative merits of different varieties for different purposes. It would be interesting to know just how the apples would have scored, if sugar had been added. It is significant that when taste of the sauce, pie and baked apples was considered the mildly acid apples won out. If sugar had been used, we suspect that Jonathan, Winesap and Stayman Winesap would have made a much better showing.

Horticultural Society Meetings.

Ohio at Marietta, January 23 to 26; Tennessee at Nashville, January 25; Missouri at Columbia, January 9 to 12; Western New York at Rochester, January 24 to 26; Alabama at Jasper, January 25 and 26.

$4,200 Interest

THIS IS THE AMOUNT WE PAID OUR BOND-HOLDERS IN 1911

Can't you see the wisdom of an investment in our Seven Per Cent First Mortgage Gold Bonds?

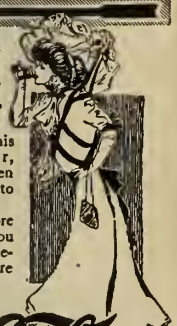
Now is the time to buy, so that your interest will begin with the new year.

The Bonds have coupons attached, and are of $100 denomination, with interest payable July 1 and January 1. They mature July 1, 1917.

We invite careful investigation and refer by permission to the First National Bank of St. Joseph. Write at once to

The Fruit-Grower, St. Joseph, Mo.

You will want the 1912 Coca-Cola Girl Calendar



We will send you this beautiful Calendar, lithographed in sixteen colors, on receipt of 2¢ to cover postage.
The Coca-Cola girl is more fascinating than ever—you will like her. She will remind you that whenever you're tired or thirsty to

Drink **Coca-Cola**

the one beverage that will refresh you, quench your thirst and please your palate.

Our new free booklet, telling of Coca-Cola vindication at Chattanooga, for the asking.

THE COCA-COLA CO.,
P. O. Box 1734
Atlanta, Ga.

Whenever you see an Arrow think of Coca-Cola.

Strawberry Plants

Grownas a Specialty

You go to a specialist in other lines of business because you know you will get the best service. This applies to growers of strawberry plants as well. Give us a trial and be convinced. We have a large stock of plants for Spring of 1912. Our collection contains 30 of the standard varieties, the best obtainable of the different seasons and adapted to all sections. Under our methods of propagation this stock is as fine as can be grown. All plants from new beds and guaranteed true to name. Taking advantage of our location we guarantee safe arrival of all plants to any point in the United States when shipped by mail or express. Catalogue now ready. We are growing strawberry plants to sell. We sell them. There is a reason.

D. McNALLIE PLANT & FRUIT CO.
SARCOXIE, MISSOURI

PEACH TREES APPLE

TWO CENTS AND UP

STRAWBERRY PLANTS, SHADE TREES, PLUM, PEAR, CHERRY, Etc. Splendid Stock. NO AGENTS. But sell direct to planters and save 75 per cent. Free Catalogue.

TENNESSEE NURSERY COMPANY
BOX 100. CLEVELAND, TENNESSEE

Poultry or Garden, Which?

Why not both?

There's no conflict between hens and gardens, if both are in the proper place. The combination is a good one, and every reader of The Fruit-Grower should have both. But, mind you, each must have its proper place.

Now, the February issue of The Fruit-Grower is our annual Poultry and Gardening Number, and we want to know just how you manage this combination to get best results.

Tell us about your gardening experience; what varieties of vegetables you have grown most profitably, and just how you grew them.

Tell us how you dispose of your surplus produce: Do you sell to grocers, direct to the consumers or do you use home-canning outfits, and put up the vegetables for winter?

Have you found any "short cuts" in gardening which save labor or increase yields?

If you have small acreage available for gardening, how do you handle your land to get several crops from the same ground?

Have you ever tried irrigating your garden, in localities where rainfall is usually great enough? Do you have to pump your water; if so, what power do you use? Do you irrigate by means of furrows or do you use the overhead sprinkling system? Does it pay to put in an irrigation system, to use in case of emergency?

Send us a picture of your garden or part of it. Prizes will be awarded for best gardening articles and for best pictures of well-kept gardens. Send in your good pictures, please—and don't forget report of your gardening experience.

And how about those hens? Do they pay for their keep? Do all the hens you have do this? Do you sell eggs or raise early-hatched broilers? Where lies the greatest profits, where poultry is a companion industry to fruit-growing and gardening?

What style poultry house do you prefer? Its advantages or disadvantages?

Do you use the colony system to keep fowls in your orchard?

Poultry manure is the richest manure on the farm. How do you use it to best advantage in your gardening or fruit growing? What crops seem most benefited by its use?

In short, we want a brief report of your experience raising poultry in connection with fruit culture and gardening. The combination can be made a winner—and we want to hear from those who have been successful.

Of course we shall pay prizes for best articles and photographs.

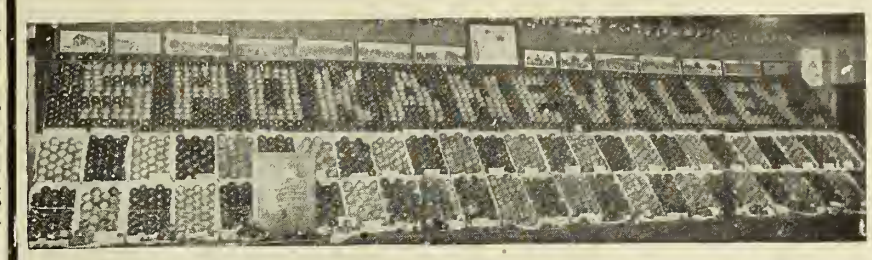
How The Fruit-Grower Helps Its Readers.

At this season of the year, when thousand of Fruit-Grower subscribers are renewing their subscriptions, we get hundreds of the most encouraging letters. We cannot publish many of them, but here is one which shows the real, practical help The Fruit-Grower renders its subscribers:

"Please find inclosed $2, to renew my subscription for three years. I have read The Fruit-Grower for a number of years, and find it keeps up its standard of excellence. I am quite sure that what I have learned from reading The Fruit-Grower has been of great help to me in my orchard work. My orchard of about five acres produced fruit and by-products during the past season to value of nearly $1,100. I sold most of my Grimes Golden apples at $1.20 per bushel, Jonathans at $1.05 per bushel, and Ben Davis at from 75 cents to $2 per barrel, in bulk. Later in the season many growers in this part of the state were compelled to take as low as $1 per barrel for Jonathan and 75 cents per barrel for Ben Davis, and correspondingly low prices for other varieties.

"I am quite sure I owe much of my success in growing my fruit and in marketing it to good advantage to the help I have had from The Fruit-Grower and its crop reports.

Illinois. EDWARD LUTENER.



THE SPOKANE VALLEY EXHIBIT AT THE FOURTH NATIONAL APPLE SHOW
This was the highest scoring exhibit.

Side Lines for Fruit Farmers.

F. B. Wright, of the Wild Rose Orchard Co., Spokane, Wash., writes: "I have been reading The Fruit-Grower about three years, and am very much impressed with it. I am raising a few hogs and contemplate going into the business quite extensively, and want to know what Fruit-Grower readers think is the best breed to raise. Let me hear from 'our folks,' please."

Here's a chance to discuss a subject of increasing importance: Hogs on the farm, and the best breed to raise. Practically all our readers raise hogs; tell us if you keep them in your orchard, and what results follow; tell us what breed you raise, and points in favor of or against that breed.

In connection we will bring up another matter which has been suggested by some of our subscribers at various times. It may be that fruit-growing as a side line of general agriculture is out of date, but it is also true that there are branches of agriculture which can be profitably carried on with fruit culture, and many growers want to have these subjects discussed through our columns.

For instance, there are those who are profitably combining fruit growing with dairying, and many more are thinking of taking up dairying as a part of their work. Now, let's hear from those who keep a few dairy cows on fruit farms. Tell us how your milk and cream are marketed; tell whether you make butter or sell the milk; tell us how you solve the labor problem, and whether or not the combination helps or hinders keeping competent help. We know some fruit-growers who claim they can make good money from the combination, if the cows only pay their own way, for the manure can be used on the fruit farm and will make possible larger yields of better quality fruit. Others make money from milk products and from fruit, and we want to have the subject fully discussed. Tell us your experience.

Then there's the poultry business which should be discussed in the same way. Everyone keeps poultry on fruit farms, but many keep only enough poultry for home use. Yet there are a great many others who make the combination immensely profitable, selling great quantities of poultry produce with their fruits and vegetables. We want to hear from our readers who manage this combination successfully. Tell us what breed of poultry you raise and how your flocks are handled; do you sell fowls or eggs, and if the latter, do you sell for breeding purposes chiefly, or for market?

There are many phases of this subject which should be fully discussed, and we want to hear from our folks on poultry raising and on dairying as companion lines with fruit culture. The combinations work well, and we want to find just how is the best way to handle them. We shall be glad to pay for the best article submitted from Fruit-Grower subscribers on this subject.

High Rate, Poor Service.

In the report to the members of the Ozark Fruit-Growers Association, attention is called to a condition which needs correction by the interstate commerce commission. This report shows that the running time of fruit trains from the Arkansas and Missouri berry districts has been lengthened until forty-eight hours are now required to make the run from Kansas City to Omaha. Freight rates on these shipments are high, says the report, because of special service—but the special service is not given. A concerted demand is to be made for a reduction of rate or a reduction of running time.

There can be no question that these growers have a real grievance. It is a notorious fact that freight rates on fruit shipments are high; in order to reach the minimum weight required by the railroads it is often necessary to load cars until the top layers of crates are not benefited by refrigeration. And yet often train service is so poor that fruits deteriorate in transit until they sell at ruinous prices when put on market.

Let the railroads give the service they charge for, or else reduce the rate. Fruit shipprs are tired of paying extra prices for service they do not get.

Don't forget to lay in your orchard heaters before you need them. With the heavy setting of fruit buds, your orchard should by all means be provided with this efficient means of protecting against frost damage. It is inexpensive insurance.

Plan now to grow high-grade fruit for 1912, and it will not be hard to sell the crop at good prices. Markets are now short of strictly fancy apples, and demand for same is good.

Four Great Special Numbers

This Spraying Number is the first of four great special issues of The Fruit-Grower for this season. Others will be:

February—Poultry and Gardening Number.

March—Annual Small Fruits Number.

April—Farm and Orchard Machinery Number.

These are great subjects, and when they are fully discussed the articles are bound to be most helpful to fruit-growers generally. We have already asked for articles on gardening and poultry. Now we want to urge Fruit-Grower readers to send report of their experience growing small fruits.

We also want them to tell about the farm and orchard machinery which has been successfully used.

A man who uses old, inefficient machinery is as bad as one whose methods are obsolete. Let's help set him right by telling him of the improved machinery which is now available. Have you tried traction cultivators, or have you used traction engines to haul your fruits to market? If so, tell us your experience, whether for or against the use of these machines.

Have you an automobile which has saved you money, or has it enabled you to keep fewer horses? This is an important subject for fruit farmers, whose land must be made to produce to the limit—and we want to have the subject fully discussed in the April issue.

Here's one thing we are going to do to make The Fruit-Grower more helpful:

We're going to visit some of the most successful farmers of America at their homes and get full report of their work. Not all of these men will be fruit farmers, but they will be leaders in their respective lines.

For instance, a lot of our folks are interested in dairying. We will visit an up-to-date dairy farm, secure pictures, etc., and then will publish a story in The Fruit-Grower which will contain just the information you want. Successful poultry plants will be visited also; men who have made a great success raising alfalfa will also be visited, and the story of their experience is bound to be helpful.

The fruit farmer is a progressive individual—and our articles will keep Fruit-Grower readers in touch with the best farmers in the world.

And, by the way, if your subscription has expired, or if this comes to the notice of one not now a subscriber, there's something for you to do NOW:

Send your subscription. A dollar a year, three years for $2, five years for $3, ten years for $5. You want all the special issues, don't you? Then send your check TODAY.

Four Great Numbers in Succession

Send your subscription now, and be sure to get all of them. They will help save you money. The Fruit-Grower, St. Joseph, Mo.

HIGH PRESSURE SPRAYING

Facts Showing That the Greater the Pressure the Greater the Amount of Perfect Fruit

The fruit grower simply needs to look around him to see many most convincing proofs of the value of properly spraying orchards under high pressure. It would scarcely seem necessary at this stage in the advanced growth of Michigan's apple industry, to advise our fruit growers that they must spray their orchards carefully under high pressure in order to make money from their fruit.

There are two reasons why high pressure power spraying pays. The first one is, it is the only possible way in which to keep orchards from going backwards; in fact their very life depends upon it. The second one is, every state in the Union where fruit is grown, proves that when sprayed under high pressure, the fruit is not only of a much higher quality, but is from 60 to 100 per cent greater in quantity and always commands the best market prices.

Yet we can point to many orchards in just as many different counties of our state, where the value of high pressure power spraying evidently has not been heralded from the house tops.

One needs simply to drive along the country road during apple harvest time to see the trees that show no care has been given them. The amount of fruit tells the story without even looking at the trees; in fact, it is a wonder in some cases that any fruit at all is produced.

Not every fruit grower goes into the raising of apples and pears extensively, but whether the acreage of one's orchard be large or small, the best results demand spraying under high pressure. A small hand sprayer no doubt does some good, but it takes just about as much time, uses just about as much solution and costs almost as much to put it on as is necessary with the power sprayer, the only difference is in the outfits used and the results obtained.

The hand sprayer may save 10 to 15 per cent of the fruit that would otherwise be lost. The high pressure power sprayer will save from 90 to 95 per cent of marketable fruit and raise its quality so as to command the best prices. A well sprayed fruit crop does not depend upon the local market, because where the grade is first class and the quality of the best, the fruit is always in demand at a good price. It pays the farmer and the fruit grower to devote his efforts to raising this class of fruit.

Many Michigan fruit growers have had glorious anticipations of a heavy yield, judging by the blossoms in early summer. The small apples would get a good start, but, during the summer, every strong wind would blow down hundreds of them and, upon investigation, every one would be found wormy. Then when harvest time comes, an average of three or four bushels of salable apples would be picked, scarcely bringing enough to pay the tax on the land used.

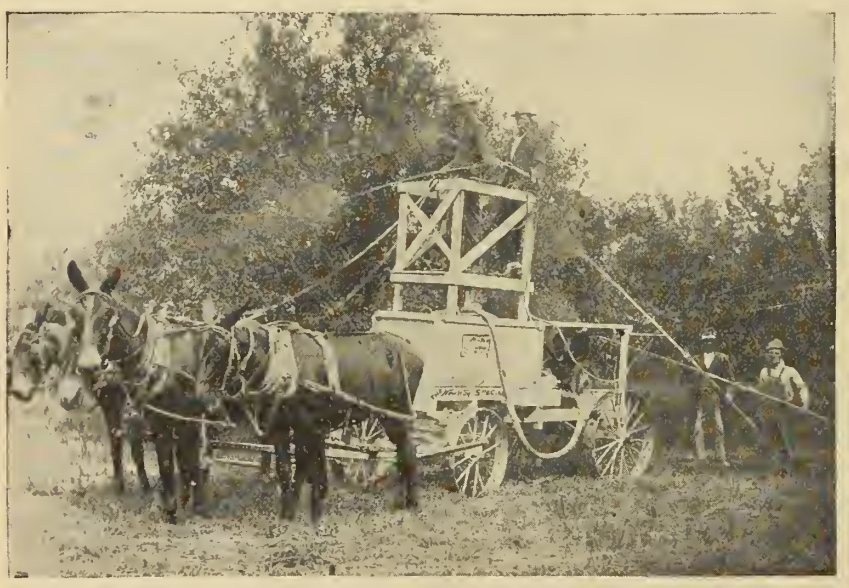
The high pressure power sprayer, when used properly, will solve this trouble. It is not necessary to cut down your old orchard, plant new trees and wait from seven to nine years before obtaining any results from it again.

The high pressure power sprayer will do effective work and quickly free the orchard from these wormy pests. There is not a pest known to the fruit grower that cannot be exterminated, the only trouble has been to know what is the right thing to do. The illustration with this article shows what was done this last season in the orchards of Wright & Company of which Mr. John W. Walls of Watson, Ill., is the superintendent.

How Often Sprayed.

This orchard consists of 188 acres, 180 of which are set out to apples and eight to pears. The orchard was sprayed four times this season, the last spraying was finished June 22d. The times for spraying will vary in different localities and depend on weather conditions, whether the buds and blossoms are backward or early, etc.

A pressure of 200 pounds was used all four times in spraying this orchard. Practically all state horticultural departments in the country find that the best results are obtained in orchards where spraying has been done under a pressure of at least 200 pounds.



NEW-WAY SPRAYER OPERATED BY MR. WALLS

It is simply a short problem in arithmetic for the fruit grower to figure out, and it resolves itself into something like this: Under ordinary conditions if I spray with a hand sprayer, I save about 15 to 25 per cent of my apples as marketable and my crop nets me $500.00 and if I spray with a high-pressure power sprayer, my yield is 150 per cent more. I save 95 per cent of all this fruit as marketable, ot much higher quality, and I get the top notch price for it. My season's yield nets me in direct proportion to the care used and the number of acres under culture. Very few fruit growers will hesitate to own a high-pressure power sprayer after figuring this problem out.

A summary of this year's yield by Superintendent John W. Walls is given below:

Pear Crop.

Total acreage	6
Yield in barrels	500
Value at $4.00 per barrel	$2,000

If these six acres are considered worth $200 per acre, this year's crop easily paid from 100 to 125 per cent on the investment. If 10 per cent would be considered a fair rate of return on the investment, then these six acres would be worth to the owner at least $2,000 per acre.

Apple Crop.

Total acreage	180
Yield in barrels	5,500
Value at $3 per barrel	$16,500

It is impossible at this dato to

How One Man Shows His Appreciation of The Fruit-Grower

The other day a little circular urging him to subscribe for The Fruit-Grower fell into the hands of a man already a subscriber, Mr. S. L. Rand, of Illinois.

Appreciating the great help The Fruit-Grower has been to him, Mr. Rand promptly wrote across the face of the circular his personal indorsement of our paper, and sent it to a friend interested in growing fruit, and urged him to subscribe.

Result: This friend promptly sent $2 for a three-year subscription to The Fruit-Grower.

Nor was this all. Mr. Rand then wrote us for some more of the circulars, to send to other persons interested in fruit culture.

This is showing real appreciation of The Fruit-Grower and its work, and we urge all our friends to do as Mr. Rand has done: Try to get your friends and neighbors to subscribe for The Fruit-Grower.

The Fruit-Growers circulation of 100,000 copies monthly has been built up by just such help as Mr. Rand has rendered. Our subscribers have always been most loyal, and on our part we have tried to show our appreciation of this co-operation by making The Fruit-Grower a better publication. That we have continually improved our paper is apparent to everyone who has known The Fruit-Grower through the years.

Now for the future:

Friends, we believe the fruit industry is entering upon a period of great development—in fact, we believe the future of the business is very, very bright. The business is getting down to a business basis now.

The fruit industry needs a strong, up-to-date publication, devoted to the interests of the growers. It needs one paper which shall be backed by all those interested in fruit culture, and we are determined that The Fruit-Grower shall be that paper.

Our subscribers tell us The Fruit-Grower is the best fruit paper published, and we are determined to keep it at the head of the procession. It needs your co-operation, first, in extending its influence by getting new subscribers and, second, by your reporting your experience for the benefit of all fruit farmers.

Just now we want you to help us increase our circulation in your neighborhood. We cannot go to the expense of sending a man to your neighborhood, and then furnish The Fruit-Grower at $1 a year. It would cost too much to get subscribers.

But you can get your neighbors to subscribe and, really, we believe you owe it to us to do this much for The Fruit-Grower. We go to almost any length to serve you—we are subject to your call at any time—and we want this help from you.

No one else will look after your neighbors. Thousands of our friends will send subscriptions of their neighbors, but the list from your locality must be secured by you.

Now's the time to do this work. Get these subscriptions at once, and they can start with January number—we will save a number of copies to send to those whose subscriptions are sent at once. Get up a club now, and give your neighbors the benefit of our spraying articles—if they spray effectively, it will mean fewer insects in your orchard.

We're counting on the help of everyone who reads this. And on our part we promise to do all we can to advance the interests of members of The Fruit-Grower Family—and that's the folks whose names are on our subscription list. Let's work together and make fruit-growing the most profitable branch of agriculture, and the most helpful to humanity generally.

The subscription rates of The Fruit-Grower are $1.00 a year, three years, $2.00; five years, $3.00; ten years, $5.00. To anyone sending remittance of $3.00 for five years, or $5.00 for ten years, we will send free prepaid, a copy of the cloth bound edition of the Fruit-Growers Guide-Book. It contains nearly 300 pages, nicely illustrated, and thousands of copies have been sold at the regular rate of $1.00 per copy. This book should be in the home of every fruit-grower.

If you will send in two new subscriptions, with remittance at regular rate, your own subscription will be advanced without extra charge. This applies on long time subscriptions, as well as one year subscriptions. In other words, if you send two three-year subscriptions, at $2.00 each, with a remittance of $4.00, your own subscription will be advanced for three years, or just the same as though you had sent in a $2.00 remittance yourself. This applies of course, to five and ten year subscriptions as well.

Everyone who renews during the next thirty days will receive free, a copy of our Brother Jonathan Calendar, 7x11 inches, printed in three colors. We want to place Brother Jonathan's smiling face in the home of every member of The Fruit-Grower Family. Ask for the calendar when you renew.

With best wishes for the best year you have ever known,

The Fruit-Grower St. Joseph, Missouri

THE FRUIT-GROWER, St. Joseph, Mo.:

I inclose remittance of $....., for which enter the following:

.....

.....

.....

.....

Name of Sender.....

Town.....State.....

figure the exact amount of expense in spraying the orchard, pruning the trees, harvesting the crop, hauling the barrels, etc., but it is quite evident that the above figures show a nice, tidy sum on the profit side of their apple account for this year.

The apple orchard consists of Jonathans, York Imperials and eighty acres of Ben Davis. The Jonathan and the York Imperial apples were entirely free from worms. About six acres of the Ben Davis apples were wormy. This is accounted for by not being able to give them as much attention at the right time as the rest of the orchard, but next year Mr. Walls says he won't have a wormy apple on his trees.

The pears and almost all of the apples are now in cold storage and will be placed on the market at a time when the price looks best. This will make the figures above prove even better than shown.

Any farmer or fruit grower who has four acres or more of fruit orchard will find it will pay him to have his trees sprayed under high pressure. The smaller orchardists can very easily get together and two or three of them buy one outfit. This has worked very successfully in a number of places, and by having the orchards close together, very little time is lost in getting around and spraying just when weather is most favorable.

Many farmers also find that the power sprayer is a profitable outfit for them every day in the year. Some manufacturers use an engine that is suitable for all kinds of farm work when the sprayer is stored away; in fact, it pays the fruit grower to buy his sprayer and get two outfits in one and have an engine that can be used every day in the year. These double-purpose outfits make the high pressure power sprayer even more profitable.

The orchards that are paying investments now are looked after, pruned, fertilized, sprayed under high pressure at different times, so as to kill the moth, and prevent wormy fruit, destroy the scale, prevent the scab, and bring a full yield of fruit to the harvesting. The careful use of the high-pressure power sprayer does it, makes the progressive fruit grower realize a fine return on his investment, while the backward owner mourns over his losses. J. H. BROAD.

Michigan.

Successful Spraying by Following The Fruit-Grower's Directions.

Last spring I read the articles on spraying in The Fruit-Grower, and followed them and succeeded beyond anything I had ever dreamed of. My experience may help others. I am a city man, and five years ago my family and myself moved to a five-acre farm, mostly planted to fruits of all kinds. We added a few colonies of bees, a horse, a Jersey cow, one pig and a fine lot of Barred Plymouth Rock chickens. We wanted a combination of bees, poultry and fruit, and we wanted to produce most of the food needed by the family. I have about 300 pullets laying, all having been hatched in incubators. The horse and cow stable and the poultry house are cleaned daily and the manure taken immediately to the garden or orchard and spread out. In the autumn I put little mounds of earth about the trees, trim them and make little piles of the trimmings here and there, so rabbits will eat them and not bark the trees.

Early in spring, before growth starts, I spray all trees with lime-sulphur, making the solution myself. My outfit consists of a small steam boiler to boil the lime and sulphur, and I use twenty pounds of lime and fifteen pounds of sulphur to fifty gallons of water, according to the government formula. I use a hand pump, mounted on a fifty-gallon barrel. The spray mixture is poured into the small opening of the barrel, through four thicknesses of window-screen wire; this seems to me more effective than to use a special strainer, and I have had no trouble from clogging of nozzles. We use a twenty-foot lead of hose, with an eight-foot extension rod. All trees are thoroughly sprayed while dormant.

For our second spraying we use a different strength of lime-sulphur, making it of 110 pounds of sulphur, 60 pounds stone lime and thirty gallons of water; this is boiled for one hour and then diluted to make sixty gallons. After standing twenty-four hours to cool and settle this mixture is strained through four thicknesses of window screen into casks. The mixture made in this way was 30 degrees strength, Baume scale, and when we sprayed our trees we used one gallon of this mixture to twenty-five gallons of water for apple trees, and one gallon to thirty gallons of water for peach and apricot trees, and one and one-half gallons to fifty gallons of water for plum trees. When necessary for controlling insects, two pounds of arsenate of lead paste was added to each fifty gallons of the spray liquid. We sprayed apple trees just after petals had fallen, and again a month later, making three sprayings in all.

We maintained a pressure of 100 to 120 pounds with our hand pump, one man driving and working the pump, and one man spraying; part of the time the man with the extension rod was on the wagon, to catch the tops of trees, and part of the time on the ground. Our results were surprisingly good, and trees from which we had never been able to harvest any were so loaded that we had to thin off the surplus fruit. It certainly paid to thin, for our fruit hung to the trees well, and severe winds did not blow it off.

Our trees were kept cultivated and poultry running in the orchard certainly helped control insects. Our experience has certainly been satisfactory, and we know that three sprayings pay big returns.

Missouri. F. F. MILTENBERGER.

Lime-Sulphur Solution.

Quick Lime.....20 pounds
Flour or Flowers of Sulphur 15 pounds
Water .....50 gallons

Slack the lime in a kettle or barrel, add the sulphur to the slaking lime, stirring well. When the lime has all slaked add enough water to thin the mass and boil hard for 45 minutes or one hour. A deep orange red or greenish solution will result and after the boiling is finished add the remainder of the water, and enough more to make up what was lost through evaporation, and should test 25 to 30 per cent on the Baume scale. It is ready to use as soon as made and may be applied hot or cold. This mixture is for use in controlling San Jose scale and is to be applied only while the trees are dormant. It must be diluted still more for use in summer, but the "self boiled" mixture is still better as a summer spray.

How to make Kerosene Emulsion.

Kerosene .....2 gallons
Whale Oil or Laundry Soap ½ pound
Water .....1 gallon

Disolve the soap in hot water and while still hot add the kerosene. Churn this mixture very hard, or pump it back into itself until the mass becomes thick and cream like. When well mixed it will remain in that condition for any length of time. For use on dormant trees dilute with 5 to 7 parts of water and for use on foliage use 10 to 15 parts of water. This material is useful in controlling plant lice and other sucking insects that attack plants.

Strawberry growing is receiving a great impetus throughout the Ozark region of Arkansas. Plans are being instituted in a number of different sections for enlarged acreage to be set the coming spring.

Ask your neighbor to subscribe for The Fruit-Grower.

$1000 CARLOAD PRIZE

630 Boxes Apples at National Apple Show were sprayed with

THE "New-Way" Gear Driven
High Pressure Power Sprayer

200 LBS. PRESSURE constantly, all day long does the work. The "NEW WAY" is built to give this high pressure for many years.

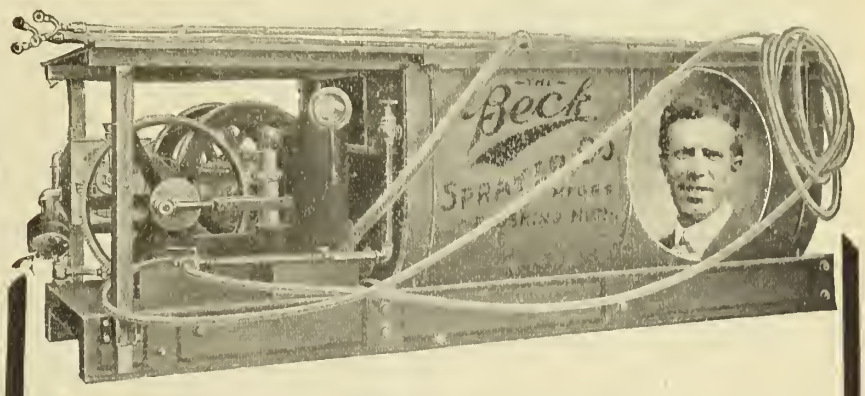
THE ENGINE IS THE MOST IMPORTANT part of the sprayer. The "NEW WAY" air-cooled is a farm engine for every day in the year and can be removed from platform in a few minutes to do other work. This gives two outfits in one. The ordinary sprayer engine is a small toy that will only pump water.

STRAIGHT DRIVE SHAFT WITH GENUINE BABBITT BEARINGS about 1 inch apart will never give way nor break under high pressure. The ordinary bent shaft is too light, has bearings nearly 12 inches apart and cannot stand the strain of high pressure for all day spraying. Reduced pressure means poorer grade of fruit.

THE LIGHT WEIGHT OF THE "NEW WAY" outfit permits rapid all day spraying on hill sides, over soft or plowed land. The ordinary outfit is too heavy to be practical and too clumsy for rapid work. Rapid Spraying is what counts. The "NEW WAY" has the right weight and capacity to do rapid work under 200 lbs. pressure, and keep it up for years.

Write for Sprayer Catalog No. S1

THE "New-Way" MOTOR COMPANY 25 ASH STREET
LANSING, MICHIGAN, U.S.A.



Beck Sprayers
Lead the World in High Pressure and Efficiency

Our 1912 Outfits maintain 250 and 300 pounds working pressure in the field without the least indication of over-strain.

Mr. Fruit Grower: You can save money, time and trouble by purchasing one of our power sprayers.

Send for Descriptive Catalog of our power and hand sprayers and accessories.

Beck Sprayer Company
Lansing, Michigan

COMPRESSED AIR POWER

Specially Built Spraying Machine in Use on an Eight Hundred Acre Kansas Fruit Farm

Spraying by mean of compressed air, where the power which drives out the spray liquid comes from a tank of air contained under high pressure, is not a new idea, but one which has not found wide application. There are spraying machines in commercial use which derive their pressure from tanks of gas under heavy pressure, but not so many where the pressure from compressed air is relied upon to furnish the power. One of the important reasons for this is that not many people are in position to equip themselves with an air pumping plant for compressing the air, in addition to their spray mixing station, which they necessarily must have.

At the orchard of the Missouri Valley Orchard Company of Kansas there is a spraying equipment of unusual interest. This equipment is remarkable in one respect for it has been designed and constructed under the direction of the manager of the orchard, Mr. Geo. C. Richardson. This equipment consists of spraying machines which derive their power from compressed air; a mixing station where the spray materials are prepared, pumping plant for compressing the air, and wagons of Mr. Richardson's own design for carrying the spray tanks.

Stories of this orchard have appeared in The Fruit-Grower before, and it will be remembered that Mr. Richardson is a genius in the way of inventing plans, ideas and machines for saving labor and doing work which enables the production of a more profitable orchard. This spraying equipment shows his inventiveness more fully than any other thing about the place. The mixing station is located in about the center of the 800 acre orchard along side of a pond from which the water for spraying is obtained. This plant is now housed in a substantial building, but at the time of my visit last spring, was uncovered, and could be moved at almost a moment's notice to any portion of the orchard where it might be needed. The plant consists of a steam boiler, mounted on wheels, which furnishes the steam for cooking the lime-sulphur. On a wagon of rather unusual proportions where the cooking vats in which the lime-sulphur was prepared, and which had a capacity of 6,000 gallons daily, and as the boiler was fired with oil, in which twenty cents worth of oil served for an entire day, the expense of cooking their own spray mixture was not great from that standpoint. Lime cost 50 cents per hundred pounds and sulphur $1.75 per hundred pounds, so that the material for 600 gallons of lime-sulphur costs $2.15, the formula calling for 80 pounds of lime, 100 pounds of sulphur and 600 gallons of water.

The lime is slaked in a box, mixed with the required amount of sulphur and the whole mass in them emptied into boiling water in one of the cooking vats. It is kept boiling for forty-five minutes by live steam in the coils of pipe inside the tank, then drawn off to cool, and finally pumped into the spray tank that is waiting, along with a tank of compressed air.

At spraying time there is usually one machine at the station, one on the road from the orchard and two machines in the orchard pouring out on the trees their load of liquid. In this way only two spray men are required together with three drivers. The driver who comes in from the field has no waiting to do, for there is a loaded tank of material at the station waiting for him, and all he has to do is unhitch from the empty and hitch to the loaded wagon and go.

These spray tanks and wagons are entirely of the design of Mr. Richardson. He has two different styles, but the principle on which they work is practically the same. In one style there are two upright, galvanized steel tanks, placed side by side on the wagon. In the other style the tanks are placed horizontally and one above the other. This is the newer design, and the one which is liked the best by Mr. Richardson, for reasons which he indicated later.

In one of these steel tanks the liquid is placed and in the other the compressed air. The air is delivered into the liquid tank through the bottom, in which it must bubble through the mixture and keep it continually agitated, and this bubbling, combined with the jarring of the tank as it moves over the ground keeps the liquid continually stirred so that there is no settling whatever of the poison. Valves are arranged so that the air can be shut off from the liquid tank if necessary, but when the machine is in operation this valve is open. Then as the air is turned into the liquid tank it forces the spray material out through an opening in the bottom, to the pipe leading to the spray tower.

In the horizontal tank the liquid is placed in the top tank and the compressed air in the bottom one. Connections are made at each end between these tanks, and when the valves are opened the air bubbles up through the liquid, forcing it to flow into the lower tank, out of which it passes at either end on the lowest side into the pipe leading to the spraying tower and from there to the trees.

This spraying tower consists of a three-quarter inch water pipe placed at an angle of forty-five degrees and carrying six or eight nozzles some of which are placed on angle joints so that every portion of the tree can be reached.

These wagons, when loaded are heavy, and on wet soil necessitate the use of four mules, but as the wagons move continuously time is saved, and with six or eight large nozzles, and the liquid drived by the two hundred pounds of air pressure a regular deluge is very quickly applied to the trees. Each liquid tank holds 200 gallons; and through the Friend or Scientific nozzles that are used, a tankful can be applied to the trees in a space of about fifteen minutes.

Mr. Richardson has been using this equipment for four years and has found it to be a very efficient method of spraying his big orchard. While it is a "rapid-fire" process, the sprayers pour out an enormous quantity of material under high pressure to the very last, and even though the sprayer does not stop at each tree, after the sprayer has passed the trees are fairly dripping with the liquid. The two men who operate the spraying nozzles or towers do the work, and are able to cover the entire 800 acres during the few days that are available for making the first application for the codling moth. There is no complicated mechanism to get out of fix, and the spraying outfits that are in the field have no cause to stop and waste time for any other purpose than that of clearing a clogged nozzle. Even this is not of frequent occurrence as the liquid is carefully strained through a very fine strainer before it enters the tank.

This spraying equipment is entirely of the design of Mr. Richardson and the Missouri Valley Orchard Company's trees over which Mr. Richardson has had the management since the scions for them were collected, is the only orchard in the world having such a unique and thoroughly efficient spraying equipment.

THE MIXING STATION

On the platform at the right the man with the hoe in his hand is slaking lime preparatory to make into spray mixture. The horizontal cylinder, next to the left, is the storage tank for compressed air. Next to it are two cooking vats for cooking the mixture. The man wearing the white jacket is leaning against the gasoline engine that drives the air compresser and back of him is the steam boiler for furnishing the steam to cook the lime-sulphur. In the front are three of the compressed air spraying machines.

COMPRESSED AIR SPRAYING OUTFIT IN ORCHARD OF MISSOURI VALLEY ORCHARD COMPANY

Ozark Fruit-Growers' Association Report.

The report of the Ozark Fruit-Growers' association for 1911 makes interesting reading and calls attention to some abuses which should be corrected. It was found that strawberry shipments last spring did not carry well in every case, and the fault is laid at the door of the railroads. Time schedules have been lengthened, until frequent icing will not save tender fruits like strawberries from damage.

"It has been a stock argument of the transportation companies, in justification of the excessively high rates on perishable fruits, that the speedy service rendered is expensive, and the high charge is necessary to furnish such service, but now they have abandoned the service, and persistently adhere to the rate," says the report. "Forty-eight hours from Kansas City to Omaha a distance of 200 miles, may do for pig iron, but it is too slow for strawberries."

The report urges that fruit-shipping associations require railroads to give fruit shipments more expeditious service. It is urged upon the members to use standard crates and boxes, and not to ship berries packed in short boxes in the future.

During the season of 1911 the Association sold on track 262 cars of strawberries; 28 cars were consigned, and the total number of cars amounting to 290, containing 146,449 crates of fruit. The highest price received for strawberries was $2.65 per crate, this honor going to the Pierce City Association; the Republic Association was second, with $2.50 per crate as top price. The lowest price received where fruit was sold on track was $1.75 per crate. It is interesting to note the difference between prices received on track and prices paid for consigned fruit. The highest price paid where fruit was consigned was $1.88 per crate, while the low mark was 41.7 cents per crate. It is fair to assume that the fruit consigned was somewhat off in quality, or the on-track buyers would have taken it, but still the great difference in price is hardly to be accounted for in this way.

The average gross price per crate for all fruit shipped, whether sold on track or consigned, was $2.12 per crate which netted the growers an average price of $2.05 per crate. Gross sales amonuted to $309,647.61. This is against a total of $228,786.43 for 1910, and a total of $388,694.01 for 1909.

The Ozark Fruit-Growers' Association has done a great work for the fruit-growers in Southwestern Missouri and Northwestern Arkansas, and the record already made is but a beginning of what is expected to follow. Nearly every shipping station has an association, and all are affiliated with the Ozark Association. The manager of the latter, Mr. P. A. Rodgers, knows every night the number of cars of berries shipped from every point in his territory, and the destination of the same. Whether fruit is shipped on consignment or sold outright, every effort is made to avoid glutting any market, and the organization has been most successful in securing proper distribution of berries and other fruits, and in receiving good prices therefor.

The Spraying Season

Is Close Upon Us—Get Your Orders In

MECHANICAL AGITATION

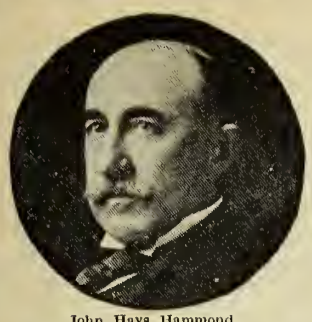
W. H. Owen Sprayer Company

Sandusky, Ohio

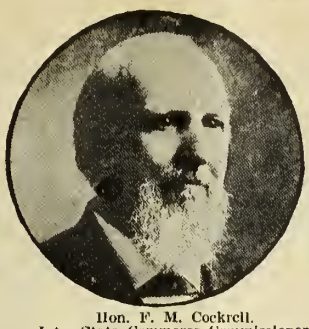
Superior Trees, All Kinds

Apples, peaches, plums, cherries, etc. See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."

WINFIELD NURSERIES



John Hays Hammond.
International Mining Authority.

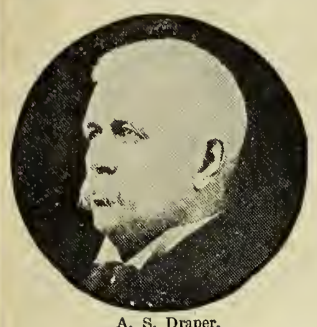


Hon. F. M. Cockrell.
Inter-State Commerce Commissioner.

Frederick Converse Beach, Ph. D.
Of the Scientific American.
Editor of Encyclopedia Americana.

John H. Finley, Pres.
College of the City of New York.

David Starr Jordan, Pres.
Leland Stanford University.



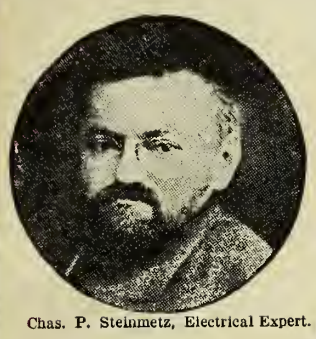
A. S. Draper.
Com'r of Education, State of N. Y.

Before You Purchase an ENCYCLOPEDIA at any Price

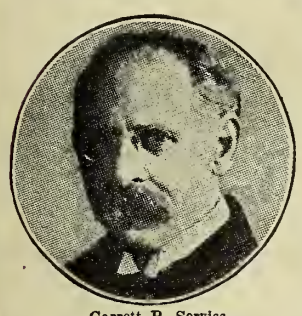
INVESTIGATE

The New 1911 India Paper Edition of The

Encyclopedia Americana



Chas. P. Steinmetz, Electrical Expert.



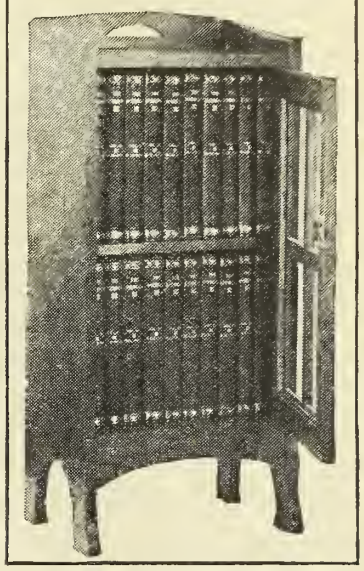
Garrett P. Serviss.
Writer on Astronomical Topics.

Edited by Frederick Converse Beach of the Scientific American and embodying the combined educational effort of over 2,000 eminent authorities

A Few of the More Than 2,000 Editors and Contributors:

Cardinal Gibbons	Hugo Muensterberg	Austin Dobson	Joseph Silverman
Marquis Ito	Edmund Gosse	John Hays Hammond	Garrett P. Serviss
President Hadley	Goldwin Smith	Andrew S. Draper	Josiah Strong
Simon Newcomb	Ernest Von Halle	William T. Harris	John Muir
Admiral Dewey	Edward Everett Hale	Benj. Ide Wheeler	General Corbin
David Starr Jordan	Hilaire Belloc	Carroll D. Wright	Count Candiani
Dr. William Osler	Henry van Dyke	Levi P. Morton	Vice-Admiral Saito
Andrew Carnegie	Dr. Parkhurst	James B. Dill	Captain Mahan
Joseph H. Choate	Rabbi Hirsch	Elihu Thomson	

A Beautiful Gift



FREE!

THIS HANDSOME BOOK-CASE FREE WITH EVERY ORDER DURING JANUARY

How to Judge an Encyclopedia

A disinterested authority would consider many points in recommending an encyclopedia. Necessarily, it must be **authoritative** and **complete**—**everything you** want to know fully told—the salient facts. AND MORE IMPORTANT—the definitions must be so that **you** can understand them, so **your children** can understand them. Further, there must be proper balance and proportion—important subjects more completely covered than items of less general interest. An encyclopedia should simplify technical subjects—delineate the complex and abstruse, the involved and intricate so that the reader who goes for **information** actually gets it. THE ENCYCLOPEDIA AMERICANA measures up to this standard. It is the **logical** Encyclopedia.

22 Volumes	**2,540 Illustrations**	**126 Color Plates**
2,387 Special Contributors	**65,287 Special Subjects**	**160 Maps**

The 1911 India Paper Edition

The paper on which this edition is printed is opaque, yet so thin that each volume bulks only one inch, as against the three-inch bulk of the old style reference volume. The entire set of **twenty-two volumes** takes up but twenty-two inches. It can be kept upon the office desk or library table for ready reference, and read as conveniently as a magazine.

Valuable Booklet Mailed Free

The publishers have prepared a sample-page descriptive booklet of the Americana, which should be in the hands of everyone who has a library, large or small. This booklet will be mailed free upon request.

Cash for Your Old Encyclopedia

If, in sending the attached coupon, you will advise us the name and date of publication of your old encyclopedia, we will make a liberal allowance in exchange for a set of Encyclopedia Americana.

INVESTIGATE TODAY

Scientific American Compiling Department

PUBLISHERS OF THE AMERICANA

225 Fifth Avenue **NEW YORK**

SEND THIS TODAY FOR QUICK MAILING CONVENIENCE COUPON.

F.-G.

SCIENTIFIC AMERICAN COMPILING DEPARTMENT
225 Fifth Av.,
New York

Send me full particulars about your distribution of the **Encyclopedia Americana** with explanatory pamphlet and actual pages from the work.

Name.....

Address.....

Also state basis of exchange proposition:
I own the.....encyclopedia
published by.....Date.....

ELECTRIC LIGHT ON THE FARM

Up to the present time the practice of lighting farm buildings by electricity has not been popular. A few of the more wealthy and progressive farmers have installed private plants for this purpose, but the majority of the well-to-do farmers who have considered it at all have deemed it an extravagant luxury. While it is true that the cost of electric light on the farm is considerably above that of kerosene, considering the first cost, yet the comparison between the two is as favorable, if not more so, to the electric light as the comparative costs of an automobile and a horse and buggy are to the automobile. These is some room for argument concerning the comparative advantage of the electric light and the automobile over their competitors, the kerosene lamp and the horse and buggy respectively, but in the writer's opinion the electric light is more a necessity and less an extravagant luxury than is the automobile. Today it is no uncommon occurrence to find in a well-to-do community, every third farmer the owner of an automobile, but it is a rare occurrence to find a farmer blessed with the convenience afforded by the installation of a small private lighting plant.

The conveniences of electric light for the farm house and outbuildings on the farm are undisputed, but its practicability is not so generally acknowledged, or I might better say, understood. In the vast majority of cases it has not even been considered.

Some of the reasons for this, which appear to the writer, are as follows: First the seemingly prohibitive cost of installation. Second, the fear of coming in contact with live wires. Third, the fear of its causing fire. Fourth, that it requires a man with electrical knowledge to operate the plant.

Of the above reasons, the first is the only one which can in the least be considered a reason, and it has in a large measure been removed by the advent of the "Tungsten" lamp, which has come into use in recent years. It takes approximately one-third the amount of electricity for a given amount of light which lamps prior to its advent required, and hence for a given amount of light the capacity of the necessary plant is cut to one-third that formerly required. The second reason is unfounded. A voltage higher than thirty volts is seldom used and a child can come in contact with that without fear of injury, and an adult can come in contact with 250 volts with very little danger of serious injury. The third reason is erroneous, as the danger of fire from electricity in a well wired house is practically nil, which is more than can be said for kerosene lights. The fourth reason is without grounds, as any intelligent person can, by following the simple instructions given by the manufacturers, operate the plant with perfect satisfaction.

At present, complete equipment, consisting of engine, dynamo, storage battery, switchboard and all auxiliary apparatus with sufficient capacity for the large majority of farms can be had from a number of companies at a cost not exceeding $400. Adding to this $250 for wiring of buildings, fixtures and building to house the plant, it makes the complete cost $650. The capacity of the plant may be doubled at an additional cost of about $200.

The engine need be operated for a period of about eight hours at intervals of from two days to two weeks, depending upon the amount of light used and the capacity of the plant, the light being drawn between times from the storage battery. During the charging period the plant does not need constant attention and a man working about the farm or the housewife can do all that is necessary at intervals of about two hours each.

Considering the great advantage which such plants have, and their lack of disadvantage, I hope the time is not far off when they will receive the attention which they merit and, as a result, become at least as common on the farm as the automobile.

F. H. ROSENCRANTS.
Colorado Agricultural College.

The foregoing from Professor Rosencrants is a very timely article, for it is a fact that most farmers do not know how serviceable these plants are nor how cheaply they can be installed. The expense of installation can be decreased from the figures he gives, in many cases, for the plants can be installed in a basement room and will give perfect satisfaction. In such cases a separate building is not necessary.

Another important use of these electric plants is barely touched upon in the article by Professor Rosencrants, and that is for operating washing machines, cream separators, vacuum cleaners, etc. As a labor-saving device in the farm home nothing will beat one of the modern electric plants. The work of the housewife can be greatly reduced, and certainly there is need of lightening her burdens. The modern lighting plants are equipped with storage batteries, which furnish sufficient current to operate all the machinery needed about the home during the day, without starting the generator. This enables the housewife to use labor-saving machinery in her work, just as her husband uses improved machinery to lighten his labors.

Let us imagine a farm home equipped with one of these modern electric plants. In the morning the housewife is saved the exasperating job of filling kerosene lamps, cleaning chimneys, etc. Under the old arrangement this was a regular job, year in and year out. If the cream is to be separated the power can be turned on at the switch and the job is finished in short order. If churning is to be done, a modern churn operated by power will need no attention from the time the electricity is turned on until the butter "comes." The butter can even be worked by power butter-worker, if any considerable quantity is made.

It may be washday, and if so this back-breaking job has lost its terrors, for a power washer and wringer combined will clean the clothes in short order and with but little labor. While this work is going on a child can clean the entire house with a vacuum cleaning outfit—and do it better than could be done in a week with a broom and duster.

When ironing day comes an electric iron can be used, and the work can be done more quickly than with old-fashioned irons, and without heating the kitchen. A small motor on the sewing machine will make play of using the machine, and better work can be done, too.

In dozens of ways an electric plant can be made to lighten the work about the house, and the whole family will get the benefit. And all this, of course, is in addition to the comfort and safety of using electric lights in the home and outbuildings. There are thousands of homes of Fruit-Grower subscribers which should have electric plants, and we hope to learn of many being installed this year. Write us your experience, please, when you get your plant in working order. Tell about this for benefit of other Fruit-Grower subscribers.

The cost of hauling over our country roads is now about 23 cents per ton per mile. In European countries the cost is below 10 cents. Our bad roads are an expensive proposition. In the Willamette Valley of Oregon a fruit growers' association says that in one year the bad roads lost their members over $200,000 by damaging the fruit.

At the recent fair held at Lewiston, Idaho, Mr. J. E. Butler, a rancher of Nez Perce County, made an exhibit of over 200 distinct entries, consisting of produce grown between the trees in his ten-acre orchard.

SURE CROPS of FRUIT
of Quantity and Quality.
See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."
WINFIELD NURSERIES

High Grade Spray Hose

HAND SPRAY HOSE

POWER SPRAY HOSE

ELEPHANT BRAND

½-inch and ¾-inch size. Made in 500-foot lengths. Guaranteed for power sprayers. Will cut to suit.

MONARCH BRAND

Made in ⅜-inch and ½-inch 6-ply in 50-foot sections. Red Cover, Strong, Durable. Especially constructed for the purpose. **Don't write us if you want cheap hose.**

THE MECHANICAL RUBBER CO.
CHICAGO RUBBER WORKS
307 West Randolph Street, Department S, CHICAGO
We Make the Goods. Write for Samples and Prices

FILLING THE SMUDGE POTS FROM

Columbian Guaranteed Wagon and Storage Tanks

The picture printed above shows the Columbian Wagon and Storage Tanks in actual use. By this method the smudge pots are filled quickly and easily without waste. Our tanks are made of heavy gauge rust-resisting material which is guaranteed ten years, and will last a lifetime.

Most Fruit-Grower readers know the value we give cannot be equaled. They also know that our **Ten-Year Guarantee** is as good as a government bond. We have sold hundreds of these tanks to readers of The Fruit-Grower, and have many letters expressing perfect satisfaction.

You are cheating your pocket-book if you fail to get our prices. We will gladly quote prices on any size of tank desired. **USE THE COUPON.**

FREE CATALOG We have a handsomely illustrated catalog which gives sizes and quotes prices on our Wagon Tanks, Steel Culverts, Smokehouses, Grain Bins, Scalding Vats, Henhouses, Feed Cookers, and everything else made of galvanized steel. **Write today** for this catalog. We send it **FREE.**

"Tanks For The World"

Columbian Steel Tank Co.
12th and Genesse
KANSAS CITY MISSOURI

Columbian Steel Tank Co., Kansas City, Mo.
Gentlemen: Please quote prices on.....
storage tanks.....ft. high and...
ft. in diameter. Also...Wagon
tank for.....gals. Where
to be delivered.....
Name.....
Postoffice.....

Every Farmer Needs To Read

"HORSE SECRETS"

A Sensational Book Which Discloses all the Sharp Tricks of Horse-Trading Scalawags

READ this Partial List of "Horse Secrets"

Secret of Shutting a Heaver
Secret of Plugging a Roarer
Making a Horse Act Mean
Blowing Air Under the Skin
Stopping a Switcher
Turpentine and Gasoline Tricks
Gingering a Show Horse
Unnerving and Cocaining
Secret of Hiding a Spavin
Artificial Tail Trick
Wedging a Cribber
Making an Artificial Star
The Loose Shoe Trick
Wire Marks Over Side-Bones
Black Spots on a White Horse
The Galloping Past Dodge
Keeping a Horse on Edge
The Bishoping Trick
How Bishoping is Done
Secret of Hand Raising a Foal
Secret of Feeding Silage to Horses
Secret of Fattening Drafters
Secret of Feeding Molasses
Secret of Stopping Halter Pulling

If you order promptly, we will send, absolutely free, "Poor Richard Revived"—our splendid new Almanac for 1912

IN the interest of the farmer, FARM JOURNAL is conducting a campaign of extermination against the "gyp" traders and dopesters who go around the country working off "fixed" horses on the unwary.

By publishing "Horse Secrets" and distributing it broadcast throughout the country we are rapidly running these nervy rascals to cover. In two years we have put this book in the hands of 75,000 readers—seven editions have been necessary to meet the tremendous demand for it. We expect to keep up the good work until we've put the last one of these bare-faced cheats out of business.

"Horse Secrets"

At Once, Postpaid, and

Farm Journal

For Four Years

Both for One Dollar

Read "Horse Secrets" before you buy or swap another horse. It will enable you to detect any smooth trick that may be tried on you. It will absolutely protect you against the sharper's wiles and may save you many dollars. In addition, it gives a number of the most successful remedies known for the cure of vices and diseases of horses. Also much vital information as to raising, feeding and conditioning. Whether you own one horse or many, you need the protection and advice which "Horse Secrets" affords.

Some of the secrets contained in this book are listed on this page. There are many others—a goodly percentage of which are exposed in this book for the first time. As far as we know, there is no other such collection of Horse Trading, Buying, Training and Feeding Secrets in existence.

And we positively know that there is no other farm paper so practical in its treatment of all branches of farming as FARM JOURNAL—so valuable for its money-making and money-saving suggestions—so intensely interesting and immensely helpful to farmers and their families—so free from all nasty and unreliable advertisements. It has nearly 50% more subscribers than any other farm paper published. It has been the welcome monthly visitor in thousands of rural homes for 35 years and will be the best loved paper in your home.

Mail the coupon with a dollar to-day and we will immediately send you "Horse Secrets" and put you down for a four years' subscription to FARM JOURNAL. That dollar will work its head off for you!

FARM JOURNAL
135 N. Clifton St., Philadelphia, Pa.

READ this Partial List of "Horse Secrets"

Secret of Handling a Balky Horse
Secret of Curing a Stall Kicker
Stopping Pawing in Stall
Preventing Casting in Stall
Curing a Knee-knocker
Stopping Tongue Lolling
The Winter Board Trick
Tricks in Measuring Horses
The Twitch and Cording Trick
The Secret Formula Swindle
A Magic Cure for Cramps
Color Secrets
Palming Off a Grade Stallion
Secrets of Stallion Pedigrees
Remedies for Tail Rubbing
An Astringent for Scours
Secret of Drenching a Horse
Facts About Pigment Tumors
Auction Sale Rules
A Little Ill to Distract Attention from a Big One
The Recent Wound Trick
Secret of Detecting a Dummy
The Break Away Trick
Secrets of the Auction Ring

FARM JOURNAL
135 N. Clifton St., Philadelphia, Pa.

Gentlemen:—Enclosed is my dollar, for which send me your book, "Horse Secrets," postpaid—and put my name and address on your paid-in-advance subscription list to get FARM JOURNAL for 4 years.

Name_____

Postoffice _____

R. F. D._____

State _____

If in time, send Almanac

Great $4 Offer on a Set of Empire Steel Wheels

On receipt of $4 we ship anywhere in United States four Empire Steel Wheels to fit your wagon, for 30 days' hauling test. They will save 25% of the draft, save your back and please you in every way. If not exactly as represented, return them at our expense and back comes your $4 without delay. Otherwise, pay balance and wheels are yours for a lifetime. Perfect Measuring Device free, for measuring your wagon skeins.

1912 Model Empire Farmer's Handy Wagon

Ask for Great Introductory Offer on world's best Handy Wagon. Choose from 20 styles, for every purpose. Wagons have enormous carrying capacity—save 25 per cent of draft, and half the labor of loading and unloading.

BOOK FREE—WRITE TODAY

EMPIRE MFG. CO.
Box 812 Quincy, Ill. (32)

"The Magazine of the Last Frontier"

Beautifully Illustrated
Intensely Interesting

Devoted to the Great LOWER RIO GRANDE VALLEY of Texas. Gives reliable information about this wonderful new country with its hustling new Communities, where there are splendid openings for farmers. Tells the facts about the marvelous crops of Fruit, Truck, Corn, Cotton, Sugar-Cane, etc., which are MAKING THE FARMERS FORTUNES.

Send 10c for 3 Months Trial Subscription

Rio Grande Valley Magazine

Box 28. Monte Christo, Texas

We'll Help You to Get Bigger Crops of Fruit

Rupert's Guaranteed Trees—grown in the heart of York State's fruit belt—give big results because they are grown right from the start. We grow everything we sell. Freight charges paid on orders of $7.50 or over.

OUR "BIG FOUR" LEADERS

PEARS—Bartlett, Seckel, Clapp's Favorite.
CHERRIES—Montmoreucy, Black Tartarian, Windsor.
PEACHES—Budded from bearing trees.
PLUMS—Monarch, Wickson, Climax.

Rupert's Tree Book tells about our trees, our guarantee, and why we sell at wholesale prices. It is free—what is your address?

W. P. RUPERT & SON
FRUIT AVENUE. SENECA, N. Y.

I HAVE THE LARGEST STOCK OF

Aroma and Klondyke Plants

in United States. These plants grown on Tennessee Virgin Soil, healthy and strong and true to name. Let me quote you special prices. Grape Vines and other fruits and vegetable plants.

JOHN LIGHTFOOT, E. CHATTANOOGA, TENN.

Notice to Farmers

Keep a bottle of German Distemper Remedy on hand at all times for Distemper, Coughs, Colds, Epizootic and Worms in horses and stock. Also a good tonic. Fifty cents per bottle at all druggists or direct prepaid. Booklets free.

German Distemper Remedy Co., Goshen, Indiana.

FREE Our handsome Seed Catalogue. Send your address on a postal today, or for a 2c stamp and the names of two neighbors, actual seed buyers, catalog and packet Early June TOMATO Seeds earliest variety grown, if sent before March 15. Address COLE'S SEED STORE, Pella, Iowa. **Seeds**

FRUIT TREES

12 Strong Budded Cherry, only $1.00; 50 Concord Grape Vines, only $1.00. For long list of snaps and premiums, send for free catalogue, with due bill. Benson-Omaha Nursery, Dept. 7, Benson, Neb.

Strawberry Plants

That Will GROW. Strawberry, Raspberry and Blackberry Plants, all heavy rooted and grown by myself. Satisfaction guaranteed or your money refunded. Price list free. P. J. Myers' Nurseries, R. 7, Bridgman, Mich.

FALL BEARING STRAWBERRIES. You can have Strawberries from August until November from Pan-American, Superb and Productive plants. Circulars free. For sale by SAMUEL COOPER, Oelevan, N. Y.

BRED FOR QUALITY — BRED FOR QUANTITY

Don't Buy a Fruit Tree

until you know the pedigree.

See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."

WINFIELD NURSERIES

Protecting From Borers.

Question: For thirty years of fruit culture I have never seen peach borers do so much damage. Having a small but very thrifty peach orchard, I find after going over it four times, plenty of borers still left, some exceedingly small, but busy and some large ones overlooked. Now, I have made inquiries, looked in fruit journals including The Fruit-Grower, and generally get the same answer, "Knife and a piece of wire." This will do for a poor remedy but who can give a method to keep the moths or millers from laying the eggs that produce the borer. Some say, "Wood ashes, lime or hot water, soapsuds, etc." I have seen them washed in fresh slacked lime this fall with great satisfaction to the borer. Now all this is not to the point.

Do you, or any contributor to the Fruit-Grower know, from experience, whether wire screening will keep the moth from laying eggs in the trees?

Please give us some information in Fruit-Grower.—A. R. L. Kansas.

Answer, by Professor Hayhurst: We have been performing various tests at this station (Arkansas) the past year to determine the best way to keep the borers from entering the trees. Our results are not yet confirmed, and I am not making conclusive statements until we have settled the question. But in the meantime I can say that the following procedure will not hurt the trees (in our experience) and it is sure to keep out the bulk of the borers.

In May not later than the 15th with us (your date may be later) wrap the trees with two thicknesses of brown wrapping paper (never use newspaper) drawing the same together around the tree from the ground up 18 inches or to the lowest limbs. As you bring the two ends together, double their edges over again until you reach the trunk. Then tie it tight with a string at the top and the bottom, and hill up a few inches enough to keep the borers from getting a start under the paper at the base. If you wrap the paper ends folded together as here advised, the worms can not get under the paper, but otherwise they can enter between the strings. In November remove the wrappers and level the mounds. At this time you can cut out the little borers in the bark very easily with a knife. There will be so few, if any, under the paper that you will have no difficulty in handling the job.

Some growers find that most of the borers are kept away by mere hilling up with soil without paper, but our results are not so conclusive in this matter.

It is a good plan to cut out the borers with a knife in the spring before you put on these papers, although this is not absolutely necessary. If you do not do so, they will go on growing and become moths in the summer and emerge through the mounds and through the paper. For this reason it is better to get them out first. The paper and mounding merely keep out the next crop of worms, and has to be done each year. In cutting them out it is better to protect the trees with a thick paint consisting of white lead paint, to which there has been added pure raw linseed oil. This combination will not hurt the trees, and it has the tendency of closing up the wounds so as not to admit rot fungi. We are experimenting here to find a better and cheaper paint, but at present the above is all we can mention.

House paint and oils that might contain varnish would injure the trees.

Wire screening will not keep the moth from laying her eggs near enough to the tree's trunk so that the worms can get in. Wood ashes, etc. are useless, and the application of carbon bisulphide is dangerous. It often kills the trees.

If you will use the above method of keeping them out, or a similar one, your trees will contain no borers, and will do 100 per cent better the next year (when there are no borers in them). This has been my experience in Arkansas.

Should Soil Be Analyzed?

Question: I have been seriously thinking about putting out a peach and apple orchard, and would like a little information. Would you advise me to have the soil analyzed and would you advise nursery stock from a near-by nursery. I wish you would give me some information how to go ahead and get started right also the varieties of fruit you would suggest that would do well here. —W. G., Indiana.

Answer: It will not be necessary at all to have an analysis made of the soil where you expect to plant your apple and peach orchard. An analysis would amount to little or nothing so far as enabling you to judge the suitability of your soil for an orchard. If your land lays well and is located so that the water and air can drain away from it to lower levels and the soil is fertile, it ought to be suitable for orchard purposes.

When it comes to buying nursery stock, there is no special advantage in buying from local growers. In fact, there is often a great disadvantage in buying from local growers unless those men are absolutely reliable and experienced. It is better by all means to buy nursery stock from some of the large growers, who have been in the business for a long time rather than the country nurseryman. Large growers are enabled to put out their trees in the best possible shape and will stand back of their being true to name.

A country nurseryman is usually careless of what kind of trees he handles. Too often he buys his trees from the wholesale growers and fills his orders for all varieties out of the same bundle. Since several years must elapse before the grower finds out what varieties of trees he has, a small nurseryman has a chance to escape blame for substitution. In The Fruit-Grower you will find advertisements of a large number of nurserymen, every one of whom we believe is absolutely reliable and who will fill your order with first class trees and of varieties that will be perfectly true to name.

There is a great deal of advantage in buying one year old trees for planting rather than two year old stock. The one year old trees cost less and they can be headed exactly right. Two year old trees are always headed in the nursery and usually the head is higher than the orchardist considers desirable. Personally we prefer to plant one year old stock and so do all of the up to date growers we know of.

Trapping Ants.

Question: I would like to ask if any of your subscribers know of any way to get rid of the little black ants that get into the pantry and cupboard and swarm over the sugar, preserves, fresh meat, etc. I have tried several ways the past summer to keep them out of the house and food, but have not met with any success yet.—E. H. J., New Mexico.

Answer: As there are so many different kinds of ants, any method which is effective for one is not always equally effective for other kinds. In our own home we have been greatly annoyed by two kinds of black ants infesting the pantry and kitchen. For years we have had to fight these little pests, but usually win out quite early in the season, and we do it by trapping the ants. We make the traps out of what ever food material the ants are especially fond. For example, the larger variety of these ants like apple sauce better than any thing else, and especially when the sauce is beginning to ferment.

We place the apple sauce in an ordinary fruit jar, making the sauce quite juicy and sweet, and filing the jar about a third full. This jar is then placed in a situation conveniently reached by the ants, and in a few hours will be swarming with them. The convenience of the fruit jar is that the ants are able to crawl into it, but after drinking their fill of the juice, and especially the fermenting juice, they are not able to crawl out, with the result that they fall in the juice and drown.

Another method of trapping is to saturate a sponge with sweetened water, fruit juice or any other liquor the ants like, then placing the sponge where the ants can get at it. When the sponge is covered with the insects, drop it in hot water. The only difficulty with this method is that in picking up the sponge and transferring to hot water is that a number of the ants will drop off before being killed.

Trapping is more successful, we have found, than trying to kill the ants by fumigating their burrows, but necessitates watching the traps every few hours, and changing as often as may be necessary.

Varieties for Arkansas.

Question: I am interested in a peach orchard in Baxter County, Arkansas, and we are setting out a lot of apple trees between the peaches, so as to have our apples coming as the peaches give out. We are anxious to know what kind of apples to put out, so as to get the best results in a commercial way. We have already put out some Jonathan, but thought maybe some other apple would be better. We will appreciate any information you can give along this line, also we would like to know who to write to in Fayetteville for information.—S. H. A., Texas.

Answer: In this apple orchard which you are setting out in Baxter County, Arkansas, the Jonathan will be a very good variety for you. It is our opinion that growers in the Ozark region could make more money from early apples than they can from winter apples. On this account your selection would be more along the line of such varieties as Yellow Transparent, Early Harvest, Maiden Blush, Benoni, Jonathan, and perhaps Delicious.

These apples are all of high quality. They are good producers and since they come in very early in Arkansas they reach the markets at a time when last year's apples are beginning to lose their sweetness and the consumer is hankering for something fresh.

We believe the possibilities of summer apples in the Ozarks are unlimited yet we are well aware that our ideas do not coincide with the ideas of a good many experienced orchardists in that section.

Prof. Ernest Walker, of the Agricultural College of Arkansas at Fayetteville, Arkansas, can no doubt give you some

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffe, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

ABSORBINE STOPS LAMENESS

from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone or similar trouble and gets horse going sound. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. $2.00 a bottle delivered. Horse Book 9 E free.

ABSORBINE, JR., liniment for mankind. Removes Painful Swellings, Enlarged Glands, Goitre, Wens, Bruises, Varicose Veins, Varicosities, Old Sores. Allays Pain. Will tell you more if you write. $1 and $2 a bottle at dealers or delivered. Manufactured only by

W.F. YOUNG, P.D.F., 34 Temple St., Springfield, Mass.

THIS

O.I.C.

SOW WEIGHED 932 LBS. AT 23 MONTHS OLD

IONIA GIRL

I have started many breeders on the road to success. I have a large and fine herd. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs."

C. S. BENJAMIN, R.F.D. 28 PORTLAND, MICH.

I Cured My Rupture

I Will Show You How To Cure Yours FREE!

I was helpless and bed-ridden for years from a double rupture. No truss could hold. Doctors said I would die if not operated on. I fooled them all and cured myself by a simple discovery. I will send the cure free by mail if you write for it. It cured me and has since cured thousands. It will cure you.

Fill out the coupon below and mail it to me today.

Free Rupture-Cure Coupon

CAPT. W. A. COLLINGS, Inc.
Box 28 Watertown, N. Y.

Dear Sir:--Please send me free of all cost your New Discovery for the Cure of Rupture.

Name.....

Address.....

.....

Don't Wear a Truss

FREE STUART'S PLAS-TR PADS are different from the truss, being medicine applicators made self-adhesive purposely to hold the parts securely in place. No straps, buckles or springs—cannot slip, so cannot chafe or compress against the pubic bone. The most obstinate cases cured. Thousands have successfully treated themselves at home without hindrance from work. Soft as velvet—easy to apply—inexpensive. Awarded Gold Medal. Process of recovery is natural, so no further use for truss. We prove what we say by sending you Trial of Plapao absolutely FREE. Write TODAY.

STUART'S ADHESIVE PLAS-TR-PAD TRADE MARK PATENTED SEPT 12 1908

TRIAL OF PLAPAO

Address—PLAPAO LABORATORIES, Block 220 St. Louis, Mo.

Don't Wear a Truss!

C. E. BROOKS, the Discoverer

Brooks' Appliance, the modern scientific invention, the wonderful new discovery that cures rupture will be sent on trial. No obnoxious springs or pads. Has automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves. No lies. Durable, cheap. Pat. Sept. 10, '01. Sent on trial to prove it. Catalogue and measure blanks mailed free. Send name and address today.

C. E. BROOKS, 57A State St., Marshall, Mich.

A Good Word for us when you write an advertiser shows him where his advertisement pays and so helps us. Please say it for The Fruit-Grower

very valuable suggestions and assistance along this line.

Pruning Currant Bushes.

Question: We have recently come into possession of quite a number of old currant and gooseberry bushes. I think these have been bearing quite regularly and look in pretty good shape, except that sod has taken hold around them. What I want to know is how to prune them. There is too much wood in my estimation, yet I want a crop this next season. Shall I prune out all but last season's growth, or shall I leave last season's growth and what looks to be the newest of former years. I want a moderate crop of good sized berries, yet want to prepare them for better work later on. I will give them cultivation and some manure, and I am thinking of resetting what rooted plants I find around them. Is this the right way to do?—A. B., Ind.

Answer: In pruning currants and gooseberries. the principal thing to bear in mind is not to cut them back too hard. Currants and gooseberries bear their fruit in somewhat the same manner as apples and cherries, that is on little spurs borne on the old wood. On this account all of the old wood should not be cut out. The general opinion is that the canes should be left for about three or four years, sometimes five years, before removing them.

In case the stools get too thick with young shoots, it is best to cut out a few of the young shoots and a few of the old ones, leaving about half a dozen or so of each. Then each year thereafter, prune in about the same manner, leaving a few new canes and a few old ones. In fact, one of the most successful ways of handling these two fruits is to keep the young canes cut out altogether for two or three successive years, leaving nothing but the old wood and merely shortening in the new growth on this old wood. A half dozen new canes can then be allowed to form and take the place of the old canes after the second year.

When the new canes are old enough to bear, which will be in two years, then the oldest canes should all be removed and the bush filled with entirely new fruit wood.

Where the stools get so large that grass gets into them, about the best way to handle the matter is to take a sharp spade and divide the stools, using the younger portion for replanting. In working over these old plants, you will no doubt find quite a large number of layers that would make excellent plants for resetting them in their permanent position.

Getting Rid of Alkali.

Question: I have an artesian well on my place, the water of which contains .0085 per cent of carbonate of soda. It flows about 20 gallons per minute and is the only water available for irrigating my two acres of garden and orchard. Small as the amount of carbonate of soda is, the constant irrigation has accumulated enough of it to be of injury to the crops. I want to ask if there is any way by which this detrimental salt can be converted into a useful one.

The water is allowed to accumulate in a cement tank and flows through a cement pipe to the field lateral. Can anything be added to the water while in the tank, which will remove or neutralize the carbonate of soda, or better still make it beneficial to the soil.—A. P., Arizona.

Answer: It is possible to neutralize the carbonate of soda with nitric acid, converting the carbonate, or what is otherwise known as "alkali" into sodium nitrate. This is one of the most highly stimulating fertilizers. Before attempting anything along this line on a commercial scale I would suggest that you take this matter up with the Bureau of Soils of the U. S. Department of Agriculture at Washington, D. C.

What I suspect would be really better than resorting to the use of nitric acid to neutralize the carbonate, would be the application of a little land plaster to your soil, or the land plaster could be arranged in a crate or crib in your reservoir where it would be acted on by your irrigation water. This would not eliminate the sodium carbonate, but it will convert it into another compound which will be less objectionable. Then, by putting in a system of drains through your land, so that the excess water can be drawn off, all of the alkali can be washed out of the soil in the course of one or two seasons. In fact draining will alone go a long ways towards solving your problem.

Several important Questions.

Question: Will you please answer the following questions? (1) Will kerosene emulsion, recommended to kill woolly aphis on the roots of apple trees, be efficacious for aphis on the leaves? Would the same strength be used, and is there any danger of injuring the foliage?

(2) Will pouring hot water on peach tree roots kill the borer? Is there any danger of injuring the tree?

(3) In fighting borers in apple trees would it destroy the borer that has tunneled into the tree to a considerable depth to inject either turpentine, kerosene, or carbon bisulphide into the tunnel? Would either be injurious to the tree? Have read that by injecting carbon bisulphide and then quickly plugging up the hole with putty or soap the borer is killed by the fumes. What sort of instrument could I get for injecting this material?

(4) Is coal tar better for painting the wounds on trees, caused by pruning than is white lead or oil? Is it as harmless?

(5) Can you tell me where I can get some information about winter vetch? Is there a bulletin on growing it?

(6) Does lime-sulphur as a summer spray destroy aphis on the foliage?

(7) What would you recommend for canker, blight on apple trees? Does lime sulphur, as winter spray do any good for this disease?

Answer: Question 1—Kerosene emulsion is one of the standard remedies for the woolly aphis, either on the roots or leaves of trees. The same strength is used for both applications and as a rule no injury results. There is a possibility and occasionally some injury to the leaves and on this account kerosene emulsion is gradually giving away to some one of the several tobacco preparations such as black leaf.

Hot water will kill the borers if applied so as to reach them, but will do no good if put on the roots.

Question 3—Borers in apple trees can be destroyed by injecting carbon bisulphide. Don't put on either turpentine or kerosene. They will do great amount of damage to the bark of your trees, whereas carbon bisulphide will not cause so much damage. The best way to apply the bisulphide is by means of a little medicine dropper or a machine oil can. While this method will work all right it is usually quicker and easier to dig the borer out with a sharp knife.

Question 4. When it comes to covering wounds on trees with coal tar and white lead, we would say by all means to keep the coal tar away from the trees if you want to save your trees. There is no better covering for wounds than white lead and raw linseed oil, but be sure you use the raw linseed oil.

Question 5—I am not sure that the Arkansas Experiment Station has issued a bulletin on winter vetch, but they will no doubt be glad to furnish you detailed information in regard to its culture. We are referring these questions of yours about borers to Prof. Hayhurst of the Arkansas Experiment Station, and am requesting him also to give you the information about winter vetch.

Question 6—Lime-sulphur as a summer spray would have some effect in controlling the aphis on the foliage of your trees, but it is far better to use some one of the tobacco sprays.

Question 7—The best way of handling the blight problems is to go over your trees carefully during the winter and cut out all limbs that show any evidence of cankers. If the canker is caused by fire blight it will be necessary to sterilize your pruning tools with a solution of corrosive sublimate immediately after cutting each affected twig. It is also important in cutting these limbs caused by fire blight to make the cut several inches below the lowest sign of the blight. Where the cankers are caused by fungi this antiseptic precaution will not be so necessary. When the trees have been gone over carefully and all of the cankers cut out, these may have applications of 1 to 11 lime sulphur. This is a first class remedy and will go far towards keeping the agents causing the cankers under control, but spraying will not keep all of these cankers in absolute control except by being accompanied by judicious pruning of the diseased branches.

Trees Did Not Do Well

Question: I have planted an orchard of about two acres in Burkes County, Pa., with one hundred one-year-old trees set 25 feet apart on the square plan, set in spade dug holes. The varieties are Delicious, King David, Black Ben, Champion and Liveland raspberry. The ground was plowed and harrowed before planting. They have made what I think is a poor growth, about 2 to 4 inches. The soil, which was not manured, is of a rich, clay loam. Would you advise me to dig them out next spring and reset them in dynamited holes, or would you advise me to blast the ground about four or five feet away from each tree? The ground is lower than in the immediate surrounding soil, and is underlaid with a silvery clay hardpan. Is it a sign of good fertility if ragweeds grow thickly to a height of 5 feet, on this ground? I had them cut down in September and left laying as a mulch. Please advise how I can get these trees to growing right Can German prunes and plums be grown from seed, and how should the seed be stratified?—F. R., Pennsylvania.

Answer: We note that you say "the ground is lower than the immediate surrounding soil." If you mean that the soil in which your orchard is planted is lower than the adjacent fields on all sides, it would seem as though you had selected a very poor location for your orchard. Orchard trees should not at any time be planted in low ground, they do much better on the hills.

Now, as to the small amount of growth which your trees have made. If you have lost no trees at all it would seem to me you have had very fair success, considering the season. In such a dry season as we had last summer young trees have made very little growth, even under the best conditions. We would not advise digging these trees up and replanting them in blasted holes next spring, instead, give the trees a good thorough cultivation. If there is hardpan under the orchard it will pay by all means to either tile drain the land or loosen the hardpan with dynamite.

So far as being a sign of fertility in the soil, rank weeds are a very fair index. Five or six feet of growth for a single year would indicate very fair fertility, and it is quite possible that these weeds, growing so rank in your orchard, may be the cause of your trees making such small growth. This would come from the weeds taking the moisture and fertility away from the trees. We would not advise allowing weeds of such a rank growing habit to grow in a young orchard. It would be far better to keep them cut down and the ground in absolutely clean cultivation throughout the entire season. It would be better still to cultivate until mid-summer and then plant some leguminous crop such as clover or cow peas.

If this weed mulch which covers your ground is allowed to come up close to the trunks of the trees, you may find that next spring the mice have girdled the trees to a greater or less extent. The mulch should be pulled away from the trees and the ground kept perfectly clean of grass and weeds for a distance of two feet from each tree.

The German prune and plum trees can be grown from seed, but in doing so there is no probability, whatever, of getting seedling fruit that is half as good as the fruit from which the seed was taken, and since nursery trees are so very cheap it does not pay to waste time trying to grow fruit trees from seeds. Plum seeds can be stratified by planting them in the fall where they will freeze and thaw several times during the winter. Nurserymen usually plant them in the rows the seedlings are to occupy, some time during the fall. They will weather sufficiently in the winter and the seedling will appear very early in the spring.

NEWS BULLETINS.

Plans and Descriptions of Five-Acre Poultry Farms. Quarterly Bulletin No. 2. Mo. State Poultry Board, Mt. Grove. Mo.

The Control of the Chestnut Bark Disease, by Metcalf and Collins, Farmers' Bulletin, No. 467.

Methods and Results of Paraffining Cheese, by C. F. Doane, Bureau of Animal Industry, Cir. 81.

Winter Emmer, by M. A. Carleton. Farmers' Bul. 466.

Honey Plants of California. by M. C. Richter. Calif. Exp. Sta. Bul. 217.

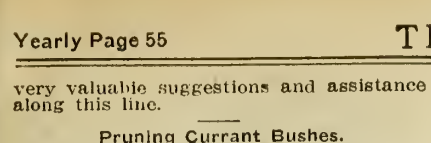
The chemical composition of American grapes grown in Ohio, New York and Virginia, by Wm. B. Alwood, Bureau of Chemistry, Bul. 145. Washington, D. C.

Tuberculosis, by the International Commission. Farmers' Bul. 473. Washington, D. C.

The Rural Population of Ohio. L. H. Goddard. Cir 116, Ohio Exp. Station, Wooster, O.

The Fusarium Blight and Dry Rot of potatoes. Thos. F. Manns. Bul. 229, Ohio Exp. Sta., Wooster, O.

The Chinch Bug. H. A. Gossard, Cir. 115, Ohio Exp. Sta.



TRAPPERS GET BUSY
BIG MONEY IN FURS

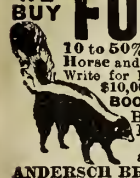
Over ten million dollars will be paid to trappers of fur bearing animals during the coming winter. Any man or boy living in the country can add a goodly sum to his earnings by trapping during spare moments. We furnish **Absolutely Free** a complete Trapper's Guide which tells you the size of trap and kind of bait to use for the different animals, how to remove the skins and prepare them for market. We also furnish the best traps and baits at lowest prices. We receive more furs direct from trapping grounds than any other house in the world, therefore can pay the highest prices for them. Our price lists, shipping tags, etc., are also FREE for the asking. If you are a trapper or want to become one, write to us today. We will help you.

F. C. TAYLOR & CO.
Greatest Fur House in the World
300 Fur Exchange Building, St. Louis, Mo.

FURS WANTED

We are mailing to our shippers the most complete Fur Price List put out by any house this season. Let us send you one free. We tan hides, make fur coats, robes and fur sets. Write us. Pember's Hide and Fur House, Drawer 14, Onawa, Iowa.

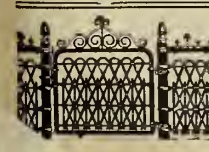
WE BUY FURS AND HIDES



10 to 50% more money for you to ship Raw Furs, Horse and Cattle Hides to us than to sell at home. Write for Price List, market report, shipping tags.
$10,000 BOOK Hunters' and Trappers' Guide
Best thing on the subject ever written. Illustrating all Fur Animals. Leather bound, 450 pages. Price $2.00. To Hide and Fur Shippers, $1.25. Write today.
ANDERSCH BROS., Dept. 48 Minneapolis, Minn.

PEDIGREED Live Stock
and pedigreed fruit make $.
See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."
WINFIELD NURSERIES

11½ CENTS A ROD
For 18 inch Hog Fence, 14¼c for 24-in. 26c for 48-in. Poultry. 78 styles. Bottom prices. Catalog Free.
OTTAWA MFG CO. 606 KING ST. OTTAWA, KANS.



LAWN FENCE
Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Churches and Cemeteries.
Coiled Spring Fence Co.
Box 413 Winchester, Ind.

Get It From the Factory Direct

KITSELMAN
FENCE

Friend, you use wire fence on your farm, don't you? Have you ever used KITSELMAN FENCE? If you haven't we want to tell you a few reasons why you should.

We were the first to sell wire fence direct to the Farmer. We make you the same price we would make the Dealer or Jobber. THAT IS WHY WE CAN SAVE YOU MONEY. Look over these prices on just a few of our best selling styles.

11½ cents a rod for 18 inch high Hog Fence.
23½ cents a rod for 47 inch high Heavy Farm Fence.
25 cents a rod for 60 inch high Poultry Fence.
$1.40 for 80-rod spool Ideal galvanized Barbed Wire.

PRICES LOOK GOOD? NOW AS TO QUALITY. We found we couldn't get good quality wire on the open market and so built our own wire mill. Now we know that the **best quality steel is used** and that **the wire has an extra heavy coat of Galvanizing** to prevent rust. That is why KITSELMAN FENCE wears best and lasts longest.

Won't you write for our Free Catalogue today—before you forget it?

KITSELMAN BROS., 103 So. Council St. MUNCIE, IND.

STRAWBERRY PLANTS THAT GROW

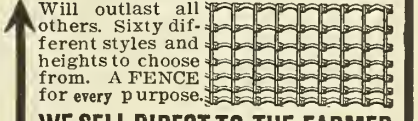
LET ME SEND YOU MY FREE BOOKLET
"STRAWBERRY PLANTS THAT GROW"
Describing a full list of varieties with prices. Also INSTRUCTIONS FOR PLANTING AND CULTURE of STRAWBERRY, RASPBERRY, BLACKBERRY, CURRANT, GOOSEBERRY and GRAPE PLANTS; also ASPARAGUS and RHUBARB ROOTS.
All Stock Warranted First Class and True-to-Name or MONEY REFUNDED.
C. E. WHITTEN'S NURSERIES, BOX 9 BRIDGMAN, MICHIGAN.

MID WEST RASPBERRY — BEST BY TEST

The Best Black Raspberry Yet Introduced
Catalogue describing this great New Berry and our extra heavy rooted Raspberry, Blackberry, Strawberry plants, Grape Vines and High-Grade Fruit Trees FREE on request. Prices low, quality high.
THE PERU NURSERY, Box 404. PERU, NEBRASKA

Strongest FENCE Made

Made of **DOUBLE STRENGTH Coiled Spring Wire.** Requires fewer posts. Always tight. Is heavily **Galvanized with PURE ZINC.**



Will outlast all others. Sixty different styles and heights to choose from. A FENCE for every purpose.

WE SELL DIRECT TO THE FARMER AT DEALER'S PRICES.

Be your own merchant and put the Dealer's Profit in your own pocket where it belongs. Prices the lowest ever quoted for a first-class fence.

26-inch Hog Fence, - - 15c. per rod.
47-inch Parm Fence, - - 23-5/10c. per rod.
48-inch Poultry Fence, - 26-9/10c. per rod.
Special Barbed Wire, $1.40 per 80-rod spool.

Biggest values ever offered and sold under our 30-DAYS-FREE-TRIAL-MONEY-BACK GUARANTEE-CONTRACT. Our big Catalogue contains information you ought to know. Write for it today. It's FREE.

COILED SPRING FENCE CO.
Box 125 Winchester, Indiana.

BROWN FENCE

WE PAY THE FREIGHT
Heaviest Fence Made
Heaviest Galvanizing
We make 160 styles. Horse cattle, sheep, hog, and bull proof fences made of No. 9 double galvanized wires and absolutely rust proof
Bargain Prices:
13 cents per Rod Up
Poultry and Rabbit Proof Fences, Lawn Fences and Gates. Send for Catalog and Free sample for test.
The Brown Fence & Wire Co.
Dept. 14 Cleveland, Ohio
SAMPLE FREE

No Break Advance 17 YRS. THE SAME

Before You Buy
get our direct from factory prices on the old, reliable Advance Fence—17 years a leader. You save all the middlemen's profits—
Save Money—12 Cents a Rod
and up. Hog, sheep, poultry, fruit and farm fence. Endless stay wires—no cut ends—no rust. Sold on money back guarantee. Freight paid. Write for lowest factory prices before you buy.
NO KINKS (2) ADVANCE FENCE CO. Box 232 Elgin, Ill. NO KNOTS

The TIGER FENCE

Made of Open Hearth High Carbon Coiled Spring (double strength) Steel thoroughly galvanized wire. May be returned at our expense if not satisfactory. Shipped direct from factory. Field Fence, 49-in., 22¾c; Hog Fence, 27-in., 15½c; strong Poultry Fence, 48-in., 27c; 60-in., 30c. Special price on Glidden Barb Wire. Catalogue FREE.
The TIGER FENCE CO., Clarksville, Tenn.

LOW PRICES for this handsome FENCE
100 other styles. Many cheaper than wood—all better. For Lawns, Churches, Parks, etc. Write for Pattern Book and special offer.
THE WARD FENCE CO., Box 925 DECATUR, IND.

Apple Seedlings

American or French Grown
Straight or Branched Roots
Well Matured, Good Grades
Carefully Handled

Apple Grafts

MADE TO YOUR ORDER

Any style or length to suit purchaser. Over forty years' experience. Write for Winter Wholesale Trade List.

The
SHENANDOAH NURSERIES
D. S. LAKE, Prop.
Shenandoah Iowa

LARGE STOCK OF
Apple Trees
Apple Seedlings
Shade and Ornamental Trees
Apple Grafts Made to Order
WRITE FOR PRICES
YOUNGERS & CO.
GENEVA, NEBRASKA

1911-1912 CATALOG
OF THE CELEBRATED
MUNSON NURSERIES
DENISON, TEXAS
containing the best selected fruits for the Southwest. Now ready. Send for a copy; IT'S FREE.

PRIVET
SPECIALIST
List prices, best plants, hardwood cuttings. Write for prices and list.
A. W. NEWSON, Huntsville, Ala.

PEDIGREED Fruit Trees
Quality and Quantity crops.
See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."
WINFIELD NURSERIES

IN THE BERRY FIELDS

Passing on to another class of small fruits, I will speak of the two hybrid dewberry-blackberries from Texas, the McDonald and the Haupt. I have them planted in a grape row and they are such tremendous growers that they simply overran the grapes like honeysuckles and hid them from sight. The first year they creep on the ground, but the second year they send up shoots like a black raspberry that will grow many feet in length. They are both thorny, but the Haupt is a terror in this regard, being thrice armed with hooked points that lose no occasion of making a closer acquaintanceship with you. Last season the McDonald did finely and gave promise of being very valuable. Its berries are borne with the same or even greater productiveness than those of the Lucretia dewberry and were equally as large. I am very much pleased with it and think that if it had been well pollenized, it would have done even better. It is a pistillate, and so is the Haupt.

McDONALD
A hybrid blackberry-dewberry of great promise.

The latter flowered more profusely than the McDonald, but its berries unfortunately were all imperfect, and I was unable to estimate them at their real value.

The Haupt was sent me by F. T. Ramsey & Son, of Texas, who introduced it. With them it does even better than the McDonald, but its thorns make it a most ugly customer to handle in pruning. Its berries lie on the outside and are not difficult to get at. It is a most rampant grower and a single vine would cover a trellis ten feet high and ten feet wide, at a guess. Mr. Ramsey prunes the Haupt by mowing the whole top off at the ground every two years, just as is practiced here in Missouri, with the common dewberry. Mr. J. E. Fitzgerald of Texas states in his catalogue that the Haupt bears an immense crop of berries that are of fine quality and have few seeds. His pickers like the flavor the best of all. He says plant it with the McDonald, but as the McDonald is a pistillate this will evidently not do, at least it won't do here. In a private letter he says: "I had the Haupt in bearing this year but, Great Scott, its horrid thorns set like fish hooks and are terrible. It is about ten days later than McDonald, and is no better bearer, if as good, but it has a peculiar delicious taste." Of the McDonald he writes: "The McDonald has again outstripped all others. I kept tab, the best I could, on two rows 160 yards long, and we picked 220 gallons from them. They were so early that I got 15c per Leslie quart for most of them. Some of the blooms failed to pollenate, as the vines were not planted near other varieties of the same season." Mr. T. V. Munson, the grape specialist, of Denison, informs me that McDonald is pollenated by the Sorsby blackberry and the Austin (Mayes) dewberry, but that the Dallas blooms a little too late for it. He describes it as large, fine quality, prolific, firm and even earlier than Austin dewberry; it also endures drouth well. He thinks the Early Harvest blackberry should suit it as a pollenizer. So much for the McDonald, which I regard as a decided acquisition and whose trial I recommend. It ripens here with the Early Harvest and, speaking generally, seems to surpass that old and money-making standard in nearly every respect, especially size.

The leading Texas blackberries are the Sorsby May, Dallas and Robinson. Of Sorsby Mr. Munson says it is a week earlier than Early Harvest, larger, very productive and a good shipper, but is handicapped by having to compete with the early dewberries, which are larger and more showy. The Dallas is an old standard variety of good qualities. It is hardy, prolific and on rich soil makes fairly large berries. Mr. Munson testifies that Sorsby and Dallas have endured 15 degrees below zero, which should make them capable of cultivation here in Missouri. Without having seen these two varieties in bearing, I think it doubtful that they will prove of commercial value much further north in competition with our present standards. The Robinson has already been discussed in former notes. It follows the Dallas and surpasses it in every way. It is especially strong in resisting drouth. If it proves hardy over the middle states, it will doubtless take its place as a standard, surpassed perhaps, only by Mersereau in quality, but if its claims as a rust resister prove well-founded, there is a chance for it to take first place.

There remains one more Texas berry to mention and that is another hybrid, the Jordan. E. H. Riehl of Illinois informed me that it was doing finely on his farm, and that it was very productive. I received plants, but they all died. Fitzgerald says it is of high quality, but late, about six weeks after the McDonald. Munson says it is much like Dallas, but hardly so good. In a comparison of the real dewberry and these hybrids, I should prefer the latter. They make a large bush, capable of bearing far more than any single dewberry, and are adapted to a two-wire trellis, like that for the grape, from which their fruit can be picked at ease. I recently saw some spring set Himalaya blackberry vines trained to a five-foot trellis and they had already covered it. No doubt the Himalaya will have extensive trial in the next year or two.

Missouri. L. R. JOHNSON.

To Make Large Wounds Heal Quickly.

Keep the trees in a vigorous growing condition. When a large wound must be made, paint the wood with white lead, then cover the most of it with a piece of zinc. The healing tissue, called the "callus," will start from the edges of the wound. In the course of time this callus will fold over sufficiently to cover the wound. Its spread may be hastened by slitting the callus with the point of a sharp knife once each year. Early in the summer is the best time to do this, as the callus tissue is most active at that time.

The Coming Fruit
Himalaya Berry

YOU ought to get next to one of the biggest things American fruit growers have had offered them for a long time—a berry brought from the Himalaya Mountains in Central Asia several years ago, which has put berry-growing on a basis with apple and peach growing.

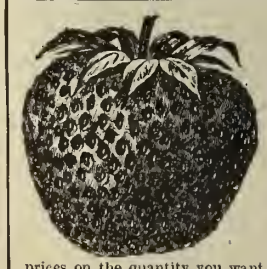
The Giant Himalaya Berry plant is a long, briary vine that does not die down or winter kill an inch. Old and new wood bears every year—vines produce fruit their whole length. Each season's growth begins where the old growth left off, as with apple trees—shoots grow 20 to 30 feet a year.

The berries resemble blackberries, but are larger, meatier and have no core. Plants bear at 18 months old. Ten tons of berries from an acre of three-year plants is an average crop—20,000 pounds, worth 10 cents a pound—$1,000 an acre!

We have been growing these berries for four years and have several hundred thousand plants in bearing. Others have them, too. We know they are a coming commercial and home fruit—you should find it out. We've told why in the Berrydale Berry Book. The book is free, if you write soon. Get it, and find out about Himalaya Berry!

Berrydale Experiment Gardens
Fruit Avenue Holland, Mich.

STRAWBERRY PLANTS



We have an unusually fine stock of Strawberry Plants, chiefly of the commercial varieties, such as Aroma, Gandy, Excelsior, Klondyke, Lady Thompson, etc. These plants are well rooted, are perfectly healthy and free from insects, and are in every way desirable. Write for prices on the quantity you want. Order early, and be sure of getting the varieties you want.

Peach and Apple TREES

Our line of nursery stock is very complete, and we have an especially fine lot of trees of commercial varieties. In peach trees, we have June-budded and one-year trees, of all standard sorts. We can supply apple trees in any quantity. Send list of your wants for prices.

Cabbage Plants

If you grow early cabbage, write us for prices of our frost-proof plants. We are specialists in this line, and will have millions of strong, stocky plants for spring delivery. You save time and money by using our plants. Write for prices and state when you want plants delivered.

Chattanooga Nurseries
D. W. Hunter, Prop. Chattanooga, Tenn.

Bauer's Book on Strawberries
Is a WONDER to All

I have a copy of this book for you and I shall be glad to send it to you on receipt of your name on a postal.

MY PLANTS ARE HARDY AND ARE GROWN BELOW THE BLIZZARD BELT.

They come to you in nice growing condition, no matter where located in the United States.

Don't order your plants until you get my book. A copy awaits your call.

J. A. BAUER, Box 15, JUDSONIA, ARK.

60 VARIETIES
Strawberry Plants
Send for Catalog. D. J. HENRY, LaPorte, Ind.

Genasco

the Trinidad-Lake-Asphalt Roofing

is the lasting roofing for this reason:

Trinidad Lake Asphalt is *natural* asphalt, full of life and vigor that are put in and kept there by the oily nature of this asphalt. Genasco is made of this natural asphalt, and has all its permanent weather-resisting qualities which keep it lastingly waterproof.

Roofings that you don't know about are risky. Their looks are apt to deceive you. Be on the safe side, and get Genasco Roofings—mineral or smooth surface. Fully guaranteed.

The Kant-leak Kleet insures the perfect application of roofing—makes seams water-tight without smeary cement, and prevents leaks from nail-holes. Ask your dealer for Genasco with Kant-leak Kleets packed in the roll. Look for the hemisphere trademark. Write us for samples and the Good Roof Guide Book.

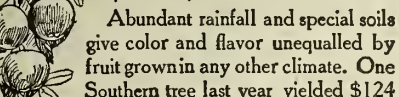
The Barber Asphalt Paving Company

Largest producers of asphalt and largest manufacturers of ready roofing in the world.

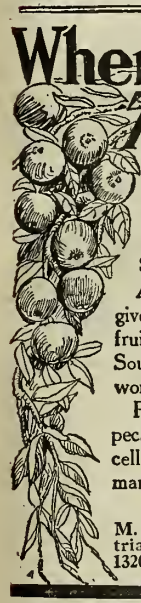
Philadelphia

New York San Francisco Chicago

Cross-section, Genasco Smooth-surface Roofing



Where Apples Thrive and Pay



Lands in the Southeast, costing from $15 to $50 an acre, net profits on apples ranging from $100 to $500 an acre.

Abundant rainfall and special soils give color and flavor unequalled by fruit grown in any other climate. One Southern tree last year yielded $124 worth of apples; another tree $57.

Peaches, pears, plums, berries and pecan nuts yield prolifically. Excellent transportation to profitable markets.

Write for full particulars to

M. V. RICHARDS, Land & Industrial Agt, Southern Ry., Room 33
1320 Penn. Ave., Washington, D.C.

WE WANT SOME

Good Neighbors

I hired a man for six months to scour the State of Florida and select for me and my three sons some of the best land in the best locality. Then I engaged four experts to examine the tract selected. The editor of The Florida Grower was one of them; the others were prominent growers and nurserymen, and they all pronounced the land excellent.

To get a wholesale price, we bought several times as much land as we will need for our own groves and truck farms, and we are in position to offer to the right parties some of the finest 20 and 40-acre tracts in the state at very attractive prices.

We have learned many things about Florida that the settler should know, but which the land companies do not tell. Write for particulars and state your present occupation and why you are interested in Florida.

F. O. FARWELL

No. 14 Fenton Place. DUBUQUE, IOWA

You Can Grow Bartlett Pears on

St. Stephen Irrigated Land

Every fruit grower knows that it takes a rare combination of soil moisture and dry uniform climate to raise Bartlett pears successfully. This land produces them year after year—never a failure—and other fruits do equally as well. For this exceptional irrigated land we are asking only $80 an acre, one-fourth down, and the balance in three years.

Quick transportation for your products is assured. The Southern Pacific Railway passes through Marfa—only 11 miles away—and the Kansas City, Mexico & Orient will build through the property, with a station at Colpitts. Parties leave Kansas City for the farms Jan. 2 and 16—round trip rate $32.50, and no expense to you while on the property. Write for illustrated book, "Where there's Water and Sixteen Feet of Chocolate Loam."

GREEF & KELLY

B714 Dwight Bldg. KANSAS CITY, MO.

SALESMAN WANTED TO SELL MINNESOTA GROWN TREES

Northern-grown trees and nursery stock are in good demand everywhere. Write at once for territory; cash commission paid; canvassing outfit free.

Fairmont Nurseries, Box 786, Fairmont, Minnesota

In your correspondence with advertisers please mention **The Fruit-Grower**

USE OF PAINT ON THE FARM

Farmer's Bulletin No 474, of the United States Department of Agriculture, should have wide circulation, for it discusses a subject which is overlooked by too many farmers. It discusses the use of paint about the farm, not only to improve the appearance of things, but to protect from decay buildings, implements, machinery, etc. It is a most practical bulletin, and discusses a very important subject, for there is scarcely a farm on which paint cannot be used to advantage.

At the outset the author of the bulletin disclaims any desire to induce farmers to try to mix their own paints; he says this is a work requiring great care. He does desire, however, that farmers know the contents of the paints they are using and their approximate cost of making. The author says:

"There is probably no one point more neglected by the average farmer than the judicious use of paint, not only on his house and outbuildings, but also on machinery and various agricultural implements. It is perhaps the rule rather than the exception in some sections to see houses and agricultural implements on the farm sadly in need of paint. The idea seems to be prevalent that paint is used only for ornamental purposes and its use is regarded as a luxury rather than a necessity. While paint does, of course, serve the purpose of improving the appearance of property, it is far more useful for protection than for ornament. A small amount of money and work expended in keeping a valuable piece of machinery properly painted will add greatly to the length of its life. The same may be said of buildings. Another useful object which is accomplished by painting is the improved sanitary conditions of buildings and outbuildings. It is not proposed in this bulletin to give instructions for artistic painting, or even for doing the class of work which would be expected of a first-class master painter, for such work can not be expected of one engaged in another business. But any man can do an average job of painting, and can thereby not only improve the appearance of his place, but can add greatly to the durability of all articles painted. The cost of such work is small, the necessary equipment is not expensive, and with proper care will last a long time."

That part of this bulletin which discusses the painting of metal is of particular interest to farmers, and is as follows:

"Tin or other metal roofing, also galvanized iron such as gutters and rain spouts, are very difficult to paint, as often the paint does not stick well. This is probably due to a very thin film of grease left on such material from the process of manufacturing, and before attempting to paint a tin roof it is best to scrub it perfectly clean with soap and water or with cloths moistened with benzine, and then thoroughly dry before applying the paint. Galvanized iron may be treated in the same way, but is it much better to let this material stand for some time exposed to the weather before painting. The metal portions of machinery are generally cast iron or steel; wrought iron is rarely used, though it is more durable than steel. Cast iron is not so liable to rust as as steel, and also the pieces are frequently thicker than the steel portions of a machine. There is perhaps nothing that actually needs paint for protection as much as the steel and iron portions of machinery. Before painting such material the greatest care should be taken to get the surface perfectly clean. Do not apply paint over rust, but clean thoroughly down to the bare metal with scrapers or wire brushes, and finally with dry scrubbing brushes. It is a mistake to spare labor in preparing a metal surface for paint. All oil and grease should be scrupulously removed, and the metal surface should be absolutely clean and dry before painting. The paint should be well brushed on, carefully filling all cracks.

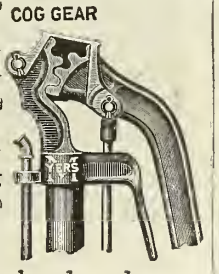
"Two or three coats of any good paint may be used. The paint which is generally supposed to protect iron from rusting better than any other is red lead. This is expensive, however, and rather hard to apply. The color also is some objection, although this can be overcome by mixing some dark pigment with it. The addition of a small amount of lampblack improves the color and the working quality of red-lead paint. A paint made of basic chromate of lead (so-called scarlet lead or American vermilion) is even better than red lead as a material for protecting iron. This also is very expensive, even more so than red lead, and while the protection is not so complete with the use of cheaper paints made of iron oxide pigments, on account of the fact that pieces of machinery are very likely to have the paint scratched and injured mechanically, it is perhaps best to use an iron oxide paint for most of such work because of its cheapness. Any good oil paint will give valuable protection to iron if it is properly applied."

The bulletin gives a number of formulas for making whitewash, calcimine, etc., and the publication is in every way a good one and should have wide circulation.

An Improved Barrel Sprayer.

So much has been said about power sprayers and the work they will do that many orchardists with small acreage have wondered whether it is any longer practicable to try to spray their trees with a barrel outfit. It may be said that it is entirely practicable to use a barrel sprayer for a small orchard, but that where there are any great number of trees to be sprayed the power machines will be found more effective and more economical.

F. E. Myers & Bro., Ashland, Ohio, make power sprayers, but they have not overlooked the needs of the small grower, and they are continually striving to improve the barrel sprayers. This season a new pump, with a cog gear is put on the market, and it will prove a great boon to those who need only a barrel sprayer. This improvement gives greater pressure without increasing the power needed to operate it, and the firm confidently expects that this new pump will have a great sale. The accompanying illustration shows the improvement which has been made, and will give one an idea of the great pressure which can be developed. The Myers catalogue, which is free for the asking, describes this pump, as well as dozens of other styles. Write to F. E. Myers & Bro., Ashland, Ohio, and ask for it.



Canning Plants Popular.

Small canning plants, either a small one on the farm, or larger ones, able to care for the produce of a community, are becoming more popular every year. Close watch of daily newspapers through the country show that there is a widespread interest in canning plants.

There is good reason for this. Canned goods, of all kinds, are being used more extensively every year. It was not long ago that a can of tomatoes was almost a curiosity, yet there are few households in the country now but what use canned tomatoes as a daily food. The same is true with almost all other vegetables and most fruit.

It is easy to can produce, and by so doing much of the fruit and vegetables that are wasted can be turned into money—money that is really picked out of the scrap heap. By utilizing the waste profits never before obtained can be added to the bank account.

RIGHT NOW

Is the Time to Send for Our Price List on

Fruit Trees

Varieties True. No Disease.

WE PAY THE FREIGHT

For Price List Address

NEW HAVEN NURSERIES

Box 125 New Haven, Mo.

Apple Seedlings

Grown on new land from French Crab Seed. Free from Aphis and Knot. Write us for prices, stating quantity and grade wanted.

C. M. Hurlburt, Fairbury, Neb.

STRAWBERRIES

Plants by the dozen or by the million. 120 acres planted in 103 varieties. All the standards and the most promising of the new ones. Largest grower in America. Every plant true to name. Also Raspberry, Blackberry, Gooseberry and Currant Plants, Grape Vines, California Privet and other Shrubbery. Cultural directions with each shipment. Beautiful Catalogue FREE. Send a postal today. My personal guarantee back of every sale.

W. F. ALLEN

52 Market Street, Salisbury, Md.

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing

Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*

M. BRUNSWICK & CO., Rochester, N. Y.

Apple, Peach, Cherry

Also a full line of other stock. The finest lot of peach in the state. Everything cleaned up again last year to hundreds of satisfied customers in every state. Prices low. Send for catalogue.

FREMONT NURSERY, - FREMONT, OHIO

WANTED

Three or four men who are quick grafters and budders and understand general nursery work. State experience and wages desired. Give reference.

W. T. HOOD & CO., Richmond, Virginia

WE OFFER

Early Harvest Blackberry Root Cuttings for $1.00 per 1000. Pure stock.

WRITE US

APPLEBY BROTHERS, Fayetteville, Ark.

Seedless Melons

It's irresistible. You wish to eat melons with no seeds and you realize to stay abreast and succeed in business you must keep daily accounts. My Daily Expense Record, with Monthly and Yearly Summaries, Servants Accounts and Memorandum pages, will be sent any address prepaid on receipt of 50 cents. Direction to grow Seedless Melons free with each order.

W. GHORMLEY, - HOPKINS, MISSOURI

DU PONT

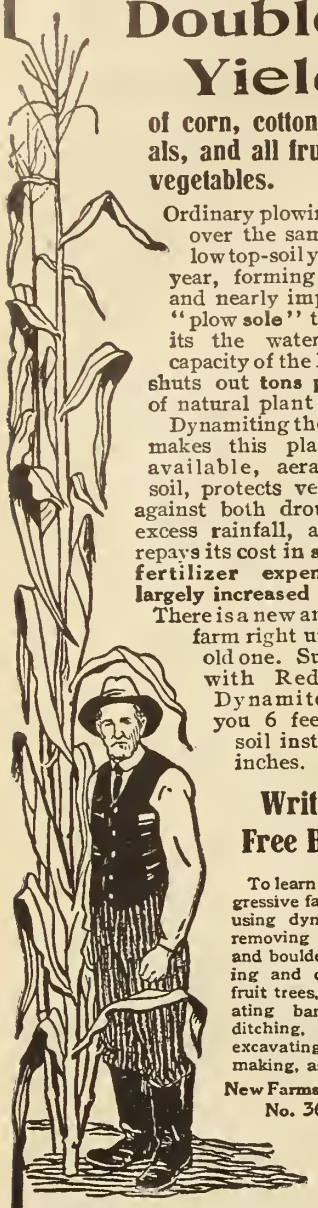
Red Cross Dynamite Doubles Yields

of corn, cotton, cereals, and all fruits and vegetables.

Ordinary plowing turns over the same shallow top-soil year after year, forming a hard and nearly impervious "plow sole" that limits the water holding capacity of the land and shuts out **tons per acre** of natural plant food.

Dynamiting the subsoil makes this plant food available, aerates the soil, protects vegetation against both drouth and excess rainfall, and soon repays its cost in **saving of fertilizer expense** and **largely increased yields.**

There is a new and better farm right under the old one. Subsoiling with Red Cross Dynamite gives you 6 feet of top soil instead of 6 inches.



Write for Free Booklet

To learn how progressive farmers are using dynamite for removing stumps and boulders, planting and cultivating fruit trees, regenerating barren soil, ditching, draining, excavating and road-making, ask for "New Farms For Old," No. 36

DU PONT POWDER CO.
PIONEER POWDER MAKERS OF AMERICA
WILMINGTON, DEL.

SAVE YOUR FRUIT AS WELL AS YOUR MONEY

By protecting your Orchards and Small Fruits from FROSTS and FREEZES by installing our

JUMBO SPECIAL

1911 Improved Jumbo Special Ideal Heater

IDEAL ORCHARD HEATERS

The ONLY Orchard Heater on the Market EQUALLY adapted to burning COAL or WOOD as a fuel.

¶ Invented in 1908. Over 150,000 in use by 600 Successful Orchardists. *Beware* of new and untried devices.

¶ Our 1911 Improved JUMBO SPECIAL Ideal is conceded to be the most powerful and efficient Orchard Heater made. Tried and tested by time and severe use. Capacity, 50 pounds of coal. Wired rim and heavy steel body and cover, and strong reinforced wire stand. Shipping weight, 6 pounds each.

¶ Why take the chances on Frost when the saving on one acre of fruit in one year will buy heaters for ten acres, and furnish Frost Insurance for ten years to come.

¶ Think it over and write today for our booklet, "How Clough Saved His Fruit." It is FREE.

Address
IDEAL SALES COMPANY
Sole Manufacturers and Distributors of
THE IDEAL ORCHARD HEATERS
GRAND JUNCTION, COLORADO

STRAWBERRY PLANTS

Klondyke, Excelsior, Lady Thompson, Aroma, and other varieties for the South. Best and largest stock. Lowest prices. Special prices for nurserymen. Write me for prices.

A. Horn, Rt. 3, Soddy, Tenn.

NOTES ON SPRAYING

Spraying is such an essential factor in modern fruit-growing and passed the experimental stage so long ago that it is passing strange that anyone should longer question its practical, indispensable value. Those who wish to avoid the disagreeable duty of spraying cite instances where unsprayed fruit is superior to the sprayed article. Every fallacy and superstition in a singular way: by citing exceptional instances. There are farmers who claim there is no value in manure, pointing to crops which have done better on unmanured than on manured ground. In the latter case the barnyard fertilizer may have contained a great deal of straw, which in a dry season will cause the soil to dry out badly.

Opponents of spraying overlook the fact that fungus diseases and insect pests are much worse some seasons and in some orchards than in others. Local conditions—which are often not well understood—sometimes make all the difference in the world in the behavior of fruit enemies. Moreover, spraying is a very delicate operation and if not done exactly right, or if conditions are unfavorable, no good results will follow the work.

No one can be blamed for wanting to dodge the spraying issue, for there are few jobs on the farm that are harder, dirtier or more disagreeable than spraying. Our worthy editor speaks of spraying as a delightful occupation and likens the handling of a spray-rod to fishing. Verily, "tastes differ." If Mr. Irvine or anyone else wants to fish for codling-moth in the writer's orchard they will be given a royal welcome and fed on the fat of the land.

COVERING A TREE FROM AROVE AND BELOW IS THE ONLY WAY TO DO THOROUGH SPRAYING

Choosing an Outfit.

There is such a wide difference in spraying apparatus, formulas and dates that it is plain that spraying has not yet been reduced to an exact science. The orchardist must be guided largely by experience and observation. Price is by no means a measure of value as applied to spraying outfits, since many of the costliest models have serious defects. A traction sprayer is a fine thing for young orchards, but for large trees there is not enough power generated in going from one to another. Barrel-and-pump sprayers are all right for family orchards, but for large, commercial orchards the most satisfactory outfits are those which are run by gas engines. Between these two kinds come those which work with a lever. It takes a good, strong man to operate one of these machines with one double or two single nozzles attached—another thing which is generally learned only by hard experience. A serious defect of this style of pump is the absence of an agitator. This is a fatal fault for spraying with arsenate of lead, as this chemical precipitates rapidly.

Hose and Nozzles.

The most important part of a spraying outfit is the nozzle, of which there are three kinds: good, bad and indifferent. To the second class belong those which have projecting parts to catch on limbs, and those which have to be taken apart to be cleaned. The Bean Best is well named, being a slim, straight nozzle, cleaned by pushing against any solid body and throwing a wide, fine spray. A double nozzle of this variety enables one to do very rapid, effective work.

The prevalent idea is that a nozzle should throw as fine a spray as possible. This is all right so far as fungicides are concerned, where the only purpose is to cover all parts of the tree as evenly as possible. In spraying for moth or aphis, however, a coarse spray is necessary to force the insecticide into the calyx of an apple blossom or the inner side of a curled leaf. For this kind of work a nozzle which throws the liquid at an angle to the rod is somewhat superior to the straight sorts.

A poor place to economize is in buying hose, either for feet or spray-pump. In working from the ground around large trees thirty-five or forty feet is none too much. A light hose is sufficient for a barrel-and-pump sprayer, but for the more powerful machines a five- or seven-ply hose is necessary to withstand the pressure. The latter is perhaps unnecessarily heavy, adding to the work of the man who manipulates the rod. Hose fittings will surely leak, sooner or later, unless fitted with clamps which can be tightened with a screw-driver. Some of the best sprayers have the ends of the hose wrapped with wire, which it will pay to replace with clamps.

O. H. BARNHILL.

Oregon.

Antiseptic Wash.

This is frequently needed in sterilizing or killing the germs on pruning tools, when removing blight infested limbs on pear and apple trees. The most satisfactory substance is corrosive sublimate, also called bichloride of mercury. This is a very poisonous substance when taken internally, and in handling it, keep it away from your mouth. It will not hurt your hands in the least. Use at the rate of one part to 1,000 parts of water. You can get it in tablet form from your druggist, and he will tell you how to use it. Dip your pruning tools in this solution immediately after cutting every blighted limb, so as to avoid carrying the blight germs to other branches.

Arsenate of Lead.

This is the best insecticide for those insects which eat the foliage and fruit. It is useless for controlling such insects as those which suck the juices of plants. It may be added to Bordeaux or lime-sulphur, using it at the rate of 1 to 5 pounds per 50 gallons. It comes in paste form and should not be allowed to dry out. Mix it to a consistency of a thin paint, so as to avoid lumps, before putting in the spray tank.

A Great "Queen"

Horse Story
"KATE and QUEEN"
By Prof. Jesse Beery
King of Horse Trainers

Equals the famous "Black Beauty" in human interest--surpasses it in practicability. "Kate" a victim of poor handling is vividly contrasted with "Queen" who was more fortunate. You sympathize with one--rejoice with the other--even as you sigh for the slum waif and laugh with the child of fortune.

Prof. Beery has skillfully woven into this intensely interesting and true story, many valuable suggestions for handling horses--a result of a lifetime's experience.

Special Offer to Horsemen

Prof. Beery desires that every horse owner, trainer, breeder--everyone interested in horses--should read this great story. To make it possible, for a short time he offers every interested horseman a copy, worth $1.00, for the remarkably low price of

25c Postpaid

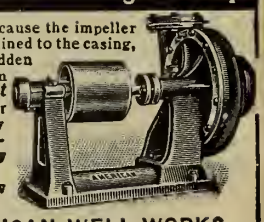
If you have even a passing interest in horses--if you own, train or breed them, you will gather from it a fund of knowledge worth many times the small price. Send for a copy. Enclose U. S. stamps or coin.

FREE With each book we send free a beautiful colored picture of Queen--oil painting effect--suitable for framing. Order today. Address

PROF. JESSE BEERY
Box 544 Pleasant Hill, Ohio

1/3 More Water raised and delivered by the **"American" Centrifugal Pump**

than by others because the impeller is accurately machined to the casing, preventing any sudden change in direction of the water. *Not an ounce* of power is wasted. Every "American" Centrifugal absolutely *guaranteed.*



Write for new *catalog.*

THE AMERICAN WELL WORKS
Office and Works, Aurora, Ill.
First National Bank Building, CHICAGO
Joplin, Mo., office: 115 West Fifth St.
Kansas City, Mo., office: 301 Scarritt Bldg.

MAKE BIG PAY DRILLING WATER WELLS

Our Free Drillers' Book, with catalog of Keystone Drills, tells how. Many sizes; traction and portable. Easy terms. These machines make good anywhere.

Keystone Well Works
Beaver Falls, Pa.

Only 40 Cents

Anti-Nicotine Calabash Pipe

THIS splendid Calabash is modeled on the lines of the original African Calabash Gourd. I have placed in it my famous Anti-Nicotine Bowl, made of a clay-like material which absorbs the nicotine and uses it to color the pipe like the finest Meerschaum.

Three for One Dollar You do not have to "break in" this pipe. There are no vile fumes. It is always sweet, clean, dry. With German Silver mountings, 40 cents each, three for a dollar. Sent prepaid anywhere with a copy of our fine catalog of smokers' articles. Send today. Money back if not satisfied.

H. Menges, The Smoker's Friend, 279 Menges Bldg., St. Louis, Mo.

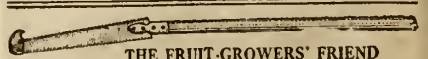
ORCHARD HEATER

Ask the men who have used them what they did in the Grand Valley, the year 1911. No refilling, perfect control of heat. Information furnished by addressing The Ward Orchard Heater Co., Clifton, Colorado.

Profitable Fruit Growing

by planting profitable trees. See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."

WINFIELD NURSERIES



THE FRUIT-GROWERS' FRIEND

No climbing. Great labor saver: 2 sizes, 8 and 12 ft. Leading orchardists use them. Made of best saw steel. Agents wanted. Write for circular and prices.

THE IDEAL PRUNING SAW CO., WEBSTER, N. Y.

TREATING OLD ORCHARD

Spraying and Systematic Pruning Works Wonders in a North Carolina Orchard

The late Dr. Knapp showed a deep understanding of human nature, when he said: "If you tell a man anything, he won't believe it, you may show him, and he won't believe it; but you make him do it with his own hands and he believes," or words to that effect. Dr. Knapp was speaking in reference to agricultural methods in the South and in favor and explanation of his plan of demonstration farms. He did great work for the South through that plan, and we have today demonstration orchards in every section, monuments to the benefits of spraying.

Three years ago the writer bought a small place in the Blue Ridge mountains, with a small neglected orchard on it. We were busy the first year in building, but noticed that in August the leaves became affected with small brown spots, and before the end of that month had nearly all fallen off. The fruit was scattering and small, and a neighbor said the trees had been planted about twenty-five years, and never had a decent crop of fruit.

The following winter we pruned the sky-scraping tops entirely out, also thinning the lower part of the trees, and in most cases getting what would pass for a "sane and safe" tree, one from which the apples could be picked with an eighteen-foot ladder.

Now, having pruned the tops, we next proceeded to prune the roots, and this is the way we went at it: We took a good sharp two-horse plow and two good heavy mules and a willing but skeptical man, and plowed as deep as eight inches right up to the trees snapping and cutting roots ruthlessly, for mind you, we were considering the removal of the entire orchard, as the trees had been neglected so long that borers had made a sad depredation among them.

At this plowing we turned under quite a crop of wild strawberry vines, some grass and a lot of briar and small stunted weeds; then we seeded to crimson clover, inoculating the seed. We hired a man with a minature fire department to do the spraying, for we had never done any spraying, and he had an orchard. But when he drove up without having made any solution, we were nearly discouraged, and when he turned his solid stream on the trees, we told the good woman of the house that it would be as well to pay the man and let him go home, for having read The Fruit-Grower, we could easily distinguish between spraying and squirting.

That fall we had quite a crop of cider apples, but not a decent specimen in the entire lot; the leaves had again fallen during July and August, leaving the trees without a laboratory in which to complete the fruit which they had begun to manufacture.

The following winter we cut out the water sprouts, and in the spring we sowed floats at the rate of four hundred pounds to the acre, turned under the crimson clover and sowed to cowpeas, and bought a. sprayer which would throw a mist or spray, a regular fog, for we had determined to give the old trees a chance regardless of the fact that people said they could never amount to anything.

We turned pigs in to harvest the cowpeas and drop apples, and if any man has gathered a crop of smoother larger apples of the varieties than we did this fall, I have not seen them; understand, it was not a full crop, neither did all the trees bear fruit, but the leaves are still on the trees, and cider apples are a scarce article with us, though some of the trees were loaded to the breaking point.

THE WAY MR. SHAY'S TREES LOADED AFTER HE BEGAN SPRAYING.

Now, a word as to spraying: We bought the commercial lime-sulphur, sprayed with a 1-10 solution early in the spring before the buds started; when the petals began to fall, we sprayed with a 1-40 solution to which we added paris green at the rate of two ounces to 50 gallons, mixing it first carefully with a small quantity of water and keeping the whole thoroughly agitated, and we put that mist to those trees over, under and through until they were as wet as though in a heavy fog.

Three weeks later, we sprayed again with the same mixture, and I might say in explanation, that our reason for using the paris green was that we could not get arsenate of lead when we wanted it, and had the other on hand.

All last winter we were contemplating the removal of the trees, for they occupy land which we wanted for raising swine, but it looks to us now, having completed the harvest of that fine crop, like we can grow forage crops for the hogs on this orchard, at the same time improve the land, and raise more and better apples with which to buy tankage and other food for the hogs, thus producing double the amount of food, for with us, the breeding of pure swine is pre-eminent, and if we can raise one crop on the ground, and at the same time another above it, we ought to be satisfied.

W. W. SHAY.

North Carolina.

Spray Trees Now

While You've Time To Do a Thorough Job. Don't Put Off 'Till Busy Spring. Use

Target Brand Scale Destroyer

A miscible oil that destroys San Jose Scale and all other scales. It spreads on contact with the tree, thus covering every part, even those missed by the direct spray.

Endorsed by every experiment station where tested. Sold by good dealers everywhere. Write for free booklet, "Fall and Winter Spraying."

HORTICULTURAL CHEMICAL COMPANY
135 South Fourth Street. Philadelphia.

WHEN you buy sprays for your trees, you do not need to ask your dealer if they will do the work; just order "Devoe". That name is your assurance that you'll get the results you want.

While Devoe sprays cost no more than other good sprays, their cheapness isn't in their first cost, but in the results in the crop.

Devoe Arsenate of Lead is the best insecticide on the market. It comes in pulp or dry form—both effective. Keeps indefinitely; will not clog the spray. It is pure, deadly, strong.

Devoe & Raynolds Paris Green is absolutely pure, strong and effective. It's made to kill potato bugs and other insects; it does. We don't need to say anything else about it; that's enough.

Devoe Lime and Sulphur solution for San Jose Scale and other things has the advantage over the home-made of never varying in strength or purity. It is not only a fungicide but an invigorator and fertilizer of fruit trees and vines.

Get your orders in early. If your dealer does not carry Devoe sprays and says he has "something just as good," better write us.

Devoe & Raynolds Company

171 West Randolph St., Chicago

New York Kansas City Denver

MASSACHUSETTS APPLES

The Agricultural College Has Established Orchards For Demonstration Purposes

The New England Fruit Show, held in Boston in 1909, demonstrated to New Englanders, and to residents of other states as well, the wonderful possibilities of fruit growing in the New England states. Massachusetts is as favorably situated as any for the production of fruit, especially the apple. Even before the time of the first New England Fruit Show, the demand for more definite information as regards the possibility of fruit production in Massachusetts was growing very rapidly. Naturally, the Agricultural College did what it could and in 1910 an appropriation became available whereby it became possible for this institution to establish demonstration orchards in the various parts of the state.

IN RENOVATING THE ORCHARD THE OLD TREES WERE CUT BACK HARD.

Even before any of the details of the demonstration orchard proposition had been worked out, many farmers from all portions of the state had made application that a demonstration orchard might be placed upon their farm. In 1910, four orchards were started in various parts of the state. The plan of these orchards is entirely co-operative. The contract which is entered into between the owner of land and the college contains the following points:

The Conditions.

The owner shall provide about four acres of land suitable for orchard purposes, prepare the same according to the directions of the Department of Pomology of the College, perform all the necessary labor thereon, furnishing fertilizers, spraying materials, etc., as may be required. He shall also keep a record, on the blanks furnished, of the various expenses incident to the production and marketing of the crops and the value of the fruit and produce sold or used on the place.

The college agrees to furnish nursery stock for planting about four acres, and, in addition, furnishes an efficient spraying outfit. The contract is binding for fifteen years unless sooner terminated by mutual agreement.

The four orchards planted during the first season have been objects of great interest in their communities.

During the past few years very few new orchards have been started in the state and in the case of those that had been started, little notice was taken of the improved methods of planting and caring for an orchard. Heretofore it had been customary to plant trees almost as large as could be obtained from the nursery, and it was rather disheartening to some of the demonstration orchard owners when they found that the college was going to furnish one-year-old nursery stock. In some cases they were subject to ridicule from their neighbors and friends. During the first year, however, the tables were turned for, with the care that was required by the college, these one-year trees made splendid growth.

Just here it is worth while to note the cost of planting orchards. In the data that has been obtained from different orchards, the cost of preparing the land and planting the trees varies from $40 to $60. About 550 trees were planted in each case, which makes an initial cost of about 10c per tree for preparation of the soil and planting. The trees, of course, were furnished by the college and were purchased at a low price, but any fruit grower should be able to buy one-year trees for from $18 to $25 per hundred.

THE SAME TREE, ONE YEAR LATER.

In an advertisement in one of the recent numbers of a fruit growers' journal, a land agent in the Far West offered apple land at from $200 to $300 per acre and, in addition, agreed to plant the orchard and care for it for four years for an additional $100 per acre, which would mean that an orchard five years old would sell for $400 per acre.

If it costs $100 per acre to plant and care for trees in the Far West that length of time, then those who are interested in fruit growing should come to New England.

Orchards at $4 per Acre.

The data that we have received from our demonstration orchards for

POTASH

Your fruit is not at its best in yield, flavor, color or shipping qualities unless the Potash supply is adequate and available.

A fertilizer for fruit should contain at least 12% Potash

Many growers use annually 200 lbs. Muriate of Potash per acre.

Potash also insures strong wood and early and continuous bearing.

Write us for prices if your dealer doesn't carry Potash Salts; also for our free books with formulas and directions.

GERMAN KALI WORKS, Inc.
Continental Building, Baltimore
Monadnock Block, Chicago
Whitney Central Bank Building, New Orleans

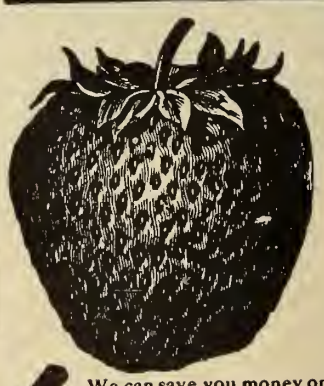
PLANT THE QUALITY GRAPE
CATAWBA-CONCORD
THE GRAPE FOR EVERYBODY EVERYWHERE

A cross between the grand old Catawba and the ever-popular Concord—so scientifically made that it unites all their merits with no defects. Equal in quality to the finest hot-house grapes—as easily grown as the Concord. Bright wine red in color, unexcelled as a keeper and shipper, as prolific as any grape grown. A ten years' test without petting has proved its superiority. Awarded first prize wherever shown, including American Institute's Certificate of Merit. Strong vines, each, $1.00; dozen, $12.00.

Large, 80-page, illustrated catalog gives full details of this remarkable grape; also of the best Raspberries, Blackberries, Strawberries, Currants, Gooseberries, Garden Roots, Hardy Perennial Plants, Shrubs, Hedge Plants, Vines, Roses, etc., and tells how to plant and grow them. Free to everybody. Write today.

J. T. LOVETT
Box 144. LITTLE SILVER, N. J.

SAVE MONEY ON FRUIT PLANTS



Healthy, northern-grown stock, which will produce money-making crops. Strawberry, Raspberry Blackberry, Currant, Grape Plants, Etc

READ OUR GUARANTEE

Every plant we ship is guaranteed to be first class and true to name, packed to reach you in good growing condition (by express), and please you, **or your money back.**

You can make big money growing good berries, but you cannot expect to grow good fruit by planting and replanting small inferior stock.

Our plants are all grown on new ground (this being the first crop) and are large, heavy rooted and free from disease.

We grow them by the million on our own ground and know what we are selling. That is why our business has nearly doubled every year for the past twenty-two years.

We can save you money on 100 plants or a car load. Our large illustrated catalogue is instructive and is free to all fruit growers Write for it today

O. A. D. BALDWIN, R. D. 12, Bridgman, Mich.

SCARFF'S 1912 BARGAINS IN SMALL FRUIT PLANTS

"At it 25 years." Have grown from 1 acre to 1,100. We do not claim to know it all. We do know enough to start you right in fruit growing. Success depends upon good plants of the right variety. We grow the right kinds and make no extra charge for them. We strive for the best in everything. We actually paid

$350 for 10 ears of SEED CORN

We have issued and send free, to anyone interested in good Corn, a booklet telling how we planted the 10 prize ears of Corn, its yield, and other instructive facts. It is nicely illustrated from actual photographs.

Send for Free Catalogue

Every reader of this paper should have a copy. It is a concise business catalogue of Plants, Fruit Trees, Ornamental Shrubs, Vines, Seed Corn, Oats, Potatoes, Alfalfa, Timothy, Clover, etc. Planters should get our prices and terms.

We give our 1912 customers a start of the $350.00 Corn FREE

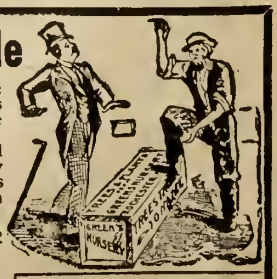
W. N. SCARFF, NEW CARLISLE, OHIO.

160,000 Apple Trees for Sale

Also big stock of **Peach, Pear, Cherry, Plum and Quince** trees. Ornamental trees, plants and vines. Apple trees are in great demand and in short supply all over the country. Order early to get what you want.

Reasons for Buying of Green: His trees are of high quality and true to name. You save agents' profits and expenses or nearly half your money by buying the new way—direct of Green. Green's trees are hardy, North-grown, free from scale. Green has a national reputation for fair dealing.

Get "Green's Book on Fruit Culture," Free. Tells how to prune, graft, bud, plant and grow trees, and how to care for your orchard after it is set out. Most valuable book of its kind for fruit growers ever published. Also ask for our big Free 1912 Catalog. Established 30 years. Capital $100,000.00.



Farmer says to tree agent, "No sir, you can't sell me trees at $1 each when I can buy better ones of Green's Nursery Co. for 25 cts."

GREEN'S NURSERY CO., 4 WALL ST., ROCHESTER, N. Y.

the past year shows that the net cost of caring for the orchard the first year, which includes the cost of soil preparation and planting, varies from 75c to $4 per acre. The value of the crops grown between the trees the first year almost completely offsets the cost of planting and caring for the orchard during that first year and this included necessary fertilizers. Where excessive fertilization was added in the way of barnyard manure before the orchard was planted, the cost was considerably more. In one of the orchards $25 per acre was expended for barnyard manure, but the returns from the land offset all other costs of production. In one of the orchards one acre was already planted to strawberries and this ochard showed a net profit of $37, after paying for all the expenses incident to the production of the berry crop as well as caring for the trees. This is only one year's results and the orchards planted in 1911 may not give as desirable returns, but it shows what can be done.

Gypsy Moth Survives.

The interest that is being taken in these orchards is very great. Letters have been received from points as far away as Nebraska, asking for information regarding these orchards. The purpose of these orchards is not only to show the exact cost of fruit production, but also to show to those residing near the orchard the proper methods of caring for an orchard. Sometimes thirty or thirty-five men would be present to get pointers on the proper methods of pruning and caring for the young trees, when a representative of the college was visiting the orchard. These orchards, being scattered throughout the state, encounter the difficulties in the way of orcharding in each section. The work of the gypsy moth is proving serious in some of these orchards that are located in gypsy moth territory. At the present time very little information has been received as to the effect of the gypsy and brown-tail moth on young trees. These orchards will, undoubtedly prove of increasing interest as the months go by and in the near future it is hoped to have some accurate information as to the cost of fruit production that will be of great value.

Renovation Returns.

The new orchards are not the only kinds of demonstration orchards which the college has started. In this section one frequently finds apple trees that are seventy or eighty years old, with solid trunk, but which have been neglected for so many years that they are practically worthless. In 1910, one orchard that had been given no special care for many years, was taken as a renovation project. This orchard contained about 100 trees and, while it had been producing some fruit, was by no means producing its maximum. This orchard was renovated under the regular five-year renovation plan of the college with very satisfactory results. The first year the orchard was closely pruned, the tops of many of the trees being lowered as much as twenty feet. The old bark on the trees was scraped off and the orchard thoroughly sprayed. The owner expended about $140 on 100 trees, and received that year in return for the fruit $195, making a net return of $55.

PLANTING A DEMONSTRATION ORCHARD IN MASSACHUSETTS.

In 1911, this orchard was again pruned quite closely, some of the trees being lowered still more, and again sprayed, according to directions of the college. In all probability, the return in fruit this year will greatly exceed that of the last, as the yield was very heavy. The renovation of two other orchards was started in 1911 and the difference in the appearance of the trees now and one year ago is very noticeable. All persons passing these farms cannot help but notice the difference between the renovation orchards and the orchards surrounding them, and the return in dollars and cents will prove an eye-opener to many people.

The interest in better fruit that is being shown by the people in all parts of this state is very great, and we note with pleasure that people in other states are beginning to realize that New England fruit will be an important factor in the apple crop of the future.

The following statement in a letter from a commission man, shows what fruit growers everywhere may expect.

"From personal observation," he says, "the fruit grown in Massachusetts and Connecticut, that was for many years a by-word among that grown in other states, will, in the future, have to be reckoned with. Growers there have been taking more pains with their orchards and today the quality is equal to some of the best in New York state." We agree with him entirely, excepting that we would state that in quality Massachusetts fruit is equal to the best produced in any state.

There is much yet for the Massachusetts fruit grower to learn, but, from the number of people that are taking our correspondence courses in fruit growing, and that are asking for practical demonstrations on their farms, the time is not far distant when New England fruit will be selling at a premium.

ALVAH J. NORMAN.
Mass. Agr. Col.

Electric

Fruit Growers' Handy Wagon

The only kind of wagon that ever should go into the orchard or fruit patch. So low down that it's twice as easy loading and unloading filled barrels, boxes, baskets and crates as on a high wagon.

Use a low Electric Handy Wagon one day with any kind of hauling you have to do and you never will use a high-wheeled wagon again.

You can drive under trees where limbs hang low without knocking off fruit. Drive around and into places you can't go with high wagons. Also saves half the labor of spraying, fertilizing, hauling trash, etc.

Steel wheels carry any load. No tire setting and no wear out to them. Broad tires do not rut soft ground, but make draft light.

You need just such a wagon. Let us prove it to you." Write for free book today.

Electric Wheel Co., Box 57, Quincy, Ill.

Protect Your Trees

DON'T take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using

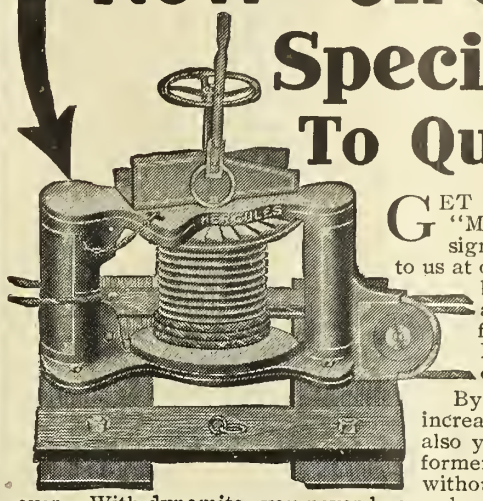
Hawkeye Tree Protectors

Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—¾ cent apiece. Special sizes made to order. Write for circular and samples.

We make Fruit Baskets—get our prices.

Burlington Basket Company
118 Main St., Burlington, Iowa

Get This HERCULES STUMP PULLER Now—On Our New Special Price To Quick Buyers



GET a postal card now and write on it "Mail me your book and proposition," sign your name and address and mail it to us at once. We will send you our new free book, all facts and our new remarkable offer on the old reliable, world famous Hercules All Steel, Triple Power Stump Puller—3 machines in one.

By pulling the stumps, you not only increase the realty value of your farm, but also you *raise crops* and *make profits*—where formerly you were simply paying taxes without getting any benefit from it whatever. With dynamite, you never know when the charge will go off—and when it does explode properly it drives the roots deep into the ground half broken up, so that you have to work on them all day to take them out. There isn't another stump puller on the market that has the strength and efficiency of the triple power, the self-anchoring and stump-anchoring features, and in addition is the one genuine all steel puller.

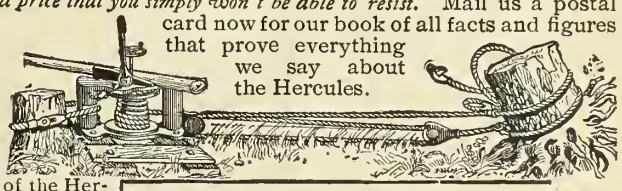
30 Days' Trial—3 Year Guarantee

We want you to get our book so you can read what many Hercules owners say about what they have done with a Hercules Stump Puller. We want you to know the many features that enable us to send you one on 30 days' trial, backed by a three year guarantee. The all-steel construction, the triple power feature that saves your team and gives a tremendous increase of power, the double safety ratchets and the careful turning and grinding of every part—all these things make it safe for us to guarantee the replacement of any casting of a Hercules that breaks any time within three years, whether it is the fault of the machine or your fault. We want to tell you about the single, double and triple power feature of the Hercules.

After you have doubled the value of your own land by pulling out the stumps, you can do contract stump-pulling for your neighbors or rent your machine at a nice profit.

All Steel—Triple Power

That is what the Hercules is and it is the only machine that is built so. Protected by patents. Note the illustration below which shows how we get our triple power. There isn't a stump, green tree or hedge grown that the Hercules won't pull out without straining or breaking any castings. Now is your chance to get a genuine Hercules *at a price that you simply won't be able to resist.* Mail us a postal card now for our book of all facts and figures that prove everything we say about the Hercules.



Write Now

Just simply your name on a postal is all we want so we can send you the convincing facts about the superiority and efficiency and value of the Hercules Stump Puller. We have only 5,000 of these machines to sell at this remarkable introductory price, so get your postal in now so we can reserve one of these machines for you until we hear whether you are going to buy or not. Only the first 5,000 buyers—one in each of 5,000 localities—will receive the benefit of this special introductory price.

Read This

Blythe, Ga., April 5, 1911.

Hercules Mfg. Co.—Your Offer "AA" outfit for pulling stumps has no equal. Five hundred dollars ($500) is quite reasonable estimate of the benefit it has been to me in the past forty-five days. I have positive, reliable proof that I pulled sixty dead pine stumps, averaging eight inches in diameter, within two hours. As you see that was two minutes to each stump and I was operating at that time with three hands. This is much more than is needed for reasonable speed. With best wishes for your success, REV. J. E. CARSWELL.

NOTE—See catalog for many other letters of interest that prove Hercules value and superiority.

HERCULES MANUFACTURING COMPANY
343 17th Street, Centerville, Iowa

MAKE YOUR OWN TILE

One Man Can Make 300 to 600 Perfect Tile a Day
WITH OUR **FARMERS' CEMENT TILE MACHINE**

at a cost of $3 to $5 per 1000. The only farm tile machine that does not require hand tamping; the only farmers' machine operated by either hand or power. Machine makes 3, 4, 5, 6 and 8 inch tile, 12¼ inches long. Our Patented Water-Proof FLEXIBLE CASING holds tile in perfect shape till set. No Pallets. If after 10 days' trial it does not meet **10 DAYS FREE TRIAL** with entire satisfaction, return at our expense. The price of the machine will be saved in making your first 2000 tile. Can You Afford to Be Without It? Write today for illustrated catalogue.

FARMERS' CEMENT TILE MACHINE CO.,
Box 407 St. Johns, Michigan.

CARE OF HOME ORCHARD

In the November issue of The Fruit-Grower, a writer says, "I would not mind trying to spray, but I have no use for 50 gallons of the stuff for a few trees." No doubt there are many others like him. There are two ways out of the difficulty; the first is to get your neighbors to join you in buying a barrel of the concentrated lime-sulphur solution, each paying his proportion of the expense, or to buy a 5 to 10 gallon can of the same material. In small lots this will cost more than it would for each one to take his share of the 35 to 50 gallon barrel. There are a number of first class firms making this lime-sulphur spray, and some will sell in small lots.

Now as to details of what is required for spraying. A small 5 gallon back sprayer can be used by taking a ladder to get at the tops of the trees. The price of one of these sprayers is $8.00 to $15.00, according to the size and what goes with it. But a much better way to spray is to get a barrel pump costing from $15.00 to $25.00 complete. The barrel holds 50 gallons and will spray 8 to 10 medium sized trees. With this outfit there should be 20 feet of ⅜-inch hose and a nozzle. A piece of ¼-inch gas pipe 8 feet long is required for high trees. A pipe is required when spraying fruit trees to enable the operator to get the spray into and over the tree. The pipe should be 8 feet long and quarter-inch bore and have a shield made of tin or rubber to prevent the spray running down this pipe and getting on the hands of the man holding it. The shield is about 4 inches in diameter with a hole in the center, only large enough for the pipe to go through and by tying a cord tightly on the rod is prevented from slipping down too far. A stop cock should be put in between this rod and the hose to be used when moving from tree or when looking over the nozzle in case of its clogging up.

In the larger outfit, since the pump is inserted in the barrel little space is required. The barrel is placed on skids and if a piece of 2x4 wood is nailed on the bottom of this skid and allowed to project a few inches beyond the ends of the barrel they can be used as handles, when lifting into a wagon or placing on a stoneboat. By using a barrel holding 50 gallons, trees can be sprayed in a short time, and of more importance, a very much better job can then be done than by any back sprayer made, as a good pressure can be maintained all the time. On small fruit such as currants the pump and barrel placed on a stone boat is very convenient as they can be drawn between the rows by a horse. This outfit is often used by those having large orchards, but using a more powerful pump which is independent of the barrel. There are outfits made which have two wheels fastened to the barrel so it can be pulled by hand but they, of course, will cost more.

Now for the formula of how to spray: For a barrel holding 50 gallons I use five gallons of the commercial-made lime-sulphur, testing 32 degrees on the Baume scale; for the home-made I use six gallons, as it is not on an average as strong, being 28 degrees to 30 degrees. The solution is put in the barrel first, then water added until full, both should be strained through two thicknesses of cheese cloth, or a milk strainer. A funnel is made for such work but it is not necessary when only a little work is to be done. The spraying can be done any time during the dormant season providing it is not raining or freezing. The wind should not blow too hard when the spraying is done as it makes it harder for the eyes besides causing waste of material. For a 5 gallon back sprayer use half of the lime-sulphur and fill up with water.

If the lime-sulphur is to be used as a summer spray it must be used at the rate of 1½ gallons of the solution to a 50 gallon barrel, adding 2½ pounds arsenate of lead. This latter to be put in when most of the water is in the barrel; strain this also. For a 5-gallon tank use one-tenth as much, or 1½ pints and 4 ounces arsenate of lead. This summer spray is to be put on just after the blossoms have fallen, and before the fruit grows so large that it begins to droop over. The object is to get the poison into the calyx of the flower, so that when the worm is hatched he gets a dose of poison. A second application two weeks later gives better results than if only one was applied, as there is generally a second brood of worms.

New York. ARTHUR E. BELL.

Southern Illinois Horticultural Society Meeting.

The Horticultural Society of Southern Illinois held their Thirty-eighth Annual Convention at Anna, Illinois, as the guests of the Union County Development Association, and the Anna Union Club, November 28 and 29. The rooms in which the exhibition of fruits was made, already contained a large display of Union county horticultural products, and in addition, an exhibition of forty specimens, of ten samples each, of corn by forty boys of one of the schools.

Union County does not claim that corn is a horticultural product, but she does claim and demonstrates by a practical showing, that there is at least one teacher and one school that knows that agriculture and horticulture can be taught in country schools. The corn showed that boys not only can raise good corn, but that a number of them knew how to select good seed corn, and when we remember the fact that there was an exhibit for each of the forty boys in the school, it can be truthfully said that it was a show of good, well selected corn.

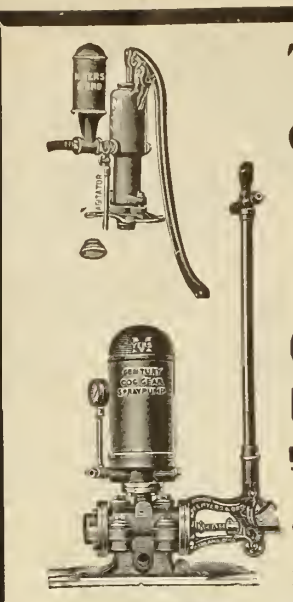
The attendance at the convention was large both as to out of town visitors and those living in the immediate neighborhood. The latter could not fail in being the fact where so much interest was taken in preparing for the meeting.

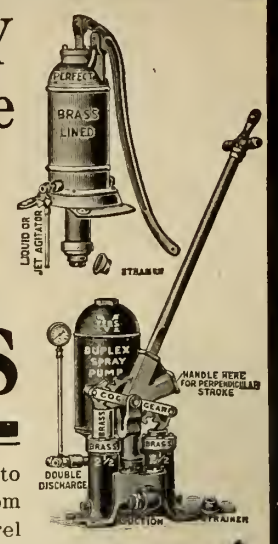
The following officers were elected: W. S. Perrine, Centralia, president; E. R. Jinnette, Anna, vice-president; C. F. Heaton, New Burnside, second vice-president; G. W. Endicott, Villa Ridge, third vice-president; E. G. Mendenhall, Kinmundy, secretary and treasurer.

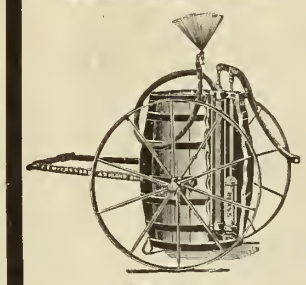
Among the papers presented was one by W. A. Ruth, of the University of Illinois, on the relative merits of Bordeaux and lime-sulphur as an ex-

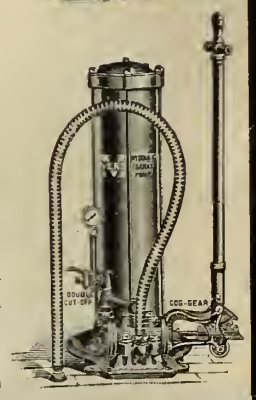
THE GREAT MAJORITY of Fruit Growers Now Use

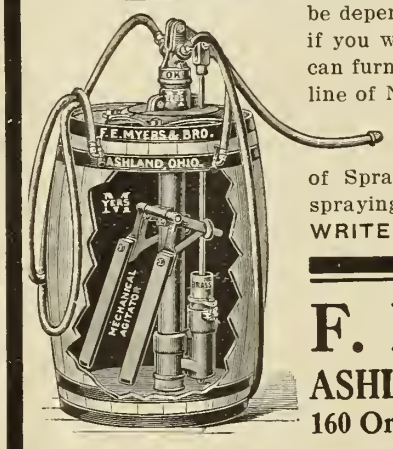
MYERS Spray Pumps







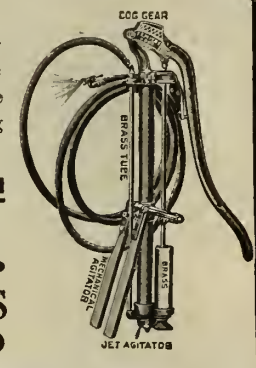




The reason for this is quite apparent, too, when you stop to consider how **MYERS SPRAY PUMPS** are made in all sizes, from the small Knapsack or Bucket Pumps up through the Barrel Pumps to the large Power Outfits. Then, too all of these pumps have been developed in line with the demands of the spraying needs and have withstood the test of years.

We show herewith a few styles of our line of Barrel Spray Pumps because we feel that there are far more fruit growers interested in Barrel Outfits than in the smaller or larger outfits. **MYERS BARREL SPRAY PUMPS** are made in many different styles and sizes to meet every spraying requirement. The prices vary according to the style of pumps, number of feet of hose, nozzles, pipe extensions, etc., that are needed; but every man can find an outfit to fill his needs and fit his pocketbook, which can be depended upon to do the work. **AND PLEASE REMEMBER** if you want a smaller bucket pump or a larger power outfit, we can furnish them also, just as we can supply you with a complete line of Nozzles, Hose, Fittings and other accessories.

Our New Spray Catalog No. Sp. 12 will give you illustrations, descriptions and prices of our complete line of Spray Pumps and Accessories, and also contains valuable spraying information, formulas, etc. It is free for the asking **WRITE FOR IT NOW.**



F. E. MYERS & BRO.
ASHLAND PUMP & HAY TOOL WORKS
160 Orange Street ASHLAND, OHIO

The Peerless Power Sprayer

Proven best by expert test.

In design, construction and economy of operation, the **PEERLESS SPRAYING OUTFIT** is without a peer among Power Sprayers. Equipped with our patent pressure regulator, insuring steadiness of pressure, and our New Design Rotary Agitator, insuring adequate agitation of Spraying Mixture. We also manufacture Automatic Power Sprayers and Hand-Power Sprayers, for growers who do not need a large outfit. Write for descriptive catalogue.

AMERICAN SPRAYER COMPANY
MINNEAPOLIS, MINNESOTA

"KANT-KLOG" SPRAYERS
Something New
Gets twice the results with same labor and fluid. Flat or round, fine or coarse sprays from same nozzle. Ten styles. For trees, potatoes, gardens, whitewashing, etc. Agents Wanted. Booklet Free.
Rochester Spray Pump Co. 196 Broadway Rochester, N. Y.

Spraying Guide Free

BIG CROPS OF FRUIT
and how to be sure of them.
See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."
WINFIELD NURSERIES

clusive fungicide. In summing up he said the following points should be considered in deciding this question:

(1) Lime-sulphur and lead arsenate have good fungicidal power when first applied, but are not adhesive so that the effect cannot extend over a long period but may be logically used if there is serious Bordeaux russeting of fruit at time of second application.

(2) Lime-sulphur alone has not great fungicidal value.

(3) Prevention of lime-sulphur injuries of the foliage consists of good general care of orchard, thus securing thrifty trees, the avoidance of drenching the trees, and to a certain extent, use of lead of arsenate in combination with lime-sulphur. Timely and thorough application are as important in preventing lime-sulphur injury as they are in preventing Bordeaux injury.

(4) The fungicidal power of Bordeaux has never been questioned but the objectional features lie in its injurious effects.

(5) Means of preventing Bordeaux injuries are, (1) the prevention of early fungus infection by thorough and timely spraying; (2) frequent repetition; (3) general good care of the orchard.

(6) Varieties differ in their susceptibility to scab. It is suggested that those less susceptible may possibly be brought through the early scab season by use of lime-sulphur carefully applied. It should be added that the effectiveness of lime-sulphur depends very greatly on the season."

The address at the evening session was by J. P. Gilbert, professor of agriculture and biology in the Southern Illinois State Normal University at Carbondale, on "The Need of Teaching Horticulture and Agriculture in the Public Schools."

Professor Gilbert is so enthusiastic in his work that it would seem there could be no doubt but what he will make a success of this branch of instruction in the Normal School if the legislature will back him up with sufficient funds.

W. W. Thomas, the Strawberry Plant man of Anna, in an address on Strawberries, said regarding the setting of plants: "I would advise sowing stock peas on the land the previous year and plowing under when peas are matured. This will give to the soil the usually much needed humus. After the land is broken a heavy application of well rotted stable manure should be thoroughly mixed with the soil. This should all be done in September or October and after thoroughly rolling and dragging land would leave it in this condition until spring. I would not advise rebreaking the land in the spring but would plant just as early as you can get on the land after danger of severe winter weather is over. I prefer to plant very early and in firm soil. I would prefer early planting to any reworking you could give the land and would plant long before the land would be dry enough to rework."

O. S. Watkins, Chemist of the Horticultural Department of the University of Illinois, emphasized the fact that the proper time of applying a spray is fully as important as the material used in spraying.

Illinois. W. B. LLOYD.

Ice Houses.

The economic value to the farm of a well-filled ice house of clear, pure ice, is emphasized by Secretary Wilson in Farmers' Bulletin No. 475, just issued by the U. S. Department of Agriculture. The bulletin does not treat of the ice crop as a source of direct revenue but as a factor in the economies and comforts of the country home.

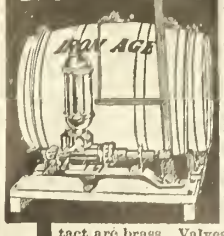
The Secretary calls attention to the readiness with which city residents can secure ice, natural or artificial, for the preservation of perishable supplies, and the maintenance of moderate temperature in their homes, during the heated term of the summer, while the remoteness of country homes from the markets often renders it necessary to use canned, corned, or smoked meat products because the want of ice prohibits the keeping of fresh meats in an edible condition. He further points out not only is ice appreciated because of its use in the preservation of fresh meats, butter, and other table supplies, but that the production of high-grade domestic dairy products is impossible without it, and that it be cooled before shipment to a degree not attainable without the use of ice.

The work of harvesting and storing is done at a season when it will cost very little to harvest natural ice as help and teams are usually less remuneratively employed during the winter than during the summer months, and the cost of constructing ice houses is small in comparison with the economic returns and comfort which they afford. The Secretary considers ice of greater economic importance in the country than in the city, and that ice properly used in the country is of greater benefit to the city dweller than to the farmers. The bulletin appears at a very opportune moment, when farmers still have time before the crop forms to build and fit up ice houses and to construct ponds, where rivers, streams, or lakes do exist, and to clear out, purify and repair those already at hand. It describes and illustrates methods and plans so clearly and in such detail that by following instructions, any farmer can cheaply provide himself with an abundant ice supply for next summer's use, stored in a house so insulated that the contents will be thoroughly conserved.

The Buffalo Market.

Apples continue to arrive and, while there is a strong demand for strictly fancy stock, the great bulk of receipts are only ordinary and have to be disposed of at low prices unless put in storage. There are something like 12,000 barrels in cold storage here, while the number in common storage cannot be estimated even. Fancy box apples are a scarce article and some very good prices are being obtained for Wenatchee stock large sizes.

SPROUTING DOLLARS



YOU have dollars that never "sprout." Are you going to leave them lie and rot? They are in your fruit trees, vines and gardens. Give them a chance, and the dollars will sprout, and grow, and bear dollars. How? By spraying.

With the IRON AGE BARREL SPRAYER you can kill injurious insects and fungi, and make your trees and gardens bear abundantly. All working parts outside, except the agitator. High pressure pump. Parts with which chemicals come in contact are brass. Valves are bronze ball.

This practical Sprayer is only one of a complete line of orchard, garden and field tools.

Write to-day for Booklets.

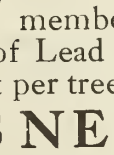
BATEMAN MFG. CO., Box 506 H GRENLOCH, N. J.

Strawberry Plants A Specialty

We have them in large quantity and can fill orders promptly. Our plants are of first quality and guaranteed to please you. Our prices are right, so do not overlook us when asking for catalogues.

O. C. Waller, Box 8, Judsonia, Ark.

Strawberry Plants



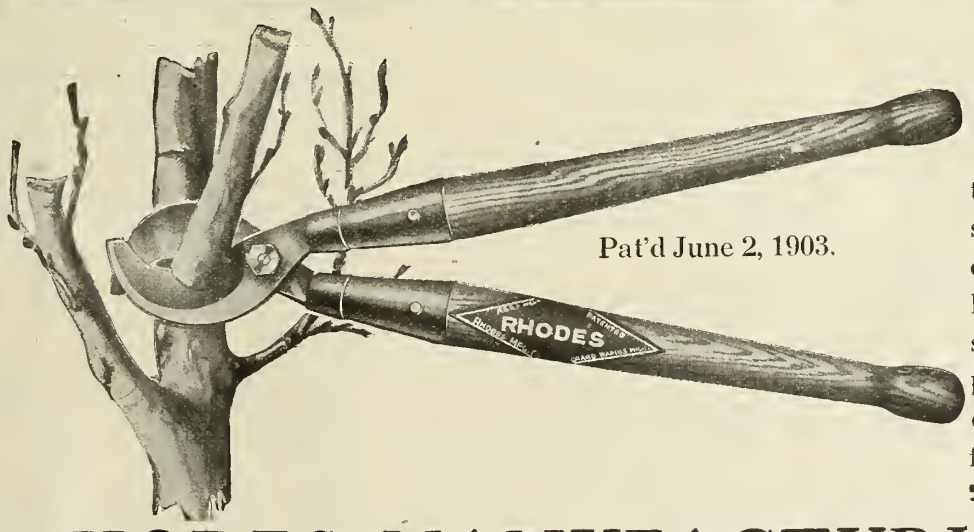
46 VARIETIES

Many varieties in Raspberries, Currants. Early and Late Seed Potatoes. Standard vigor, hardy varieties; Northern grown. Illustrated Catalogue free.

MAYERS PLANT NURSERY, Merrill, Michigan

RHODES DOUBLE CUT

PRUNING SHEAR



The Only Pruner Made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay express charges on all orders. Write for circular and prices.

RHODES MANUFACTURING CO.

356 South Division Street GRAND RAPIDS, MICHIGAN

First Prize at the National Horticultural Congress was awarded to The Rex Co., Omaha, Nebr. on

"Rex" LIME AND SULPHUR SOLUTION

ALSO ON

ARSENATE OF LEAD Fruit Growers Should Remember This—a difference in price of $1.00 per barrel on Lime and Sulphur Solution and 1c per pound on Arsenate of Lead would "look like" a saving, but is it? That would figure as an apparent saving of less than one-half of one cent per tree while the difference in *results* has cost thousands of growers $1.00 to $10.00 per tree. Time will *prove* to every grower that the *best quality* spray is a hundred times cheaper than the "cheap" price spray.

SPRAYING IS NECESSARY

Absolutely so and YOU will spray or you will quit your trees. When spraying spray right. To do that you MUST have perfect quality spray materials.

"REX" SPRAY BUSINESS is the largest spray business in the world. There's a reason why. That reason concerns every fruit grower.

"REX" SPRAYS are the "Standard of Merit" and so regarded by every state experiment station in this country.

FREE "REX" BULLETIN—It is FREE to every fruit grower who writes us for it. It's just what the grower needs.

"REX" Lime and Sulphur Solution—(the original)
"REX" Arsenate of Lead—(the perfected quality)
Spray Pumps—(gasoline, power, and hand power sizes)
Smudge Pots—(the best and most economical)

EIGHT FACTORIES

Write to THE REX COMPANY, OMAHA, NEBRASKA

OUR HOME FOLKS

Conducted by MRS. RUTH MOTHERBY. Address all Communications to Home Editor The Fruit-Grower

This Is to You.

It has been charged against the young people of today that they are frivolous, that they waste their energies in a feverish search for pleasure, and that they worship wealth above everything else. Young men declare that they cannot marry because girls demand more luxuries than they can provide, and girls say that boys are too selfish to marry because they wish to spend all they can get on their own pleasures. How much of this is true. Just why do so large a proportion of our American young men remain unmarried until they are thirty-five or forty years of age? Is it not true that most of our young people imagine that they cannot marry until they are able to begin housekeeping about where their parents are leaving off?

While a certain amount of regard for the future is praise-worthy, and, perhaps, preferable to the thoughtlessness that permits elopements on barely enough money to pay the parson, still we do not want our young people to place a greater value on personal possessions than on the good old-fashioned affection that makes the working together for a home one of the sweetest of joys.

It is difficult for our pampered young people to believe father and mother when they declare that the happiest years of their married life were those years when life was a constant struggle to make both ends meet. They can't believe such assertions when their parents show themselves so unwilling to have their children live through similar experiences. And it is a fact that the parents of today do put too high a value on money as an essential to the happiness of their children. They are robbing their children of the very experiences needed to make them self-reliant citizens, fitted by experience to act intelligently in any emergency.

We all know people who love to tell of their early experiences and of their hardships; whose stories ring with pure joy over difficulties overcome—when comparative strangers form their audience! But let a son or daughter appear and how quickly the tone of exultation ends in a sigh and, "But it was a hard life! I'd hate to have one of my children go through all I've borne."

The joy of wealth is found in acquiring it—any rich man will tell you that. True pleasure comes while overcoming obstacles. Let us not rob our young people of what was so good for us. Let us tell them of our early struggles, and teach them how good they were for us. It is good for young people to hear such stories.

Now, suppose we older people visit together, during the winter months, and tell some of our helpful hard-time experiences, and how we got through them.

To start the ball rolling we make the following

PRIZE OFFER

For the best hard-time story.....$5.00
For the second best hard-time story. 2.50
For the third best hard-time story.. 2.50
For the fourth best hard-time story ..... A year's sub. to Fruit-Grower

Men as well as women are invited to take part in this contest. Make the story less than six hundred words. All stories must be real experiences, but real names need not be signed when printed. The stories should be in this office not later than February first.

Address, Ruth Motherby, care The Fruit-Grower, St. Joseph, Mo.

A Thought for the New Year.

What scant attention we of this generation give New Year's Day! To read of the cordial hospitality that once characterized nearly every home, on this day, is like reading an old-fashioned fairy story—delightful but hard to believe. Yet it is our most ancient holiday; too old, too intimate, to be given over to the social festivities of the smart set that have nothing to recommend them unless it be their exclusiveness.

The most ancient nations celebrate New Year's day by religious observances; later, feasting and gift-making became the principal form of celebration, and still later, the really beautiful custom of making calls obtained. Why has this custom been so neglected? Can anyone give a good reason for not working for its reinstatement?

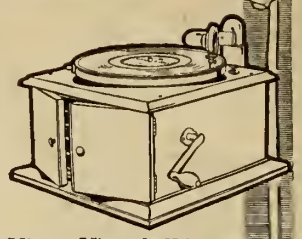
People who do not know how to live with, and to love, their neighbors are missing the very essence of life. They are not giving themselves the opportunities that were meant to teach them how to begin the new life in eternity; for fraternal love is the door to Heaven.

As we begin the new year, I think most of us feel that we are taking a new start. Some of us make good resolutions; some are too cowardly to do that, fearing they will not be able to keep them. I believe in making good resolutions, even though they are destined to be broken! I like the idea of rearranging and straightening our lives, which the forming of new resolutions implies—the getting rid of troublesome rubbish, and facing the future with hope and courage and a desire to do better. If we only give one hour to the business, and then settle back into the old ruts, who can say that that one hour each year is not worth something.

The future is always better than the past, if we only look at it right. The time to live is right now; our pleasures and duties are of today, and they are right at our feet. Our friends are all about us—the only friends of whom we can be at all sure; so let's resolve to know them, and let's begin today to carry out that resolution. Let's decide to love them, and to do that we must call upon them at once while our hearts are warm with our good resolutions. Let us not keep to ourselves, hoping some day to be able to make friends among some class whom we think superior to our present circle of acquaintances; for we may not live to join that ideal circle. And if we haven't learned how to live with our neighbors, these coveted friends may not like us when we do meet.

I plead for sociability because it leads to unselfishness. One can not help one's neighbors unless one has some means of discovering that they need help. One can not receive comfort in time of trouble unless one has learned how to give comfort to others. To know your neighbor is to have a new source of knowledge, for everyone can give us some new outlook on life if only we are ready to receive it. I believe it is impossible for those who pride themselves on their exclusiveness to be real Christians. "Love thy neighbor" is a com-

YOU may not live in the musical centers where there are regular seasons of grand opera. You may be far away from any city where concerts are given by the great bands and orchestras. You may never even have the opportunity of hearing any of the leading artists on their concert tours.



Victor-Victrola IV, $15
Other styles $25 to $200

And yet with a Victor or Victor-Victrola and the wonderful repertoire of Victor Records, you can right in your own home hear the greatest artists and develop a better understanding of the world's best music than if you were privileged to attend such performances.

The Victor and Victor-Victrola fill a great gap in the daily lives of people everywhere—bring the world's best music right into the home for everyone to enjoy.

And whether you crave for beautiful operatic arias and concerted numbers by the world's greatest artists, or classic symphonies by famous orchestras, or stirring band music, or just want some popular song or vaudeville sketch to amuse you and while away the time, the Victor and Victor-Victrola bring you whatever you want; everything that is beautiful, entertaining, instructive—a delight to the mind as well as to the ear.

Victor I, $25
Other styles $10 to $100

Go today to any Victor dealer's and he will gladly play any Victor music you wish to hear. Write to us for catalogs.

Victor Talking Machine Co.
23rd and Cooper Sts., Camden, N. J.
Berliner Gramophone Co., Montreal, Canadian Distributors

Always use Victor Records, played with Victor Needles—there is no other way to get the unequaled Victor tone.

Victor

Captain King's Novels
Lippincott's Magazine
and the
Fruit Grower
for
$4.35

It's easy for you to figure that this offer represents good value. Captain King's Novels (four of them in this offer) are handsome, big, well-bound, well-printed books; Lippincott's is $3.00, and The Fruit-Grower is $1.00 a year—one year of each.

If you like good reading, this is your chance. Captain King is known the world over as our foremost military novelist, and Lippincott's has represented for forty-three years the very best class of fiction.

Lippincott's is bigger, broader and better than ever before. Thirty-six pages have been added, automobile and financial departments, and new features in its famous fiction.

Send in Your Order Now

We shall have to withdraw our offer as soon as the edition of Captain King's books is exhausted—and there will not be enough for everybody. Send all remittances to

LIPPINCOTT'S MAGAZINE
Philadelphia
The books are sent prepaid anywhere in the United States.

THE "BEST" LIGHT

Makes and burns its own gas. Pure white 500 candle power light, more brilliant than electricity or acetylene, and cheaper than kerosene. **Casts no shadow.** Costs two cents per week per lamp. No dirt, no grease, no odor. Used in every civilized country on earth. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog.

THE BEST LIGHT CO.
277 E. 5th St., Canton, O.

WONDER LAMP

The United Factories of 538 Wyandotte Street, Kansas City, Mo., is making an offer to send a Wonder Burner which fits **FREE** your old lamp free to one person in each locality in the U. S. who will show and recommend this marvelous new incandescent 100 candle power oil lamp burner. Simply send your name and address for their offer.

TRAVELING MAIL BOX

For those who have from 300 ft. to 1½ miles to go for their mail. Easily placed on telephone poles or 2 x 4's fastened to fence posts. The

OAKWOOD MAIL CARRIER

Made entirely of metal. Ball-bearing pulleys. Sold on thirty days' trial. Write for book "Getting the Mail." Oakwood Mfg. Co. 13 Stanton Ave. Springfield, Ohio.

BEACON LAMP BURNER FREE

100,000 satisfied users
Incandescent. 100 Candle Power. Burns common coal oil. Gives better light than gas, electricity or six ordinary lamps at one-sixth to one-tenth the cost. Fits your old lamp. Unequaled for fine sewing or reading.

COSTS ONLY ONE CENT FOR SIX HOURS

We want one person in each locality to whom we can refer new customers. Take advantage of our Special Offer to secure a Beacon Burner FREE. Write today. Agents Wanted. HOME SUPPLY COMPANY, 380 Home Building, Kansas City, Mo.

Virginia Apple Lands

One hundred and twenty acres of high-grade apple land in Shenandoah Valley for $2,000.00, to insure quick sale. Within two miles of the largest apple shipping station in Virginia and no better land for apples in the state. Well watered by springs and streams, and partly cleared. Easily worth double price asked. Other lands in large and small tracts at $15.00 to $50.00 per acre. Address

F H LaBaume, Ag'l Agent

Norfolk & Western Ry.
Box 2031, Roanoke, Va.

In writing advertisers please mention The Fruit-Grower.

The Location of an Orchard or a Commercial Truck Farm

has much to do with the ultimate financial success of the enterprise. A crop well grown is only half of the work done. The marketing is equally important and proper location is the chief consideration. The best fruit and truck country, most convenient to the market, on a short north and south trunk line, especially equipped to handle perishable goods, each station having its day in the market is along the Kansas City Southern Railway. Ten to forty dollars an acre will buy the best unimproved fruit lands in southern Missouri, Oklahoma, Arkansas, Texas and Louisiana, producing every variety of fruit from apples and strawberries to peaches, plums, grapes, figs and oranges, as well as commercial truck from January to December. Write to William Nicholson, 32 Thayer building, Kansas City, Mo., for reliable printed information.

TEXAS LAND EXPOSITION

and Northern Settlers' Convention, Houston, Texas, Jan. 15-28, 1912. Low inter-state railroad rates. Eighteen lines into Houston. Homeseekers and investors should not miss this opportunity to visit Texas and see the South's great Land Show. More than 1,000 exhibits of farm products and machinery. Any information about Texas, Texas lands and opportunities on request.

TEXAS LAND EXPOSITION
Publicity Department, Houston, Texas

BEAUTIFULLY ILLUSTRATED
BOOKLET ABOUT DELAWARE
the State of red apples. luscious peaches, strawberries and of ideal homes. Address
State Board of Agriculture, Dover, Dela.

Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per cent.

A Free Trial Package Is Mailed to Every-One Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manuf'r, 18 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.

Less Price but Priceless
SUN Gasoline LAMP
Satisfaction or Money Back
Cheapest but brightest light for indoors. Burns 90 per cent. air—10 per cent. hydro-carbon vapor. 100 candle power each burner. No smoke, grease, odor. Hollow Wire Systems also. Get Free Catalog.
SUN LIGHT CO.
1237 Market St. Canton, O.

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. Hanson & Son, Hart, Mich.

mand that must be understood and lived, before one can know what it means to love God.

So let's build our New Year resolution, this year, around the thought of fraternal love, and begin at once to put it into effect. By so doing, we may have an entire good day, instead of a brief hour of the uplift that comes with every honest effort to reach a higher plane.

RUTH MOTHERBY.

For Coughs and Colds.

Here are a few old-fashioned remedies for coughs and colds that I am sure will be appreciated by young housewives who live a long way from a doctor.

Cook three large onions in a pint of vinegar until they are tender, then strain the juice through a thin cloth, squeezing the onions a little to get it all out. Add three tablespoonfuls of loaf sugar, and boil the mixture down one-half. Give half a teaspoonful of the syrup every fifteen minutes until relieved. Be very careful not to catch more cold while taking this, as it leaves the skin rather sensitive. This remedy is for the cold that seems to settle in the throat and bronchial tubes, and which is usually accompanied by a cough.

For a cough that persists when the cold has disappeared, make a syrup as follows: Take one-half pint water, and one level teacup sugar. Cut the lemon in quarters and boil it in the water for fifteen minutes, then remove it from the fire and add five cents worth of paregoric. Take a tablespoonful every hour, or oftener if the cough is severe. This is particularly good for a harsh, dry cough.

An excellent remedy for whooping cough is made by simmering a pint of sunflower seeds, crushed, in a quart of water until but half of the water remains; then add a pound of loaf sugar and a half pint of best brandy. Give from two drops to two teaspoonfulls of this mixture, according to the age of the patient and the severity of the cough. I have known bad cases of bronchitis to be cured by taking this syrup.

One should always keep powdered golden seal on hand to be sure in case of sore throat. It is the best of remedies, and very easily taken.

At night, put a cold compress on the throat and chest. I have cured a cough in this way when nothing else seemed to help. Wring a towel from cold water, and pin it about the neck, then put a thick layer of flannel over that. In the morning, rub the throat with cold water before removing the flannel; rub under the flannel, so that the air may not strike the surface until the pores have been closed. Alcohol is better than cold water, but one does not always have that handy. Put on a compress for a night or two after the cough seems to be cured, or the soreness to have vanished, in order to make sure that all inflammation has been drawn out. When the nose is stopped up so that you can hardly breathe, put a compress on nose and forehead, upon retiring. You will be surprised to see how quickly it will relieve you. If the head aches all over, as it sometimes does with a heavy cold, put the compress around it, so that it covers the base of the brain, the ears, and the forehead.

When you feel a cold in the head coming on, take the following; Drop six drops of strong camphor on three teaspoonfuls of sugar, stir well, then add six teaspoonfuls of cold water. Give two teaspoonfuls of this at first, then one teaspoonful every fifteen minutes until it has all been taken. Now prepare more in the same way, and give a teaspoonful every half hour until it is gone. Prepare it a third time, and give a teaspoonful every hour. Do not imagine it will be just as well to prepare it all at once, for the camphor seems to lose its curative properties by standing. Anyhow, we have learned by experience that is not as good when not freshly prepared. This will cure a cold in the head every time, if taken early enough but does not seem to be of much value when the cold has become settled.

Whatever else you do, be sure to take a good dose of physic as soon as you feel that you are taking cold. I think there is nothing as good for this purpose as Epsom salts. And I always follow it with as much hot water as I can drink. Get bowels and kidneys to working freely, and the cold is bound to disappear. If the cold is unusually severe at the start, and there are grip symptoms, get the skin to act. This is done by hot baths and hot drinks to induce perspiration; but you must go to bed to avoid taking more cold, and make up your mind to fight it in earnest. In such cases, drink hot sage tea, instead of hot water—pints of it if you can. Many and many a fatal illness has started with a cold and might have been prevented had the cold been taken in time. It is foolish to say "it is only a cold" and then neglect it.

CASSANDRA.

The Old-Fashioned Nurse.

I am an old-fashioned nurse. I am fifty-eight years old, and I began taking care of the sick when I was eighteen, so, you see, I've had plenty of experience, even if I haven't had much hospital education. Nursing runs in our family. My mother did it; so did her mother and all her aunts on the mother's side. We have pet remedies for nearly everything—some of them going so far back that we don't know who first began using them. I don't know as I can tell you anything that anyone would care to read; but Mrs. Motherby has asked me to try, and she has promised not to tell anyone my true name, so I've decided to see what I can do.

When I get to talking about my remedies, I sometimes forget that there are doctors in the world. That is because most of my work has been done in places where it isn't easy to get a doctor, and I've been obliged to do the best I could without one; but don't imagine I have any quarrel with the medical profession, even though they don't think I know much because I am not a professional nurse! Professional nurses are first rate when it comes to following doctor's orders; indeed, that is pretty much all they are good for. I've seen them scared stiff, many a time, when confronted with a case where something must given at once. That's where I shine. I know what to give, and what I give never hurts, even when it doesn't help very much. But it usually helps. If I hadn't made something of a reputation, I shouldn't have been asked to write up some of my experiences.

It isn't given to everybody to know exactly what disease a person is threatened with; for that reason, a doctor should always be summoned as soon as it is discovered that ordinary remedies fail to alleviate. But, when rightly administered, commonsense, everyday treatment will save a doctor's bill nine times out of ten.

What a pity it is that the remedies which our grandmothers found so efficacious should be held in such contempt by our daughters! An old doctor once told me that if women knew the virtues of Epsom salts, sulphur and the old-fashioned decoctions of herbs, nine-tenths of the doctors would have to go out of business. I reminded him that he had forgotten to include castor oil, and he exclaimed, "One of the very best."

I recall, with pleasure, the days when I was allowed to accompany my grandmother on her tramps in search of the medicinal herbs that grew wild near her home. And her little garden of herbs in a fence corner near the vegetable garden! With veneration it was regarded by the children of the neighborhood, who believed it to contain a specific for every ailment that might otherwise make them very uncomfortable.

When my mother was going among the sick, she believed that women who did not know how to use hot and cold water to cure illnesses of almost every description were more in need of instruction than the heathen. I am not so sure but I agree with her, for I've cured difficulties by means of water that seemed almost beyond help. I once cured a case of appendicitis

300% Profit!

If hogs are the "mortgage lifters" in the corn belt, what would you call them in Arkansas and East Texas, where, according to *government test*, they can be fattened at 1½ *cents per pound*. Farmers there have *proved* that an acre of peanuts will put on 1,200 pounds of pork—*three times* as much as an acre of corn. Peanuts, grown on land there that can be bought for $10 to $20 per acre, will return $80 *per acre* when marketed through pork. And peanuts are grown by the *same methods* used for corn.

On account of the mild, healthful climate, and the *splendid* variety of stock feeds which can be grown on lands along the

Cotton Belt Route in Arkansas and Texas

a sow will stand more frequent breeding and will bring bigger litters than the same grade sow elsewhere. Mr. Hays, of Waldo, has a Tamworth hog which brought 48 pigs in *fourteen* months. This is unusual, of course, but *two big litters* can be *counted* on, each year. The same conditions that make hog raising so profitable, make any line of stock raising pay *big* in Arkansas and Texas.

There are many sections in Arkansas and Texas that are *just suited* for your line of farming—where you can buy *many* acres with the price of every *one* you now own—get the benefit of the *big* boost in land values sure to come—live in a mild climate where you can do money making work *every* month—without sacrificing *anything* in living conditions that you now have. Telephones, good schools, rural delivery, modern towns, close markets—you'll find them all through Arkansas and East Texas.

On the 1st and 3rd Tuesday of each month there are very low round trip excursions to Arkansas and East Texas via Cotton Belt Route, allowing 25 days for trip and *free stop overs*. Plan to go on the *next* one.

Get our new free books

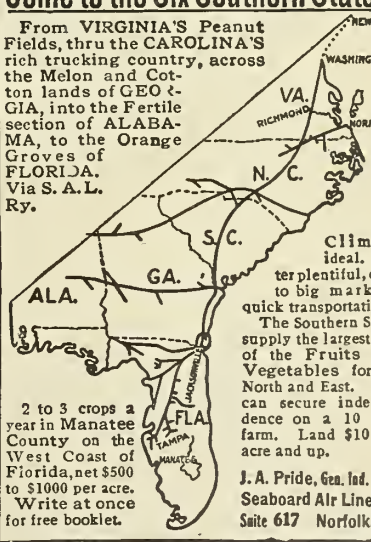
—written by a practical farm man, who went from county to county and talked with the farmers themselves and got pictures of their places. 115 pictures and 100 pages of plain farm facts, describing every kind of farm opportunity Southwest. Nothing will convince you like these statements from your own people. Write today.

E. W. LaBEAUME,
General Passenger Agent
1421 Pierce Bldg., St. Louis

COTTON BELT ROUTE

Come to the Six Southern States

From VIRGINIA'S Peanut Fields, thru the CAROLINA'S rich trucking country, across the Melon and Cotton lands of GEORGIA, into the Fertile section of ALABAMA, to the Orange Groves of FLORIDA. Via S. A. L. Ry.



Climate ideal. Water plentiful, close to big markets, quick transportation. The Southern States supply the largest part of the Fruits and Vegetables for the North and East. You can secure independence on a 10 acre farm. Land $10 per acre and up.

2 to 3 crops a year in Manatee County on the West Coast of Florida, net $500 to $1000 per acre. Write at once for free booklet.

J. A. Pride, Gen. Ind. Agt., Seaboard Air Line Ry. Suite 617 Norfolk, Va.

Do You Want a Home in the
Beautiful Ozarks
of Missouri, in the Famous Strawberry Land

Apples, Peaches, Pears, Grapes, Raspberries, etc., all grow excellently. Ideal location for the dairy and poultry business. We offer for sale 60,000 acres of land in 40-acre tracts or more, cheap and on easy terms. Located in Stone and McDonald counties. For further information address

McDonald Land & Mining Company
Rooms 301-2 Miner's Bank Building
Joseph C. Watkins, Mgr., JOPLIN, MO.

Map of Michigan Free!

A Postal Card will get you one.
J. E. MERRITT, MANISTEE, MICHIGAN

STOP! STOP! STOP!
Thirty Days Trial of
United States Bonded Engine. Burns gas, gasoline, kerosene, distillate. Consider these
12--Advantages--12
1st, Pays for itself in fuel saving in short time. 2nd, No violent vibration. 3rd, Greatly reduced bulk. 4th, Easily portable; mounted anywhere. 5th, Every engine part and horse power guaranteed. 6th, Absolutely frost proof. 7th, Positively most economical running engine made. 8th, Only engine with pulley on both sides. 9th, Small pulley on cam shaft, for very slow machines. 10th, Perfect Lubrication, cooling & ignition. 11th, Lowest cost engine in the world. 12th, Made by reputable firm, 60 years in business.
2 to 50 H. P. Wonderful New Pumping Engine
Send postal today for Illustrated Catalog.
United States Engine Works
1529 Canal St., Chicago, Ill.

IDEAL FEED MILLS
For over forty years we have made a business of building Feed Mills, with the result that our present types of machines embody all good features, and are built with a view of easy operation, long life and large capacity. We have them for all classes of grinding.
Send for catalog.
Also Windmills, Pump Jacks and Gasoline Engines
STOVER MANUFACTURING CO.
260 Ideal Ave., Freeport, Ill.

CIDER PRESSES
THE ORIGINAL MT. GILEAD HYDRAULIC PRESS produces more cider from less apples than any other and is a
BIG MONEY MAKER
Sizes 10 to 400 barrels daily, hand or power. Presses for all purposes, also cider evaporators, apple-butter cookers, vinegar generators, etc. Catalog free. We are manufacturers, not jobbers.
HYDRAULIC PRESS MFG. CO., (Oldest and largest manufacturers of cider presses in the world.)
51 Lincoln Avenue. Mount Gilead, Ohio

COOK YOUR FEED and SAVE Half the Cost—with the
PROFIT FARM BOILER
With Dumping Caldron. Empties its kettle in one minute. The simplest and best arrangement for cooking food for stock. Also make Dairy and Laundry Stoves, Water and Steam Jacket Kettles, Hog Scalders, Caldrons, etc. Send for particulars and ask for circular.
D. R. Sperry & Co., Batavia, Ill.

Make $25 to $50 Weekly
selling the Automatic Combination Tool in your home county. A Fence Builder's Tool, Post Puller, Lifting Jack, Vice, Wrench, etc. Used by Farmers, Teamsters, in Factories, Mills, Mines, etc. Weight 24 lbs. Capacity 3 tons. No experience necessary. Free instruction. Write for special offer to live agents. Send no money. Name county where you live.
AUTOMATIC JACK COMPANY
Box 99 Bloomfield, Ind.

HOW TO GET BETTER LIGHT From KEROSENE (Coal Oil)
Recent test by Prof. Rogers, Lewis Institute, Chicago, and Prof. McKergow, McGill University Montreal, on leading oil-burning lamps show the Aladdin Mantle Lamp is the most economical and gives over twice as much light as the Rayo and other lamps tested. It is odorless, safe, clean, noiseless. Better light than gas or electric. Every Aladdin Lamp fully guaranteed and protected by patents in nearly every country on earth. Our burners fit your old lamps.
To introduce the Aladdin, we will give
ONE LAMP or BURNER FREE
in each neighborhood. Send postal with name and address, ask for catalogue M. AGENTS Ball sold over 1000 on money back guarantee; not one returned. Bruner sold $800 in 15 days. Ask for liberal agency proposition. Sample lamp furnished.
MANTLE LAMP COMPANY, 174 Aladdin Building, Chicago, Ill.

RUBBER STAMPS
We have received orders from almost EVERY STATE in the Union from our adv. in the Fruit-Grower. Please add your name to our list of satisfied customers. ASK FOR FREE CATALOGUE.
Gardner Office Supply Co.
SPRINGFIELD, MISSOURI

GOOD LIVE SALESMAN WANTED
To Sell Peyton Bros. & Barnes TREES. They are "True to Name" and adapted to your locality—Cash Weekly
BOONVILLE NURSERIES, BOONVILLE, MISSOURI

Secure and Profitable
These essentials of a good investment are combined in our
7% First Mortgage Gold Bonds
Paying Interest of 7%
payable every six months in coupons attached, which can be collected through your local bank. Issued in denomination of $100, and fully protected by the entire assets of the company. These bonds are dated July 1, 1907, and run ten years.
Write for full details and booklet.
THE FRUIT-GROWER
St. Joseph, Missouri
Capital Stock, $100.000.00, Fully Paid

that the doctors declared called for an operation, by giving copious enemas of oil and hot water until I was sure that the oil reached the appendix, and at the same time giving teaspoonful doses of castor oil, and keeping the patient on a liquid diet. I kept this up until all the soreness was gone from the side, and although it happened more than five years ago, there has never been a return of the trouble. I have had many similar cases in my day, and so did my mother before me. She taught me to call the trouble inflammation of the bowels; but I always say appendicitis now, for it sounds as if I knew more.

And the cases of bad stomach trouble I've cured with castor oil would do credit to any practitioner—and I'm not a bit egotistical when I say so. Perhaps I'll tell you how to do it—if anyone really wants to know.

AUNT KETURAH.

Sensible Dressing.

How to look well dressed on almost nothing a year is the problem that a majority of women feel obliged to solve, and more especially where there are several growing children to provide for. Just at present, the styles seem to favor those who must practice economy, in that so small an amount of material is required for a gown; but it is a question whether the present exaggerated styles are to be in favor long enough to pay for putting good materials into them. I know several women who are able to have three or four new gowns every season, yet who are having almost nothing new. Instead, they are making their partly worn gowns over into the new styles, and in that way will be ready for an entire new outfit when the styles change.

One who must be very economical should be very careful in selecting material for the new gown. She should choose subdued colors and she should never be tempted by the new things in dress goods that may or may not wear well. There is nothing better than black, if good material can be afforded, and nothing worse for cheap materials. It is always a good plan to buy rather more than will be needed, for use in making over. A good black dress may be made to do duty for years, as I know from experience. I have a black broadcloth that I have worn for nine years, and an evening dress of black net that is being darned a little today, and has been worn more or less for ten years. I also have a black silk crepe that I have had for eight years. I felt extravagant when I purchased each of these gowns, yet they have paid for themselves, and I have looked much better dressed than I should have done had I bought more gowns and cheaper ones.

A woman who would look well dressed should select colors that bring out the brightest hues of the hair, and give a touch of softness to the skin. In most cases, colors demanded by the hair, are also best for the skin; but this is not always so. There are few who can not determine, at least after a few trials, what they can wear most successfully; and then they should stick to it. I know one woman who wears blue almost exclusively, because it is her most becoming color. Even when blue is not found in the most popular materials, she finds it is something less popular, and she always looks well dressed. The trouble with women is that they are so anxious to be in style, that they are tempted to choose the popular thing, knowing that it is not as becoming as something else would be. And such women are never well dressed. That is why one sees more women who are not well dressed than of those who are.

You will see the same thing in hair dressing establishments—for one who goes to learn how her hair may be most becomingly dressed, you will find ten who want it in the latest style, no matter how unbecoming it may be. If you want to look really well dressed, find a way to arrange your hair to soften the face and show the shape of the head to the best advantage, then stick to it—no matter what fashion may dictate. You may not look like a fashion plate, but you will look well dressed; and you won't be half as absurd as those who tried to look like a fashion plate and failed.

GWENDOLYN GREER.

The New Home.

I was much interested in the building number of our paper, and when I saw it, I wished that I had contributed for I have some good ideas that no one else seems to have shared with me! But spring is coming, and that is the season when housebuilding becomes really a fad; so I'll say something for those who are planning the new house to be built in the spring.

Whatever you do, have plenty of closets, a good shed with a trunk room, and a nice large bedroom down stairs—"mother's room," you know. Mother may not sleep in it, much of the time, but that room is a necessity just the same. She will go there to lie down a few minutes, when she wouldn't think of going upstairs, and when she is sick, she will keep in bed as she is told to do while convalescing, if she can be near the rest of the family. I know from experience what such a room means to the entire family.

Mother's room should be large, and it should have a very large closet—at least three feet wide, and extending the entire length of the room. About three feet should be cut from one end of this closet for drawers and a cupboard; but don't have the drawers opening into the closet. Instead, use the lower four feet and a half of the closet space for four nicely fitting drawers opening into the bedroom. Have another deep drawer built in close to the ceiling, and also opening into the bedroom. Line this upper drawer with asbestos, so as to have it as nearly fireproof as is possible, and fit it up with compartments of asbestos. This drawer is not easily reached, being so high, but it is designed for the family papers that are not often referred to, yet which require a safe place. They are not easily interfered with in such a drawer as this, and they occupy space that could not well be used for anything else.

Between this upper drawer and the four lower ones the space should be utilized for a cupboard, also opening into the bedroom. This cupboard should have compartments and small drawers as well as shelves, for it is designed as a medicine chest, as well as a receptacle for articles that must be kept from childish fingers, and should be fitted with a spring lock, and no means by which the doors can be opened except with a key.

I have a lavatory something like that mentioned in one of the housebuilding articles. It is really not much more than a large entry between the kitchen and the shed, and it is fitted up with hooks for coats and hats, cupboards for mittens, etc. There is also a box covered with denim which may be used for a seat. This box contains clean socks, and is very handy when the men come in with wet feet. They sit on the box while changing, and have only to reach over to the slipper case for their slippers, and thus they are much more apt to take time to make themselves comfortable, and to come into the house with clean shoes.

A small store room should be partitioned off from the woodshed, and fitted with shelves, etc, so that ev-

Glasses Absolutely Free
Now look here all you weak-eyed, spectacle-wearing readers of this paper, you've just got to quit wearing your dim, scratchy, headache-producing, sight-destroying spectacles at once as I am going to send you a brand new pair of my wonderful "Perfect Vision" glasses absolutely free of charge.
—These "Perfect Vision" glasses will enable you to read the very finest print in your bible even by the dim firelight—
—These "Perfect Vision" glasses will enable you to thread the smallest-eyed needle you can lay your hands on—
—These "Perfect Vision" glasses will enable you to shoot the smallest bird off the tallest tree top on the cloudiest days—
—These "Perfect Vision" glasses will enable you to distinguish a horse from a cow at the greatest distance and as far as your eye can reach—
Now please remember these wonderful "Perfect Vision" glasses are free—absolutely free to every reader of this paper—not a cent need you pay for them now and never.
I therefore insist that you sit down right now—this very minute—and write me your name and address at once and I will immediately mail you my Perfect Home Eye Tester and a four-dollar cash certificate entitling you to a brand new pair of my wonderful "Perfect Vision" glasses absolutely free of charge—just as cheerfully as I have sent them to nearly all the other spectacle-wearers in your county. Address—
DR. HAUX—The Spectacle Man—
ST. LOUIS, MO.
NOTE:—The above house is perfectly reliable.

I WILL MAKE YOU PROSPEROUS
If you are honest and ambitious write me today. No matter where you live or what your occupation, I will teach you the Real Estate business by mail; appoint you Special Representative of my Company in your town; start you in a profitable business of your own, and help you make big money at once.
Unusual opportunity for men without capital to become independent for life. Valuable Book and full particulars FREE. Write today.
NATIONAL CO-OPERATIVE REALTY CO.
E. R. MARDEN, President
M144 Marden Building, Washington, D. C.

PATENT YOUR IDEAS
$8,500 offered for one invention. Book "How to Obtain a Patent" and "What to Invent" sent free. Send rough sketch for free report as to patentability. Patents advertised for sale at our expense in Manufacturers, Journals.
Patent Obtained or Fee Returned
CHANDLEE & CHANDLEE, Patent Att'ys
Established 16 Years
1046 F. Street, Washington, D. C.

PATENTS That Protect and Pay
Send Sketch or Model for FREE SEARCH
Books, Advice, Searches and FREE!
Big List of Inventions Wanted
Watson E. Coleman, Patent Lawyer, Washington, D.C.

FREE WATCH RING & CHAIN
We positively give to BOYS and GIRLS a BEAUTIFUL American-Made stem-wind, stem-set watch with handsomely designed case, proper size. GUARANTEED 5 YRS. Also dainty ring, set with three sparkling stones, for selling 20 jewelry articles at 10c each. Order jewelry today. When sold send $2 and we will send watch, ring and chain.
We Guarantee Satisfaction.
Dale Watch Co., Dept. 48 Chicago

4 BUGGY WHEELS FREIGHT PAID STEEL TIRES $8.75
With Rubber Tires, $18.45. Your Wheels Rerubbered, $10.30. I make wheels ¼ to 4 in. tread. Tops, $6.50. Shafts, $2.10; Repair Wheels, $5.95; Axles $2.25; Wagon Umbrella free. Buy direct. Ask for Catalog Q
SPLIT HICKORY WHEEL CO., 530 F St., Cincinnati, Ohio.

8% On Your Money. Best real estate security. All cash or small monthly payments. Write us today. EDUCATIONAL INVESTMENT CO. Merchants Trust Bldg., Los Angeles, California

Please Mention The Fruit-Grower whenever you correspond with our advertisers

CHOICE VIRGINIA FARMS ALONG THE C. & O. Ry—As Low As $15.00 Per Acre
Fertile 10 acre (adjoining) tracts of land, suitable for poultry, truck and fruit, near Railway station, only $275. 20 acres for $500. "Country Life in Virginia" booklet of 134 pages gives full description of broad tracts for alfalfa, corn, and other grains and grasses. Abundant rainfall—excellent markets—delightful climate. Low excursion rates and booklet free. Address:
K. T. CRAWLEY, Industrial Agent, Chesapeake & Ohio Railway, Richmond, Va. Box S

FREE TO YOU
I want to send every little girl a Speaking and Sleeping Doll; will say "Mama" and "Papa". The prettiest, daintiest and sweetest Dolly you ever saw. Elaborately and stylishly dressed; lace trimmed hat and gown; shoes and stockings; 17 ins. high. Pretty head. Long golden curls. Will close its eyes. There is everything about this doll to endear it to the heart of its owner.
EXTRA PRIZE An extra prize for all little girls who write promptly. You want to get the EXTRA PRIZE sure. Net one cent of your money is required, so write today.
THIS TALKING DOLL
Send No Money—
Just Your Name & Address—A Postal Card Will Do. I don't want any money. All you have to do is to write me for my GREAT FREE OFFER and say you want a Mama and Papa Talking Doll. NOT ONE CENT OF YOUR MONEY is REQUIRED. Write at once.
UP-TO-DATE
Dept. 5, Indianapolis, Ind.

erything can be kept in its place and not an inch of space be wasted. This is where the trunks, valises, etc, can be kept. It should also contain a large chest for extra bedding, and another for the clothing that is packed away at the close of a season.

It sometimes seems that to fit up such places is to make the building entirely too expensive; but do make an effort to get them, even if the house cannot be entirely finished at first. They do help so much in keeping the house tidy. They save the mother so many steps; for when something is to be hunted up, who but the mother can ever find it?

MRS. JACK BARRY.

Our Chafing Dish Club.

While my best friend is writing out our pet receipts for making candy, I will tell you about our club. It is not a literary affair, for we are not noted for our brilliancy, but we do like to have good times, together!

We live in the country, and there are only five of us—not enough to make much of a club anyhow. Two of us owned chafing dishes. They were Christmas gifts, and they soon became the gnawing envy of the other three. Finally, one of the three got one for a birthday gift. Then we formed the Chafing-Dish Club, and our good times began. Later the other two girls achieved chafing dishes, and now, we each cook at every meeting.

At first, we met in the afternoons, first with one member then another, in alphabetical order. But soon the boys began to beg for invitations, and then we met in the evening, to accommodate them. Then they began inviting the Club to meet at their homes. Finally, two of the boys purchased chafing dishes, and now we've altered our by-laws to include them. We are wondering how long it will take the other boys to come in, for now we have a law that no one can join who does not own a chafing dish. Each member brings supplies for what he or she means to cook. It doesn't cost much, and we do have the jolliest times imaginable. We have learned to cook a great many very nice dishes, and each member has a book in which she copies the recipes which a majority have pronounced worth keeping.

Here are a few, which I am taking at random:

Escalloped Oysters.

Take one cupful, each, of cracker crumbs, sweet milk, and oysters that have been drained; also one egg well beaten, one teaspoonful salt, a dash of cayenne pepper; stir all together, but be careful not to break the oysters, and let stand for a time to swell the crumbs. Heat a tablespoonful of butter in the chafing dish, then stir in the mixture and cook until the oysters are well curled, then add a little butter.

Oysters and Asparagus.

Melt a spoonful of butter in a chafing dish, and heat, with it, the juice from a pint of oysters. Add a can of asparagus tips, and when this is hot turn in the oysters and let them heat until the edges curl. Season with salt and pepper, and serve with Boston crackers, that have been split and toasted.

Devilled Turkey.

Put two generous tablespoonfuls of butter into a chafing dish over the open blaze (that is without the water pan.) When melted, add two finely chopped onions and one tablespoonful of dry mustard mixed with two tablespoonfuls of vinegar. Stir continually to prevent burning, and when a light brown, add two tablespoonfuls of Worcestershire sauce, one saltspoonful of salt, a generous dash of cayenne pepper and one cup of tomato catsup. Cook until the turkey is heated through. Chicken, duck, mutton, or roast beef may be prepared in the same way. If mutton or beef is used the addition of a dash of curry is an improvement.

Hodge Podge.

One cupful of boiled rice, one pork sausage, one-quarter of an onion, one-quarter cupful stewed tomatoes, one sprig of parsley, one-eighth cupful of stock. Melt one tablespoonful of butter; when melted put in onion and stir until it is brown; add tomatoes, then stock a teaspoonful of paprika and parsley; have sausage nicely fried and cut into small pieces; add sausage and boiled rice.

Macaroni.

Boil macaroni in salted water beforehand, for it must be thoroughly cooked to be good, and that takes time. Melt a little butter in your chafing dish, turn in a half can of tomatoes, or more, if liked, then add the macaroni and stir well. Now add some grated cheese, and serve as soon as the cheese is melted. This is perfectly delicious served with toast, and is not too expensive for any member of your club to provide.

Another nice, and not very expensive dish is

Welsh Rarebit.

Grate one pound of rich, rather stale, cheese; add a pinch of salt, white pepper, mustard and red pepper. Put four tablespoonfuls of cream into the chafing dish, add the seasoned cheese, and stir gently until it is of the right consistency. It should be perfectly smooth when done, and should not be left to cook one second after it is done. The secret lies in knowing when it is ready to remove from the fire, and that is learned only through experience. Have hot buttered toast all ready, pour the rarebit and eat it before it has time to cool.

Apple Rings.

Pare large round apples, and cut them in rather thick slices. Remove the core from each slice. Let them stand for a while in a preparation of lemon juice and sugar, until they absorb enough to flavor them; then take them out, dip them lightly in flour, and fry them in hot butter. Sprinkle with powdered sugar, and serve on thin slices of graham bread.

Clams With Celery.

Take two dozen medium-sized little neck clams from their own liquor, and mince fine; put the liquor on to boil with a small cupful of water added; put in the minced clams and boil hard for five minutes, then cut in small pieces a small stalk of crisp celery and boil for five minutes more, then a half pint of sweet milk and serve.

Escalloped Salmon.

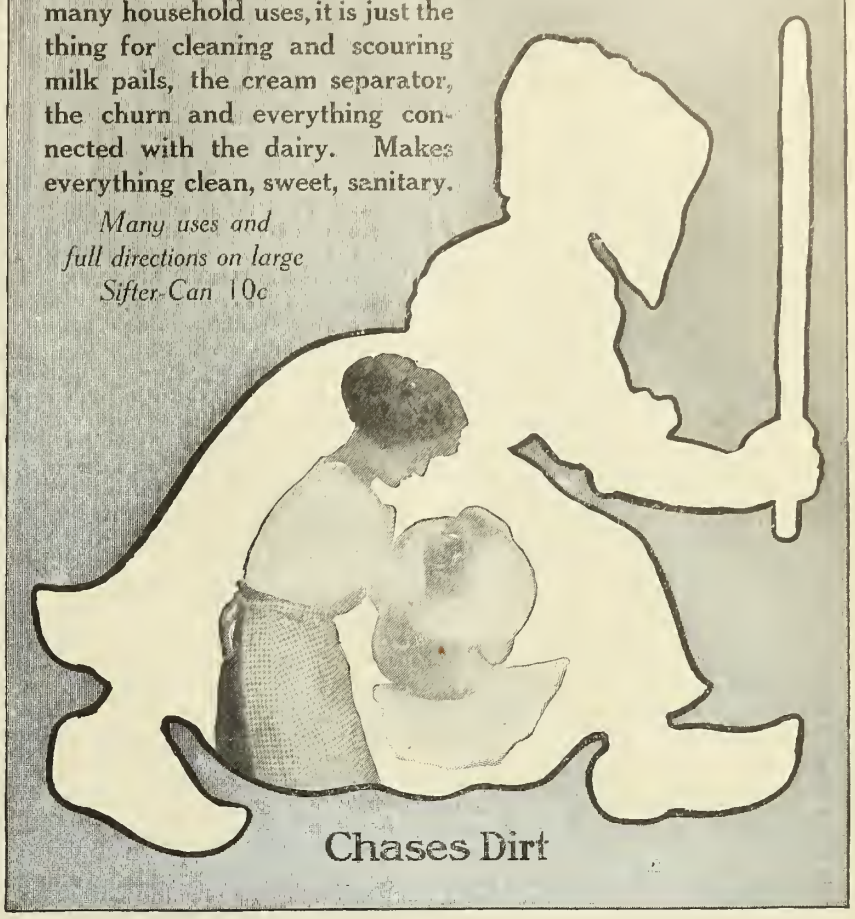
By the way, this is a fine dish to prepare for unexpected company. Empty the salmon from can and break apart the large pieces; put butter in bottom of chafing dish, then add a layer of salmon, a dash of Tabasco pepper and salt, then sprinkle powder cracker crumbs over each layer of salmon and so on alternately till chafing dish is filled; heat fifteen minutes and then turn out in a flat dish

On the Farm

Old Dutch Cleanser

is of greatest value. Besides its many household uses, it is just the thing for cleaning and scouring milk pails, the cream separator, the churn and everything connected with the dairy. Makes everything clean, sweet, sanitary.

Many uses and full directions on large Sifter-Can 10c



Chases Dirt

Townsend & Wyatt Dry Goods Company

Our Piano Department has been a success from the day we opened. We find that the public likes to save money when they make a purchase for as large an amount as this.

On account of the small expense in operating this department in connection with the rest of our store we can save you from fifty to one hundred and fifty dollars on a piano.

New Pianos are Fully Guaranteed from one-hundred and nineteen dollars up

"Style 'F' Hillsdale."

The above cut represents the popular Style "F" Hillsdale. This piano bears our own name on the metal plate. It is manufactured especially for us.

The reputation that we have established after being in business forty-four years, is behind these instruments. The sweet round, full-toned Hillsdale will satisfy you, no matter how critical you are. Its plain, square lines will please the eye.

It is useless to pay $375 for a piano no better, when you can have this piano **Direct from the Factory to You,** no matter where you live, freight prepaid, new scarf and stool furnished, for $225 cash, or payments, if desired, 6 per cent on deferred payments. **Write Us Today.**

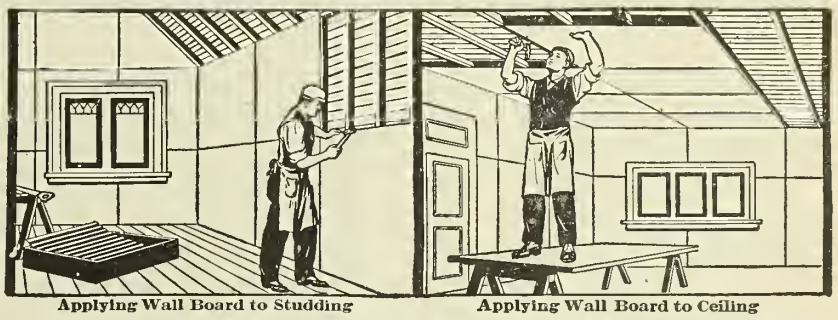
Townsend & Wyatt D. G. Co.
ST. JOSEPH, MISSOURI

There was a typographical error in our ad which appeared in November Fruit-Grower. Price of piano should have read $225.00, instead of $275.00.

The Wonderful Blue Rose

Sold all over for $1.50 each. We have a limited quantity of strong, hardy plants. While they last we will send them out prepaid for 25c each in stamps. Send at once and secure this bargain.

TAYLOR NURSERY COMPANY
Box 208. Rochester, New York



Applying Wall Board to Studding — Applying Wall Board to Ceiling

Save a Month's Time in Building!

Build right through coldest winter weather by using **Bishopric Wall Board** in place of plaster. Bishopric Wall Board is applied dry, in sheets 4x4 ft., just as it comes from the factory. 12,685,450 square feet sold in twelve months. Any man who can drive nails can put it on. Put it on any time. Saves a month's time and **costs less than plastering.** For walls and ceilings of homes (finest Mansions, as well as Cottages or Bungalows), Office Buildings, Stores, Factories, Schools, Churches, Halls, Garages or Attics, Cellars, Laundries, Porches and Partitions of every building, new or old. Ready for paint, paper or any decoration.

Bishopric Wall Board is made of asphalt mastic and imbedded lath. **Asphalt mastic does not burn.** Protects imbedded lath and makes wall or ceiling **fire-resisting.** Only wall board with imbedded lath. Lath are positively necessary to preserve a rigid, perfect plane. Bishopric Wall Board cannot swell or warp or crack. **Positively guaranteed proof against dampness, heat, cold, wind, sound or vermin.** Price $2.50 per 100 square feet, or $6.40 per crate of 16 sheets, 256 square feet, F. O. B. factories. Sold on money-back guaranty. Get our Free Book and Samples of Bishopric Wall Board, Sheathing and Roofing. Address

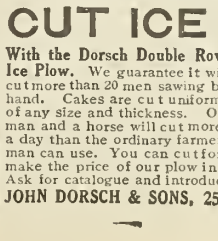
BISHOPRIC WALL BOARD

Write for Free Book and Large Free Sample

THE MASTIC WALL BOARD AND ROOFING MFG. CO., 278 Este Avenue, CINCINNATI, OHIO

GIVE YOUR PLACE A HOME-LIKE LOOK

Don't forget the *comfort* side of the home; a few shade trees, a hedge of California Privet, a clump of shrubbery or a bed of roses cost very little, but add wonderfully to your comfort and pleasure, and your family's. *They make your place worth more, in cash, too!* Our location, our knowledge of trees and plants and our long experience will help you get what you want. Our Catalogue tells all about fruit and shade trees—what to plant, and where, and how. It's free.



P. J. BERCKMANS CO., Inc.
Fruitland Nurseries
Box 1070 F, Augusta, Georgia

In writing advertisers please mention The Fruit-Grower.

CUT ICE

MADE IN THREE SIZES

With the Dorsch Double Row Ice Plow. We guarantee it will cut more than 20 men sawing by hand. Cakes are cut uniform, of any size and thickness. One man and a horse will cut more ice in a day than the ordinary farmer or dairyman can use. You can cut for others and make the price of our plow in two days' use. Ask for catalogue and introductory prices.

JOHN DORSCH & SONS, 258 Wells St., Milwaukee, Wis.

and garnish with parsley and slices of cold boiled eggs.

ONE OF THE GIRLS.

The Social Hour.

Do you know that if you boil eggs in salted water, the shells are less likely to burst while they cook?

I have just learned of a new way to keep celery fresh and crisp, and I hasten to pass it on.

Take an empty salt bag, wet it in cold water, put the celery in the bag, wrap the celery and bag in brown paper and put in dark place. It will keep fresh and crisp for a long time.

Another good thing to know is how to wash white sweaters without their shrinking.

Shave half of a small cake of white soap and let it stand in boiling water until it becomes a jelly. Then put it in a tub of warm water with two tablespoonfuls of borax. Put in sweater and move it around well, but do not rub or stretch it. Rinse in two waters of same temperature; take it out and lay it in proper shape on a bath towel laid on a flat surface, and let it dry for one or two days, occasionally turning it. When dry this sweater will look like new.

These suggestions are not of great importance but I know from experience that the seemingly unimportant sometimes assumes most annoying proportions. So, sisters, don't be afraid to offer your simple suggestions.—E. S. T.

To clean all kinds of white furs, lay the fur on paper and cover with white cornmeal. Rub the meal in gently back and forth with the hand. Shake out and repeat until clean. Then lightly brush out with a soft brush. This makes them like new.—Elsa C.

(Have you ever tried putting them in the meal sack you had just emptied, then hanging the sack on the clothes line and gently beating it with a carpet beater? That method of cleaning furs has just been recommended to me by a neighbor.—R. M.)

People who are the victims of sensitive teeth that crumble and acquire cavities readily may do much toward checking this dental decay by the use of a simple remedy. A bottle of milk of magnesia should be kept on the washstand, and each night after brushing the teeth just before retiring some of the magnesia should be held in the mouth for a minute, that it may reach each side of every tooth. By this process a coating is formed over the sensitive enamel, which is thus protected from the action of the acids that form in the mouth during sleep. The magnesia will remain on the teeth for three or four hours. Washing the mouth with a solution of bicarbonate of soda after eating sour fruits or salads is also recommended by dentists, as the soda, like the magnesia, counteracts the injurious effects of the acids upon the enamel.—Mary D.

Shirley Dare recommends the following preparation for removing wrinkles and softening and whitening the skin. Has any member of the band tried it, and found it good? I can't afford to invest if it is not good. It is as follows:

Six ounces of pure cocoanut oil, two ounces of white wax, two ounces of spermaceti. Melt separately and put on a large, warm platter and beat to a thick cream. Perfume with sandalwood or rose. Scoop the cream up on your fingers using a plenty of it, softly all over the face and neck and hands. The face must be rubbed away from the eyes and upward from the chin, the neck around, the hands toward the arm. After the cream is rubbed in thoroughly, but not dry, rub off with a soft cloth. It must be applied once a day for a week, then twice a week, then once or twice a month.—A Reader.

(I asked a skin specialist about this, and she told me it would prevent wrinkles from forming, and would sometimes remove those lately formed; but that it would make little difference with wrinkles of even a few months' standing.—R. M.)

A Popular Periodical.

The American Tract Society, publishers of strictly undenominational religious literature, issues an illustrated religious monthly, known as the American Messenger. This publication has been an important factor in accomplishing much good for the cause of Christ during the past sixty-nine years since it was founded. It has been the favorite religious paper of hundreds of thousands of American Christian families. It brings each month a message of inspiration, comfort and good cheer. It is interdenominational, devoted to the upbuilding of sturdy Christian character and the promotion of good citizenship.

The periodical press constitutes a very large portion of the reading matter that enters the great majority of homes at the present time. In selecting a religious paper for the family circle it is therefore desirable to secure the best that can be obtained, for the repeated visits of a periodical contribute one of the most potent molding influences at work in the home.

Among its many popular contributors are Dr. J. Wilbur Chapman, the great evangelist, Rev. Edgar Whitaker Work, D. D., Rev. Judson Swift, D. D., Margaret E. Sangster, John T. Faris, L. M. Montgomery, Rev. Warren G. Partridge, D. D., Sophie Bronson Titterington, Rev. George Ernest Merriam, Rev. Robert Stuart MacArthur, D. D., Hope Daring, Frank Walcott Hutt, Rev. Henry Lewis, Ph. D., Rev. George S. Payson, D. D., Chara B. Conant, Cora S. Day, Rev. Charles A. S. Dwight, Ph. D., Edgar L. Vincent, Annette L. Noble, The Author of Preston Papers, and many others.

The American Messenger aims at this time to extend its influence and usefulness by asking you to become one of its readers and friends. The subscription price is only 50 cents a year.

Rex Lime-Sulphur Wins.

At the apple show held in St. Joseph, in connection with the National Horticultural Congress, Rex lime-sulphur and Rex arsenate of lead won high distinction, being one of the prize-winners. This company is a pioneer in making lime-sulphur and has built up a great business in all parts of the country.

From the light crop of apples that was harvested this year, and the satisfactory manner in which apple trees held their foliage throughout the summer, apples are loaded with fruit buds in a manner rarely seen. Look out for a bumper crop in 1912, and make your arrangements now to make your crop next year the best one you have ever produced, the best one in your neighborhood., and the best one in your state. You can do it. The opportunity is all yours.

Every Tree Has Pedigree

We know what it will do.

See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."

WINFIELD NURSERIES

In writing advertisers please mention The Fruit-Grower.

Money-Making Fruit Farms

at bargain prices to settle estates quickly throughout Michigan, New York, Delaware, North Carolina and Florida. "Tell us what you want and we will tell you where it is." We pay buyer's car fare. E. A. Strout Farm Agency, Largest in the World, 47 West 34th St., New York.

Trees By the Millions. A complete line at wholesale prices. Large supply of peach trees and Privet Hedging.

THE WESTMINSTER NURSERY, Westminster, Md.

Soot in Stove pipes and chimneys makes a house a Fire Trap. For Safety, try 20c package from Soot Destroyer Co., Shenandoah, Iowa.

CHANCES TO MAKE MONEY.

I have just returned from a six weeks' trip through Northwestern States and Canada, spent investigating fruit industries and resulting profits. The apples, etc., are magnificent, but the prices of land ridiculous; $200 to $300 per acre for **unimproved** land, under ditch. Why can you get land in Mexico better than any I saw on my trip **absolutely free.** All you have to do is to have five acres of bananas planted within five years. For particulars regarding Mexican Free Land (printed in English) address The Jantha Plantation Co., Block 325, Pittsburgh, Pa. You can have the bananas planted without going to Mexico, and cared for on shares, and your share should be about $200 per acre. Bananas begin bearing in from 12 to 15 months. Why pay $200 an acre, when you can get better land free?—Adv.

Your Next Month's Washing FREE

Because almost all of the EASY Vacuum Washers we have sent out on trial have "stayed" and pleased the users we are willing to send you one on

Thirty Days' Free Trial

If after you have given it a thorough test, you do not want it, you may send it back and we will pay the railway charges. It costs you nothing to try it.

The EASY principle is to agitate the water by air pressure and suction, forcing rich suds through the clothes. The EASY washes overalls and blankets as well as finelaces without grinding or damage.

EASY

Read this letter: Washington, D. C.

We have tried many washing machines but the EASY beats them all. We would not be without it.

WILL A. MORRIS, 633 Twelfth Street, N. E.

We will prove these things to you at our own risk. Write today to

DODGE & ZUILL F-G3 Syracuse, N. Y.

You will confer a great favor upon us as well as the advertiser if you mention The Fruit-Grower when writing.

Now Is the Time to Start Your Pruning

And You Need

THE PRUNING BOOK

The Fruit-Grower can furnish you with the latest edition of this great book, by Dr. L. H. Bailey. It is a masterpiece, and is just the thing you need in your pruning work. You cannot afford to neglect pruning your trees—a little work now will enable you to do better spraying, will produce fruit larger and of better color, and the expense of harvesting will be much less. There is every reason why you should prune your fruit trees before spring growth begins.

But, mind you: You must know why you prune, and the work should be done right. If you do not know, then you need this great book. This book is really worth $50 to a man who wants to properly care for his trees. The table of contents will give you an idea of its value. The book is divided into two general divisions—the Fundamentals, and The Incidentals. Under the former head are these chapters:

THE PHILOSOPHY OF PRUNING
- Does pruning devitalize plants?

THE FRUIT-BUD
- The bud and the branch.
- The leaf-bud and the fruit-bud.
- The fruit-spur as illustrated by the apple.
- The fruit-spur as illustrated by the pear.
- The fruit-spur as illustrated by the plum and cherry.
- The peach and the apricot.
- Gooseberries, currants and juneberries.
- Co-terminal fruit-bearing.
- Grapes and brambles.
- How to tell the fruit-buds.
- Summary synopsis of the positions of fruit-buds.

THE HEALING OF WOUNDS
- The nature of the wound.
- Suggestions to the pruner.
- When to cut the branches.
- Dressings for wounds.
- How to make the cut.
- The mending of trees.

THE PRINCIPLES OF PRUNING
- Heavy top-pruning produces wood.
- Heavy root-pruning lessens wood.
- Heavy top-pruning rejuvenates the plant.
- Pruned plant resumes its normal habit.
- Habit varies from youth to age.
- One part lives at expense of another.
- Watersprouts are results of disturbed equilibrium.
- Plants grow from uppermost buds.
- Heading-in develops lateral buds.
- Effect of obstructions.
- Checking growth induces fruitfulness.
- Fruit-bearing is determined by habit.
- Girdling and the like are special practices.
- Pruning thins the fruit.
- Heading-in induces fruitfulness.
- Season of pruning influences fruitfulness.
- Pruning depends upon locality and climate.
- What influences the healing of wounds?
- Dressings.
- General law.

Under the second general division, "The Incidentals," are discussed specific problems of pruning fruits of various kinds.

This book contains 545 pages, is fully illustrated, and on the whole is a book that is practically indispensable, if one would know how to prune fruit trees for best results.

Price $1.50 Postpaid

The Fruit-Grower is anxious that its readers succeed in growing the best possible crops of fruit, and therefore unhesitatingly recommends this book to them. It is a most valuable book, worth many times the price—$1.50, postpaid. Send your order today to

THE FRUIT-GROWER.

Book Department ST. JOSEPH, MO.

You will confer a great favor upon us as well as the advertiser if you mention The Fruit-Grower when writing.

FRUIT GROWING *in* ARID REGIONS By Paddock and Whipple

Here is a book which has long been needed, for it tells all about fruit growing in the irrigated districts, having particular reference to the intermountain districts of Colorado, Utah, Idaho, New Mexico, etc. The authors have both had wide experience in the sections referred to, and their book is unquestionably the best thing that has yet appeared on irrigated fruit culture. It tells how to select orchard soils, how to prepare for planting, how to plant, kind of trees to plant, how to irrigate, how to prune, what varieties to be planted, and how to pack and market them. This book, in brief, covers the whole subject of growing fruits under irrigation, and is worth much to the man who now has an irrigated orchard or who contemplates getting one. The book is also of value to Eastern fruit growers, in that it tells all about the Western style of pruning trees and their methods of grading and packing. An orchardist in any part of the country can well read this splendid book and profit by its suggestions.

The book contains 395 pages, is fully illustrated, well bound, and will be found to be very serviceable.

Price $1.50 Postpaid

Send The Fruit-Grower your order at once, and get a copy when its teachings will be most helpful to you. Get the book today—if you don't say it is worth the money, send it back and your money will be refunded.

THE FRUIT-GROWER (BOOK DEPT.) ST. JOSEPH, MO.

PRIZE SPRAYING PICTURE

In the issue of The Fruit-Grower for May, 1911, appeared an offer of a prize of $5 for the best picture of an orchard spraying scene made by a reader of The Fruit-Grower. During the summer and fall quite a large number of these pictures were sent to us in this competition, and when the pictures were graded the prize was awarded to Mr. J. J. Boaz of Virginia, and is shown herewith.

It may interest readers who have cameras to know why this picture got the prize, as there were several other good pictures submitted which could not be considered. In this picture the detail was perfectly clear. It was made in a well cared for orchard and shows three spraying machines actually at work spraying the trees, together with the supply station at which the material is prepared. It will be noted in this picture, that although eight men can be seen, not one of them is looking at the camera. This is an important feature, for where the operators all stop to look at the camera, and pose for their picture it entirely spoils the effect. The men are not working when they pose for their picture, and in making a picture of men at work, if it is necessary to have them stop for an instant, the pose which they take should be in a position they occupy while at work rather than that of having their face photographed.

In sending this picture, Mr. Boaz accompanied it by a little statement regarding his orchard, which follows:

Seven Applications in Virginia.

In our orchard of twenty-year-old trees, we have four spray stations at each of which is a home-made tank that holds 8,000 gallons of water The tanks are filled by gravity from a mountain spring, and the spray tanks holding 200 gallons are filled in five minutes from a one-half inch rubber hose. I have four of these tanks in my orchard. It cost me $10 to build each of them, and the two-inch chestnut planks and locust posts cost me $15, making the four tanks cost $100.

I have 14,000 trees, consisting mostly of Albemarle Pippins, the rest Winesap and York Imperial. In 1909 I sold 6,500 barrels of No. 1 and No. 2 apples. In 1910 I sold 7,200 barrels of Nos. 1 and 2, and I am counting on 12,000 barrels this year.

I fertilize my orchard every year with potash, bone and basic slag, or 16 per cent acid phosphate.

I spray my orchard every year in the dormant state, with home-made lime-sulphur solution, as follows: 20 pounds sulphur, 20 pounds lime, boiled one hour to the 50 gallons of water. I spray twice with this preparation. I then commence with 3 pounds copper sulphate and 4 pounds lime to 50 gallons water.

I cultivate my orchard every two years in peas and crimson clover. I cultivate the pea hay and winter fifty head of cattle, putting the manure back on the orchard. I do not raise any crops except peas or crimson clover in my orchard. I spray my red apples four times, counting the winter spray, using for the last spray 3 pounds copper sulphate, 4 pounds lime and 50 gallons of water. I spray my Pippins six or seven times, using for the last three sprays copper sulphate instead of lime-sulphur solution.

Virginia. J. J. BOAZ.

The Soil for Orchards.

Much of the success with an orchard will depend upon the adaption of the soil. Thus, pears do well upon soils containing a considerable admixture of clay. While apples do well upon soils showing a considerable variation, the best results are obtained when each variety of apple is given a soil especially selected for it, as while Baldwin, Hubbardston and Grimes do best on a medium light soil, Rhode Island Greening and Northern Spy will not be at their best unless they are given a considerably heavier soil.

Cherries thrive well on a sandy loam soil, and will also give good results if it contains some clay, provided it is well drained. Peaches and grapes do well on the same range of soils as is advised for cherries, but will give good returns upon comparatively light soils. Especial pains should be taken to grow these fruits upon elevated sites.

While each class of fruit has its own requirements, there are two conditions of the soil which should always be present for the best results. One of these is a sufficient amount of humus to serve as a sponge and furnish moisture to carry the trees through a period of drouth, and a supply of plant food in character and quantity adapted to the needs of the trees. If any or all of the elements are lacking in quantity, it will retard the growth of the trees and their production of fruit. It is especially important that the supply of nitrogen in the soil be well balanced, as this has much to do with the growth of the trees. If deficient, the growth will be checked, but it is an over-supply that is most to be feared; if present in too large quantities, a rank sappy growth will result, which is likely to be injured by the winter. Moreover, such a rank growth of branch and leaf is opposed to the production of fruit spurs.

Except for the danger from frosts, it is advisable to plant the bush fruits upon the lower levels in order to secure a supply of moisture, as they ripen in midsummer when the weather is hot and dry. In locations near large bodies of water there is little danger of inquiry by spring frosts.

It is sometimes impossible to find a soil on small places, that is satisfactory for an orchard, the land being too heavy or too light. If properly drained, it will often be possible at a small expense to so modify the soil as to adapt it to all classes of fruit by placing about each tree a quantity of clay, if the soil is sandy, or of sand, if the soil is too heavy. This, of course, is not feasible in commercial orchards, except perhaps on small areas, as when there is a sandy knoll in an orchard.

Michigan S. T. MAYNARD.

Michigan Fruit Growers Meet.

The leading event of the past month was the 41st annual meeting of the Michigan State Horticultural society, held at Ludington, Dec. 5-7, and while the attendance was not a record-breaker the degree of enthusiasm and interest shown throughout the three days has never been reached before in Michigan. The fruit exhibit was especially fine, particularly that of Mason county, and included over 150 boxes of apples, besides many baskets and plates. C. J. Monroe of South Haven won the silver loving cup for the best three bushels of apples in the state exhibit and W. L. Harter of Custer township, Mason county, won the $25 prize for the best barrel of apples grown on sprayed trees. Apples were displayed in store windows along the streets and the entire city seemed to have caught the fruit fever.

THE PRIZE-WINNING PICTURE IN THE SPRAYING SCENE CONTEST

This year the Michigan society depended entirely on home talent for its speakers, and yet a more helpful, stimulating program of talks and discussions was never carried out by the organization. Officers were re-elected as follows: president, T. A. Farrand, Eaton Rapids; vice president, O. S. Bristol, Almont; secretary, Chas. E. Bassett, Fennville; treasurer, James A. Satterlee, Lansing. Chas. F. Hale of Grand Rapids and Prof. H. J. Eustace of Lansing were elected trustees for three years. A resolution was adopted endorsing the Smythe bill, passed by the legislature last year but killed by the governor, which provides for the uniform marking of packages, and honest packing of fruit. The society also endorsed the McKinley bill, now before congress. Next year's meeting will probably be held in Grand Rapids.

The annual meeting of the Eaton County Horticultural Society was held in Charlotte and officers for the ensuing year were elected as follows: president, C. M. Hunt, Eaton Rapids; vice president, L. W. Wilton, Charlotte; secretary, Frank Ford, Eaton Rapids; treasurer, Fred A. Warner, Vermontville; directors, L. W. Dickinson, Eaton township, and H. H. Church, Vermontville.

Members of the Berrien County Grape association held their annual meeting in Derby. The secretary's report showed the association to be on a good basis financially, with $961.35 cash on hand, and a dividend of $2.03 per $100 was paid to stockholders, based on the net proceeds of $1,000.85. Officers for 1912 were elected as follows: president, B. E. Murphy; vice president, P. E. Nye; secretary, H. C. Radtke; treasurer, J. M. Ball.

The Grand River Valley Horticultural society held its annual meeting in the board of trade building, Grand Rapids, Dec. 12, and an interesting paper historically was read by Arthur S. White, tracing the progress of the society since its organization in 1874. Reminiscent talks were given by Chas. W. Garfield, J. A. Pearce and others and several reports were made by members in attendance at the Ludington state meeting. Officers for the coming year are as follows: president, J. Pomeroy Munson; vice president, Chas. F. Hale; secretary-treasurer, Geo. W. Welch; executive board, Chas. W. Wilde, John B. Martin, Mrs. M. E. Campbell, Eugene Davis, Arthur S. White and A. Bos.

The Cheboygan Fruit Growers' association met at Cheboygan and elected officers as follows: president, D. A. Trumpour; vice president, John H. Clune; secretary, A. H. Weber; treasurer, A. W. Ramsey.

The Berrien County Horticultural society met at Benton Harbor and chose officers for the coming year as follows; president, George Friday, Colma; vice president, Harry Hilton, Benton Harbor; secretary, C. A. Pratt, Benton Harbor; director for 3 years, F. J. Ewald, Benton Harbor. Regular meetings will be held during the winter and one important matter to be taken up will be ways and means of improving Benton Harbor and home markets.

Manistee fruitgrowers are planning to organize an association as an auxiliary to the state society. James E. Merritt of Manistee is a leader in the movement.

Profits as a rule were small with the grape growers this season. In the Lawton district growers who sold to the juice factories, thus saving the cost of baskets and the commission for selling, came out best. Baskets cost $21 per thousand, which with another cent added for packing, the expense of hauling, selling, etc., left little margin when the average selling price was about 7½ cents.

Two of the leading school teachers of Grand Rapids, Gertrude M. Banchard and Cora M. Riggs, have bought a 70-acre fruit farm on the shores of Grand Traverse bay and will put on their sun bonnets and raise fruit. The fruit growing contagion is no respecter of person and is spreading everywhere.

ALMOND GRIFFEN.

Renew your subscription today.

GLENWOOD COUNTY NURSERY
We have for Spring Delivery: Apple, Crab Apple, Pear, Cherry, Plum, Peach, Apricot and Quince Trees. Grape Vines, Berry Plants, Rhubarb, Asparagus; Roses, Flowering Shrubs; Catalpa Speciosa, Black Locust.
J. W. HINSHAW, Prop. EUREKA, KANSAS

YOU GET BIG MONEY
If you have pedigreed fruit
See Ad., pages 42-43. Send for Free Catalog, "Pedigreed Horticulture."
WINFIELD NURSERIES

Secure and Profitable
These essentials of a good investment are combined in our
7% First Mortgage Gold Bonds
Paying Interest of 7%
payable every six months in coupons attached, which can be collected through your local bank. Issued in denomination of $100, and fully protected by the entire assets of the company. These bonds are dated July 1, 1907, and run ten years.
Write for full details and booklet.
THE FRUIT-GROWER
St. Joseph, Missouri
Capital Stock, $100,000.00, Fully Paid

Profits in Poultry.

This subject concerns the poultryman and the farmer more than any other. A few years ago it was only the fancier who was willing to pay $5.00 for a good trio of thorough-bred birds. The fancier demonstrated the advantage of raising pure bred stock to the poultry-man and the farmer. Today all poultry-men and nearly all intelligent farmers have discarded the mongrels to make room for the more profitable pure blood, not hesitating to pay $5.00 to $25.00 per trio for the better breeds, which have increased their profit several times the amount of the price paid for the trio.

After discarding my mongrels the question arises, what breed do I want? Some will tell you to get a heavy fowl, while others will advise you to get one of the Mediterranean class. For illustration we will take two of the older breeds, Rocks and Leghorns. Supposing you raise a flock of 50—25 cockerels and 25 pullets; a laying hen should not be kept for laying purposes over three years, at the end of three years the hens are sold. The Rocks will bring about $15.00 more than the Leghorns, conceding that they will weigh 100 pounds more and providing you can get 15c a pound. The Leghorns will lay about 50 more eggs per year than the Rocks. In three years the 25 Leghorns will produce 310 dozen more eggs, at 18c per dozen the value of their egg production would be $55.88 more. The Rocks will consume 60.4 cents each more feed per year or $45.00 for 25 hens for three years. This would give the Leghorns earning capacity $85.88 over the Rocks. Deducting $15.00 for what the 25 Rock cockerels will sell for over their rivals, this will leave $70.88, or what the Leghorns will earn more than the Rocks. I am quoting these figures to show you that the profit is in the eggs. Where one man makes money by raising stock for the market, there are 20 who make money in eggs. These figures show beyond a doubt which breed to select. No one can deny the laying ability of the Leghorn, they have always been noted for being great layers.

The world is progressive. This is especially true in the chicken business. While Leghorns were regarded a few years ago as the foremost egg producers, they have met their superiors in Anconas. A few years ago this breed was comparatively unheard of in this country, although they have been bred largely in England for the past 60 years. They were introduced in this country about 10 years ago. "By their works ye shall know them." By this way they have worked their way to the front, until their praises are voiced by thousands throughout the land.

No breeder or writer ever denied the remarkable laying ability of this handsome breed. I noticed an article some time ago which was unfriendly to Anconas, stating they were wonderful layers, but their eggs were not of a good flavor. I couldn't think the gentleman would be guilty of a willful misrepresentation, but concluded he must have got hold of a stale egg. I desire to say that Anconas lay a nice large white egg, having a delicious flavor.

Many breeders are keeping pace with the times, by discarding their breed for the grandest of breeds—Anconas. The replacing of their stock with Anconas is the handsome tribute paid by many progressive breeders to these most profitable layers. Anconas not only excel in having the largest number of eggs, but also lay a very large white egg. They are noted for their heavy production during the winter months when price of eggs is high. A poultryman separated his Anconas from his other breeds, to compare their laying ability. He told me his Anconas laid nearly twice as many eggs and consumed less feed.

H. CECIL SHEPPARD.

New York.

Yarding Poultry on the Farm.

To obtain the best results from chickens it is necessary to yard them, even on the farm, anyway where more than fifty are kept. Experience has repeatedly proven this. Take any flock running at large where there are 100 or more and the average egg yield per hen will never be over five dozen or six dozen a year, while all flocks that are yarded and given any care will produce double the above amount of eggs per hen yearly.

This difference in the egg yield in favor of yarded hens is accounted for in two ways, namely: In yarding them we do not put over 50 in one enclosure, as a rule and often a less number. They thus become much better acquainted with each other, which is a fact of much more importance in poultry culture than appears at first thought. Acquaintance and familiarity with one another among hens contribute to their happiness and contentment and happiness is an essential with a hen to large egg production.

Another advantage in yarding is in the quality and amount of feed they get. A hen running at large, especially on the farm, often gets corn almost exclusively as her grain diet and corn alone is not an egg-producing food. Again, at other times she may have access to the oats bin or wheat bin and get a whole diet for a time of one of these grains. While oats or wheat either one is much better as an egg-producer than corn, yet, a balanced ration, which can be regularly fed in the yard but which is rarely ever fed to fowls running at large, is far superior to the sort of grain a hen ordinarily gets on the farm. All during spring, summer and early fall hens at large get too many insects and worms

130 EGG Mankato Incubator $7.25

This high-grade hatcher, direct from factory to user, no middle profits, under binding guarantee and long-term trial. Has three thicknesses of walls, covered with asbestos and heavy galvanized iron, metal egg, copper hot-water tank, self-regulator, high nursery safety lamp, thermometer. Safest made. So simple a child can operate. None better at any price. 17 years' experience. Big catalog free. Brooders, $2.50 up.

260 EGG ONLY $10.

Mankato Incubator Company, Box 907, Mankato, Minn.

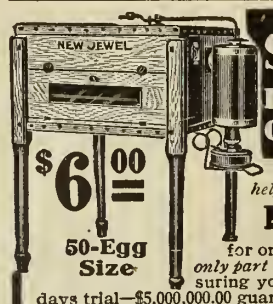
140 EGG INCUBATOR and 140 CHICK BROODER

Both For $10

The incubator is California Redwood, covered with asbestos and galvanized iron; has triple walls, copper tank; nursery; egg tester, thermometer, ready to use. 30 Days' Trial—money back if not O. K. Write for Free Catalog today.

Freight Paid East of the Rockies

Ironclad Incubator Co., Dept. 12 Racine, Wis.



$6.00

50-Egg Size

Sell Me Ten Minutes

I'll Pay In Dollars from my Low Price On Improved New Jewel Incubator

An offer eclipsing anything ever before thought of. *I actually help you buy your outfit.* Get my famous, record hatching latest

Improved New Jewel Incubator

for only ten minutes of your time at home any evening, and paying *only part* of the regular price. Besides I give a $25.00 Poultry Course insuring you biggest profits; big book on Incubators and Brooders—sixty days trial—$5,000,000.00 guarantee back of every machine.

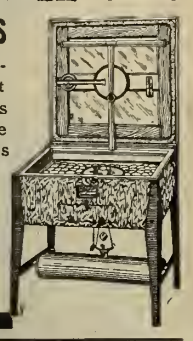
Now you can start raising chickens feeling sure of success. Drop me a postal and I'll show you how to convert ten minutes into hard, cold dollars. You'll be surprised—delighted and agree with thousands that this is a *real* bargain, one that goes beyond anything you ever thought could be done. Write me personally.

M. W. Savage, Pres., M. W. Savage Factories, Inc., Dept. 134, Minneapolis Minn.

RAYO INCUBATOR

MANY SUPERIOR POINTS

The Rayo is truly the Incubator without a fault. It is built upon principles that are scientifically correct, and which result—always—in successful hatches. One filling of tank and only one gallon of oil for entire hatch—eggs always in sight—turn eggs without removing nest-shaped tray—center heat—these are a few of the points which spell Rayo supremacy. We pay the freight and give a 70-day trial. Ironclad guarantee. Write for the book today.



Write today for our Big Poultry Book "EGGS TO MONEY" Free for the Asking

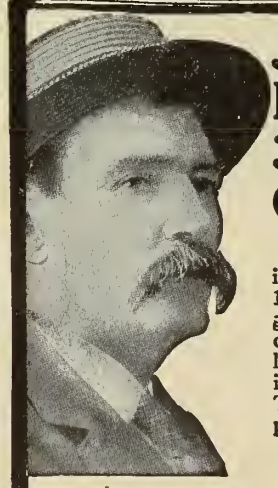
RAYO INCUBATOR CO.

FIG STREET Blair, Neb.

MAKE HENS LAY

Lots of eggs by feeding green bone fresh cut, because it is rich in protein and all other egg elements. You get twice the eggs—more fertile; vigorous chicks; earlier broilers; heavier fowls; bigger profits. MANN'S LATEST MODEL BONE CUTTER cuts all kinds of bone, with adhering meat and gristle, easy, fast and fine. Automatic feed; open hopper, never clogs. Book free. 10 Days' Free Trial. No money in advance.

F. W. Mann Co., Box 108 Milford, Mass.



Johnson Wrote His Big 1912 Book After His Experience in Making and Selling Over 325,000 Old Trusty Incubators—He Has a Copy for You—Send Name and Address on a Postal

Think what 325,000 customers mean. Standing shoulder to shoulder—a line of people over 150 miles long. The combined experience of this great army of people is given in this Book as it centered in Johnson, who has had millions of letters from Poultry Raisers all over the civilized world giving their experience with the Old Trusty. In this Book are shown over 300 actual photographs out of many thousands sent Johnson showing pictures of Poultry Houses—Yards—successful hatches, etc., etc. And in it Johnson gives his own experience from the time he built his first Incubator to the time when he'd made and sold over 325,000 machines. The Book is worth a dollar as a Poultry Guide—if you don't think so when you've read it tell Johnson and he'll send postage for its return and postage to cover correspondence with him.

300 Photographs

Johnson Says Write To Me

Over 325,000 in Use

Get This Big Free Book

The Best Recommendation of the Old Trusty is the 325,000 in Use Every Day

You can't get away from that tremendous testimonial of the superiority of Old Trusty. Abraham Lincoln said that you couldn't fool all of the people all the time. Johnson might have fooled a thousand people on a poor Incubator or five thousand on a fairly good one, but he couldn't possibly have fooled 325,000. Don't you think that the actual experience and the satisfaction of 325,000 satisfied customers is sufficient proof that Johnson is making the machine you ought to have if you want to raise poultry for profit?

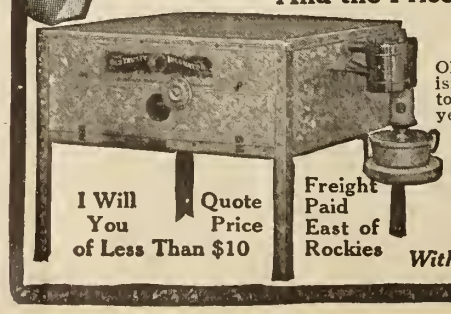
No Other Machine Made Compares With the Old Trusty

Its Exclusive Features are All Covered by Patents

The Old Trusty is a triple-cased machine. First there's the inner case of high-grade ⅞-in. powder-dry clear California redwood—(not a knot in a mile) then a case of highest-grade asbestos, fire-proof insulation—and then the outer case, covering legs and all, of galvanized metal in handsome mottled finish. Johnson's machine is equipped with guaranteed-not-to-leak cold-rolled copper tank and heater—regulator that regulates to one quarter of a degree—the whole machine is substantial—fire-proof—Indestructible—can't warp—swell or spring at the seams, crack or decay—guaranteed for ten years—twenty if you say so.

Shipped complete, set up ready-to-run—no trouble—no worry—results *sure.*

Safety Lamp and Regulator fitted on the side, leaving top clear for use as a table in egg-testing



I Will You Quote Price of Less Than $10

Freight Paid East of Rockies

And the Price of the Old Trusty is 7% above Cost—or Less than $10.00

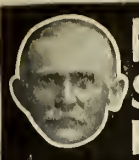
Freight Paid East of the Rockies—Or, That Far If You Live Beyond

Don't you want to join the Old Trusty Family of 325,000 satisfied customers? Johnson's going to make 100,000 Old Trusties this year—prompt shipment guaranteed every time—no waiting—no delay. And remember you take no risk as Johnson ships every machine at his own risk of satisfying the customer.

It's because of Johnson's Free Trial Liberal Selling Plan and the superiority of his patented machine that it is possible for him to put the Old Trusty in a class by itself. There's no competition for the Old Trusty—never was—and never will be. It's an expensive machine to make—but on account of making so many of them Johnson makes the price low. Why pay two prices—why get an inferior machine? Why not write to Johnson—get his Book—and let him tell you how much less than $10.00 he'll sell you an Old Trusty for—all freight prepaid. Write today.

M. M. JOHNSON, The Incubator Man

With a Score of 325,000 Satisfied Customers Clay Center, Nebraska



My X-RAY Saves You From 75¢ To $1.25 Every Hatch

MY X-Ray Incubator is built entirely different from all the Old Style machines. I place my lamp *underneath*, square in the center—where it should be—and *not* on the side. Thus I get an absolutely even temperature throughout the egg-chamber *all the time*—and there is *no cold side*. I use a *big* oil tank on my X-Ray—holding 4 to 8 quarts of oil—fill this up *just once* and you don't have to touch it again until *after the hatch*. You don't have to fill it every day as with the *old*-style machines. One gallon of oil is all that is needed for a hatch—just *one* gallon! Why? Because every bit of heat in my

X-RAY Incubator

"Built Different From All Other Machines"

is used to *best* advantage because my *automatic* trip—an exclusive patented X-Ray feature—cuts down flame *at the burner* when egg-chamber gets too hot. Others burn high *all the time* and let excess heat escape. My machine *controls* it!—saving both *oil* and *money*. You never have to touch the regulator of my X-Ray—it's *automatic*; it's the most perfect heat regulating device ever invented. My heater being so centrally located (underneath) conveys *equally* a *direct* heat from the lamp into every part of the egg-chamber. Door of my X-Ray is on *top*—where there are *two* double-glass panels through which you can see the thermometer *any time*—without raising lid and chilling eggs. To ventilate or turn eggs, simply raise lid. Eggs are never taken out of X-Ray. No other incubator

Uses Only One Gallon Oil to Hatch Requires Only One Filling of Lamp

To use my X-Ray means *less* egg-handling, *less oil*, less heat generated, absolutely no waste, no filling of lamp during hatch, no fumes, no danger of "cooking" eggs—but an even heat *always* over the WHOLE egg-chamber. My X-Ray weighs ½ to ⅓ *less* than the *old*-style machines of same egg capacity. I, personally, *guarantee* it to please you—to give you the biggest and best hatches you ever had. Anyone can be successful with my X-Ray—it is so *simple*. It is neatest, cleanest, most beautiful incubator made. Women everywhere, prefer it—often placing it in their houses, *it is so attractive.*

You should use the X-Ray—and get the *most profitable* hatches. I will send you my new 1912 Book No. 70 *absolutely free.* Write today. It is interesting. *I pay the Freight!* Remember, I *guarantee* to please *YOU also!*

Sincerely yours,
J. H. KATE, Pres.

X-Ray Incubator Company
Wayne, Neb.

Brooders Too!

Proof

LET me send you proof by return mail that $7.55 is all you need pay for the greatest producing incubator the world has ever known. My **140-Egg**

Belle City World's Champion Incubator

has won its title over all comers—no matter what the price—many of them selling for 4 times more. Why pay more? Get in the champion class. $7.55 buys my 140-Egg Incubator. Double walls and door and dead air space all over, copper tank, hot-water heat, self-regulator, "Tycos" thermometer, egg tester, safety lamp, nursery, high legs. $4.85 for 140-chick hot water top heat, double-wall brooder—ordered together, **$11.50** buys them both. Handiest machines to run; surest of results. **1, 2 or 3 Months Home Test** allowed. Send for Portfolio "Hatching Facts," telling all, or if in hurry, order from this ad. I take all risk. Same trial and guarantee freight paid—money refunded if not satisfactory. Thousands order this way—so can you.

$7.55 Freight Prepaid East of Rockies

$4.85

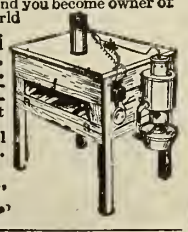
140 Chick Brooder

We ship Quick from St. Paul, Buffalo, Kansas City or Racine.

JIM ROHAN, President
Belle City Incubator Company,
Box 104 Racine, Wisconsin

Just Send Me One Dollar

And I will ship to any open R. R. Station in U. S., east of Rockies, this Right Incubator. Anyone can say they have best incubator in the world, but I will furnish the evidence to you. After you examine my Incubator—if you are satisfied, pay $7.85 and freight and you become owner of this Best Incubator in the World—as it has Hot Water System, Copper Tank, Double Walled Packed with Mineral Wool, Triple Top—Douhle Bottom, Double Glass Door, Self-Regulating and my Original Electric Alarm Bell. The greatest feature in any Incubator.



Write for catalog of my full line of Incubators and Brooders.

H. M. WEBER, Pres't.
RIGHT INCUBATOR CO.,
Box B 29 Quincy, Ill.

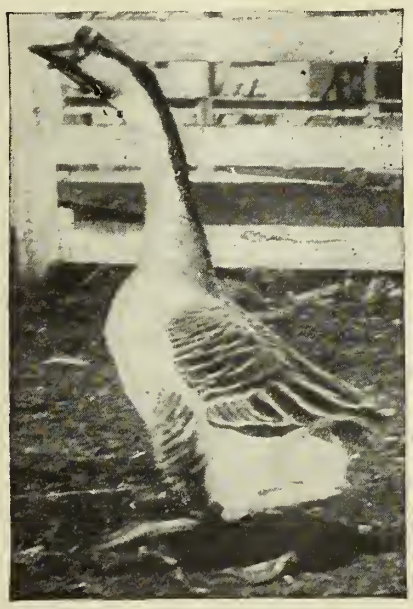
Latest Book "Profitable Poultry," finest published, 120 pages of practical facts, 160 beautiful half tones. Tells how to breed, hatch, feed and market to make big money. Tells about big poultry farm. 45 pure-bred varieties. Beautiful, hardy and money makers. We start you right. Lowest prices on fowls, eggs, incubators, etc., sent for 5c. **Borry's Poultry Farm, Box 106, Clarinda, Iowa.**

to produce a large egg yield. Experience and scientific investigation have proven that insects and worms alone will not produce many eggs. They are splendid as a help but to get lots of eggs at any season of the year there is nothing equal to a well-balanced grain ration together with a mash made of corn and oats and wheat bran and shorts in about equal proportions. When we yard our fowls we will give attention to the feed matter but when they run at large we usually let them shift for themselves with the above mentioned results as to egg yield—about fifty per cent less when running at large than when yarded. So we say it pays to yard fowls, laying hens, anyway, on the farm.

HORTON B. GREEN.

The Brown China Geese.

It is a mystery to me that there are not more geese raised on the farms along with other breeds of poultry. The goose is about the easiest fowl to raise because it requires but little care after it is four weeks old. Other breeds of poultry require constant care and then there is more or less loss of birds before they reach a marketable size. There is room on most every farm for a flock of geese. They do not require the outlay for buildings needed to house other kinds of poultry because they are much hardier and will stand the cold if only given a



TYPICAL BROWN CHINA GOOSE

lean-to shelter. Vermin that are common to chickens are not troublesome to a flock of geese as they are water birds.

We have raised geese on our farm and have had success with them without allowing them access to a stream. They seem content with a tub of water and although there is a stream near our farm the geese never have wandered to it. If they have a good supply of fresh drinking water they will be contented. The goslings are easy to handle and the death rate is not great. The only drawback to the business seems to be in regard to incubation. The eggs are so large that there will be some difficulty in hatching them in an incubator. This is true with the eggs from the larger breeds but the eggs from the smaller breeds will hatch as well in an incubator as by use of a setting hen if they are well supplied with air and moisture. I prefer to use hens for incubating the eggs and like the smaller eggs of the Brown China geese for this reason. The hen can cover from seven to ten eggs, while with the larger eggs five is all a hen can cover.

Years ago farmers were content if they raised ten goslings from a goose, but today as high as forty goslings are raised from a goose. The Brown China goose will lay as high as sixty eggs in a season and with but few infertile eggs. The Brown China are a noisy breed, but are certainly the "leghorns" of the goose family. They seem to be the most prolific and mate up as readily as chickens. I have had considerable trouble with the other breeds and have discarded them for this reason. The ganders are good fighters but as harmless as chickens; they will care for the young better than the other breeds and are not continuously stepping on the goslings. The goslings will grow rapidly and should be given pasture. We do not practice "stuffing" to promote growth but simply give them free range and water and they care for themselves.

After the goose has laid ten eggs she will want to set and if "broken up" in the same manner as chickens, she will start in laying another clutch of eggs. Each clutch is more in number and after the third lot are laid, the goose is allowed to set.

I let them set if the weather is not too warm and find them close setters. They should be removed from the nest or they are liable to starve and go light. If the eggs are set under hens they should be moistened after the fifteenth day so that the gosling will be able to break the shell. When the eggs are due to hatch the hen should be watched or she will eat the goslings as soon as they stick their heads out of the shell. I keep the young in the house at night and use great precaution to keep them from getting chilled. They should not be allowed to wander about until they get the first feathers on the wings and from that time they will grow rapidly if given a little mash as an evening meal. I feed the entire flock an evening meal and always find them waiting for it and never have to go out in the fields to find them.

This breed of geese will weigh as high as seventeen pounds per bird but averages twelve pounds. A revenue of considerable extra money can be had if the birds are picked for the live feathers. They shed some of the feathers about once in six weeks and if the owner keeps track of the feather shedding date he can secure a lot of feathers. I do not pick the feathers from the birds unless they are dead as I think that live picking of feathers annoys the birds and they will not put on as much flesh if picked alive.

This variety of geese mate up in the late fall and breeding stock should be selected from this time till spring. If new matings are desired they should be made as early in fall as possible to secure the right amount of fertile eggs. If they are to be purchased for breeders they should be bought as early in the winter or late fall as possible so that they will get acquainted with their new homes. I feed the breeders on corn and beef scrap with a good supply of grit and charcoal in it as a winter feed. The goose should be fed a good supply of shell lime in the spring as she will need it in shell making.

It takes from thirty to thirty-two days for the eggs to incubate and the goslings should be hatched at a time when there is a supply of green grass at hand.

I believe that the goose will thrive on less grain than any other breed of poultry and at the end of the season produce more money than do other kinds of fowls.

GARRETT M. STACK.
Connecticut.

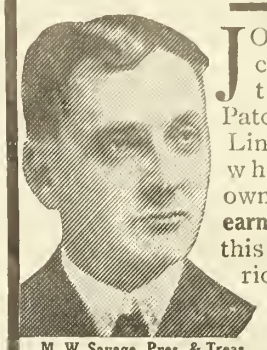
Light Brahmas and Fruit Trees.

Light Brahmas when well managed are a great advantage to fruit trees. I have had some apple trees that gave poor returns in size and quality of fruit show improvement in this respect the first year and marked improvement the second and third year after Light Brahmas had been allowed to range under them.

Light Brahmas while they do not range as far as some breeds are voracious eaters and close feeders. They, therefore, consume the poor fruit that falls from the trees and at the same time destroy the worms and insects harmful to the fruit. While it may not be possible to confine them altogether under the fruit trees, yet fencing can be so arranged that they may be allowed to roam under these trees when desired and kept away from them at other times.

Light Brahmas can be kept in one large flock and allowed to range free-

Make Your Money Work For You



M. W. Savage, Pres. & Treas.

JOIN us in completing the Dan Patch Electric Line and **keep** what your own money **earns;** get in on this chance of rich reward for the small investors who **control their own dividends.**

Dan Patch Electric Railroad

is an example of what the people can do when they work together! A line running finely-equipped trains daily—with a big and growing freight and passenger business—the first electric road to tap the wealth of the great and growing Northwest.

This Electric Line is the greatest achievement of my business life—I consider. I have made a large investment in it—that's **my** faith in the Dan Patch Railroad! And 6000 others have joined me, until now we have a road that has 40 miles in operation—and 30 more soon to run—a wonderful proof of what can be done by the People when they **pull together** without interference of the "money-kings."

I offer you $600 in voting stock absolutely free with an easy monthly investment in preferred stock

The Dan Patch Electric Line is in successful operation from Minneapolis to Northfield—about 40 miles, but I want to push on and complete it to Rochester, and I want you to join us. Be a stockholder—let your money work for you. But first

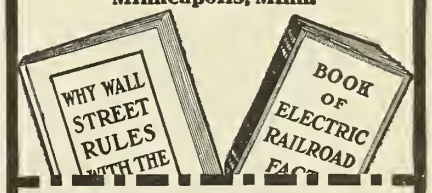
Write for my Free Books

One gives you all the facts about electric railroads and the Dan Patch Line; tells **how** it works, and **where** it's working—all about it; solid substantial facts. The other book will give you some new and startling ideas about Wall Street and how it **gets rich on your money.**

Don't delay—it will cost you **nothing** to get this information. Send for the books today and get all the details about **me**—and the Dan Patch Line and all the "REASONS WHY."

You should invest—whether much or little—and lay a firm foundation for **Independence** of panics and Wall Street, and the men who run the "System." Write me now—today, on this coupon, or a postal.

M. W. Savage, President
Minneapolis, Minn.



M. W. SAVAGE, Pres. Dan Patch Electric R. R.
Minneapolis, Minn.
Dear Sir: I don't know whether or not I'll invest any money, but I'm interested and want you to send me your two books, without any obligations to me—your "Book of Electric Facts" and "How Wall Street Rules With the People's Money."

NAME .....

POST OFFICE.....

STATE .....

Fruit-Grower—Jan.

Sam Thompson's Big 1912 Incubator Offer.

Fairest and Squarest Offer Ever Made

Last year I surprised everybody by guaranteeing my incubator to hatch 90% or better. It made other manufacturers take notice. No one believed an incubator could be built to make good on such a guarantee. This year I repeat the offer because the Fairfield made good.

90% Hatches Guaranteed

Because the Fairfield is made of finest Calif. redwood Has perfect heating system and roomy nursery.

Write for My Free Catalog

Let me tell you more about this wonderful incubator. Let me send you full particulars about my 90% hatch guarantee and 2 hatch trial offer.

S. C. Thompson, Pres. Nebraska Inc. Co.,
50 **Main Street,** **Fairfield, Nebraska.**

50 Best Paying Varieties Pure-Bred Chickens, Ducks, Geese, Turkeys, Eggs, Dogs and Incubators. **All at Low Prices.** Send 4c. for my Book which gives reliable information worth many dollars to you
W. A. WEBER, Box 938 **Mankato, Minn.**

ly or they may be kept for their especial value as breeders, the eggs being used or sold for hatching purposes. In the last cases the smaller yards can be made for the different matings and these yards connected with a large yard or yards under the fruit trees. In this way certain pens of fowls can be allowed the range of these trees when the others are confined to the smalled yards. Each flock can be given its turn on wider range in this manner.

While Light Brahmas bear confinement better than most other breeds of poultry they do the best when given a fairly wide range. They do not need a high fence to confine them, a light four foot fence will answer the purpose; and they are docile and easily managed. Moreover, in giving them entire free range it will be found that they do not wander as far off as some varieties of fowls are apt to do.

It has been my experience that plums, pears and apricots do fine in yards where Light Brahmas are kept more closely confined. Apples and peaches do the best in large yards or where fowls have more range.

Light Brahmas are heavy fowls, having more meat per bird than most breeds. It has been my experience in keeping them that they will add to their weight the second year.

While it is said that raspberries, blueberries and blackberries grow very well in poultry yards care would have to be exercised in keeping the fowls from the berries when they began to ripen as well as when ripe even though the greater number of these berries would be beyond the reach of the fowls. This period, however, would only last over a comparatively short time.

The combination of fruit growing, berry raising and poultry keeping does not seem to be followed up as well as it might be. I account for this from the fact that a fruit grower may not take the interest in poultry that insures the best results. Therefore, it would seem that a partnership of two people, one taking charge of the breeding and care of pure bred poultry, the other the raising and cultivation of fruit would prove beneficial to both.

H. E. HADOCK.

New York.

Checking the Roup.

There is nothing more discouraging to the poultryman, than the appearance of disease in his flocks. Certainly the pleasure of raising fowls is soon robbed of its brightness when one bird after another falls a victim to one of the many ills that they are heir to.

At this season of the year colds and roup are very prevalent, and while they do not appear to be contagious, they are none the less and should be remedied before they carry their ravages through the entire flock.

The question naturally arises, "Are the sick birds worth doctoring, if they are, what is the remedy?" As to whether they are worth treating depends on the bird. There are sick birds that should be killed at once and burned. Again there are others that are worth saving. If they are to be saved, however, they must receive immediate and effective treatment. The following simple remedy will prove entirely sufficient in a large per cent of the cases where the trouble is a cold or the initial stages of roup.

Prepare a solution of 2 per cent permanganate of potash, by dissolving 2 ounces of the permanganate crystals (bought at any drug store at about 30 cents per pound) in 3 quarts of water. Keep this solution always on hand, and when a bird shows the first signs of trouble, take enough of the solution to allow the head of the bird to be submerged and put the sick bird's head under it until it nearly chokes. Remove the birds head from the liquid and allow it to sneeze and sputter, forcing the liquid into the air passages. Repeat this three times before you let the bird go, and repeat it twice a day until the bird no longer shows signs of the disease. The operation is simple and easily done, and in the majority of cases entirely sufficient.

Potassium permanganate is an excellent disinfectant and can be given to the birds to drink with the result that many other cases will be warded off. When given in the water, only enough should be placed in the drinking water to give it a claret color. The birds can be given water thus treated for three or four days at a time. No other water should be placed where the birds can get it, otherwise they will prefer the untreated water to that containing the drug.

This treatment will not remove the first cause of colds and roup. This must be borne in mind. It will not offset the bad effects of drafts, overcrowding and bad ventilation, those factors that cause so much of the poultryman's troubles. Prevention is always better than cure, and the above treatment is only the supplement to the proper housing of poultry. A sick hen will not lay, even though she is only a little sick. Neither will she lay as soon as she gets well, in fact she may never prove to be a profitable bird for breeding purposes. It pays therefore to first prevent the first cause of sickness, and secondly to take proper care of the bird that does become ill.

JOHN F. NICHOLSON.

Idaho Experiment Station.

Infertile Eggs Keep Best.

A large part of the heavy loss from bad eggs can be obviated by the production of infertile eggs. This has been demonstrated beyond a doubt by the investigations concerning the improvement of the farm egg which during the past two years have been conducted in the Middle West by the Bureau of Animal Industry of the Department of Agriculture.

Secretary Wilson of the Department of Agriculture estimates that, between the producer and the consumer, there is an annual loss of $45,000,000 in the egg crop of the United States, the greater portion of which falls on the farmer, who is by far the largest producer. Of this enormous loss, about one-third, or $15,000,000, is what is known to the trade as a "blood ring." As it is impossible to produce a "blood ring" in an infertile egg, such an egg will stand a higher degree of temperature without serious deterioration than will a fertile egg.

The secretary says that if farmers and others engaged in the production of eggs would market their male birds as soon as the hatching season is over, a large saving would be made, as practically every infertile egg would grade a first or second if clean and promptly marketed.

No more simple, efficient method for the improvement of the egg supply could be adopted than the production of infertile eggs.

Consumption in Chickens.

A chicken pie made from the consumptive remains of a venerable hen, whose long honorable career has at last been brought to a close, is not appetizing to think of.

It is not generally understood that chickens are affected with tuberculosis almost as frequently as human beings. A very common method of giving fowls this disease is in the feeding of table scraps, if one of the family is tuberculous. Another very dangerous manner of infection is allowing strangers or other visitors to spit in the chicken yards. Milk from tuberculous cows is also a source of infection. The germ causing this disease in poultry is the "avain" type of the tubercle bacillus, and resembles very much the causative of human tuberculosis. The germs are thin, rod-like, and so small that it takes over twelve thousand of them laid lengthwise to measure an inch.

The disease is difficult to detect in the living fowl. The general health of the flock seems below par, and they are not thrifty. The combs are pale; they eat ravenously but do not gain in weight, and are often lame, due to diseased joints. Some of the common names applied to chicken consumption are "spotted liver" and "going light."

In dressing the fowl, small yellow lumps of a gritty sandy nature are found in the liver, lungs or intestines. The lungs may be full of cheesy chunks the size of a shot.

There is no cure known at present for this disease. Prevention is absolutely necessary. Should you find it in your flock, better destroy and burn them. Disinfect the poultry house, yard and runs with a ten per cent solution of formalin. Carefully examine their food, water or milk. Procure good stock of a healthy strain and keep in a new location.

E. T. BAKER.

Idaho Experiment Station.

Vetch For New Land.

It is a recognized fact that the soils of Southern Idaho, like most soils of the arid regions, are deficient in nitrogen and humus. As a rule farmers also recognize the great value of a leguminous crop in supplying this deficiency. The question often arises, however, as to which of the more important leguminous crops will give the best results under certain conditions.

Because of greater permanency and deeper rooting, alfalfa and clovers are preferred where a longer rotation can be practiced; but in cases where new lands are to be brought quickly into better conditions for growing potatoes, etc., or for use as a cover crop for orchards, we believe that the vetch will be found to be a very valuable crop.

At the Gooding Experiment Station this season a plat was sown on May 9th to vetch and oats at the rate of 50 pounds of vetch and four pecks of oats per acre. This plat received three average irrigations and was clipped on the 29th day of July, yielding at the rate of 3,927 lbs. of cured hay per acre. By the 1st of October the second growth of vetch averaged 18 in. in height. Thus a piece of new soil was made to produce a fair amount of good forage and also to furnish a considerable amount of green manure in one season.

On May 9th a plat of raw sagebrush soil was sown to hairy vetch. This was not cut for forage and on the 15th day of September plants 75 inches long were taken from the heavy matted growth.

The roots of the vetch on both of these plats were abundantly supplied with nodules containing the nitrogen fixing bacteria. The growing and plowing under of such amounts of organic matter cannot fail to have a very beneficial effect on lands deficient in nitrogen and humus.

When such results as these can be secured in one season, we do not hesitate in saying that this crop fully merits further consideration by the many farmers of the State who are trying to bring their new lands into greater productivity.

Idaho. J. S. WELCH.

Now is the time to get the new spraying machine you will use this year. Send for the catalogues of manufacturers, read and compare them carefully, and then send in your order early, and get your machine in good shape before the rush season comes.

PFILE'S 65 Varieties

LAND and Water Fowls. Farm-raised stock, with eggs in season. Send 2c for my valuable illustrated descriptive Poultry Book for 1912. Write Henry Pfile, Box 617 Freeport, Ill.

1912 CATALOG FREE

Illustrates and gives prices of 45 varieties land and water fowls and eggs. This book should be in the hands of every person interested in poultry for profit. Address S. A. HUMMEL, Box 18, FREEPORT, ILL.

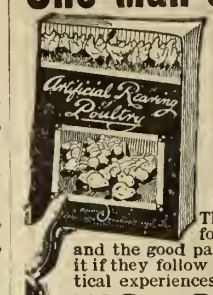
CHOICE STANDARD BRED

Rouen, Pekin and Indian Runner Ducks; Buff, White, Golden, Silver, Partridge and Columbian Wyandottes, Barred, Buff and Barred Rocks, $2.50 each, $6.00 trios, $9.50 pens. Toulouse Geese, $4.00 each. Satisfaction guaranteed. Geo. Hartman, Freeport, Ill.

Foy's Big Book MONEY IN POULTRY and SQUABS

Tells how to start small and grow big. Describes world's largest pure-bred poultry farm and gives a great mass of useful poultry information. Low prices on fowls, eggs, incubators and brooders. Mailed4c. F. FOY, Box 27, Des Moines, Iowa

One Man and His Son MADE $12,000 In One Year with Poultry



Think of it! A good sized fortune made in one year, and the good part of it is anyone can do it if they follow similar successful, practical experiences. Our big

112-Page Book Tells How

It is full of information gleaned from the successful experiences of the world's most prominent poultrymen

In addition there are articles on the Possibilities of poultry raising on the ordinary farm—which breeds are best—money-making methods of raising ducks—how to feed—breed—rear—market and hatch on a money-making scale. Contains scores of letters from leading poultrymen telling how they have succeeded—their secrets of success. No book like it. No book contains so many articles of actual, practical, successful poultry raising experiences.

Write Your Name on a Postal

mail it today and insure getting a copy before the edition is exhausted.

Describes the 1912 Sand Tray Prairie State Incubators, Universal Hovers, Colony Houses, etc., which are revelations in artificial incubation machinery. Be sure to write for book today. Free—prepaid.

PRAIRIE STATE INCUBATOR CO.
14 Main Street Homer City, Pa.

I'll Start You and Keep You Going *Right* in the POULTRY Business

My World-famous high-quality incubators and brooders, and my Free Poultry Lessons make success easy and sure for you!

SUCCESSFUL INCUBATORS AND BROODERS

are made right and with the free advice and lessons I give my customers no one can possibly fail to make biggest hatches of strongest chicks. Write me. A postal brings all facts, book, prices and proposition. *"Proper Care and Feeding of Chicks, Ducks and Turkeys—sent for 10c* J. S. Gilcrest, Pres.

Des Moines Incubator Co.
184 Second St., Des Moines, Iowa

Mandy Lee

The Incubator of Certainty

Operated by rule. The novice gets the same excellent results as the experienced operator. The only incubator with the open-front poultry house plan of ventilation. Only one applying the vital principle of low moisture with high temperature and high moisture when heat runs low. All regulated automatically. Send for latest book, describing the new features—plain, practical, helpful.

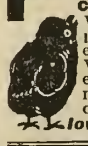
GEO. H. LEE COMPANY,
1122 Harney St., Omaha, Neb.

YOUR HENS YOUR FARM YOUR MONEY The Story of 25 Years

with Poultry and Farmers and Fanciers will help many Farmers get more eggs—better prices; make more and save more money; tells things few folks know on making money with hens. Find out about America's Largest Line of Incubators and Brooders, and get six poultry chapters written by Robert Essex himself—It's all in our Free Catalog—Write today. Address Robert Essex Incubator Co., 71 Henry St., Buffalo, N. Y.

Poultry Supplies

COMPLETE CATALOG FREE



We are the largest dealers in poultry supplies west of the Mississippi and handle everything needed by poultry breeders. We also sell thoroughbred poultry and eggs for hatching. Ask for a copy of our new illustrated poultry supply list; also complete catalog of seeds, plants, etc.

Iowa Seed Co., Dept. 74 Des Moines, Ia.

PEARL GRIT

Good laying follows right digestion. Pearl Grit helps hens get the good of what they eat. Sharp, clean, white, great shell maker. Grit for fowls of all ages. Try it. Write for free booklet.

OHIO MARBLE COMPANY
757 S. Cleveland St., Piqua, O.

This Poultry Guide Free

Tells you how to get more eggs at ½ your present feeding cost—what to do month by month. Most helpful poultry book published. Write for it today.
HUMPHREY, Union St. Factory, Joliet, Ill.

GREIDER'S FINE POULTRY

Book and calendar for 1912 contains 200 pages, 72 varieties pure bred, 62 colored plates. Many other illustrations, descriptions. Incubators and brooders. Low prices on all stock eggs. How to raise and make hens lay. Get my plans. They all say it's great—this book—only 15 cents.
B. H. GREIDER, Box 41, Rheems, Pa.

WE PAY $80 A MONTH SALARY

and furnish rig and all expenses to introduce our guaranteed stock and poultry powders; money-back guarantee; outfit free; new plan; steady work. Address BIGLER CO., X 323, SPRINGFIELD, ILLINOIS

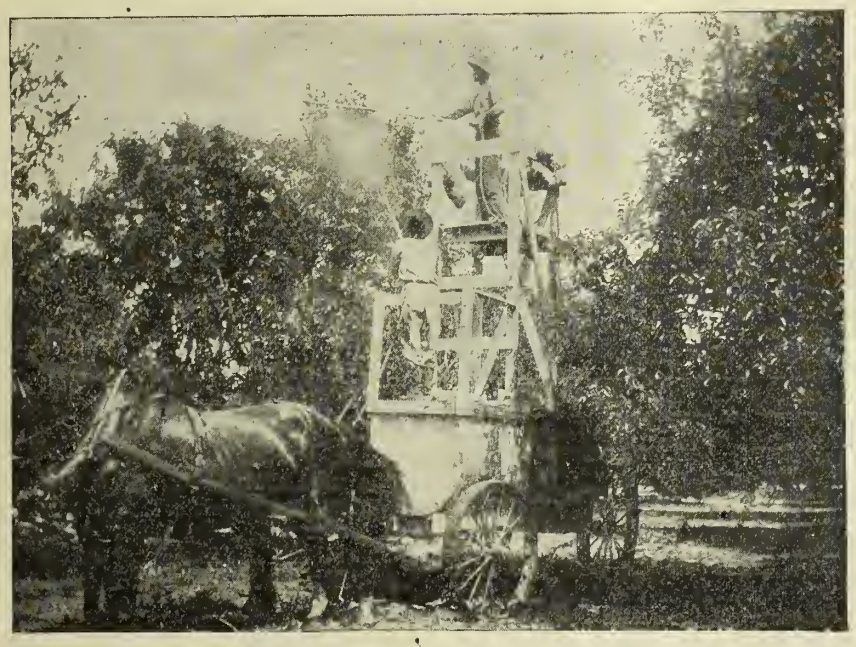
Please Mention The Fruit-Grower whenever you correspond with our advertisers

SPRAYING FOR THE PUBLIC

As I have sprayed a good deal for my neighbors, I will describe this work for Fruit-Grower readers. The farmers and orchardists of Pennsylvania have learned so well the lesson that the codling worms can only be killed during the first seven days after the petals fall that they all demand their spraying to be done during those seven days. This makes a great rush during those few days, and together with my own thirty acres of orchard it was impossible to cover the territory with one machine; so I was forced to buy a second machine last May. I was fortunate in securing a good electrician by the day to run one machine, while I ran the other. From the moment the petals were off, both machines were busy until it became too late for the first spraying for codling worms. After that we began the second spraying and covered a good many orchards a second time; most farmers, however, spray only once. We used a gallon of commercial lime-sulphur in a barrel (fifty gallons) of water, for scab and three pounds of lead arsenate per barrel for worms, combining the two at one operation. My machines each hold five barrels poisons, chemicals, oil and gasoline. Or, if he wishes, I furnish these and charge him wholesale price for them.

The charge might seem high, but we must remember that the machine represents an investment of $300 in cash, and that it stands idle eleven months of the year, during which time it must be housed, and that when I am spraying for my neighbors I am absent from my own farm, where my time is worth $10 a day to me.

I find the work interesting, but very responsible, for my neighbors want results. And my machines bring the results. Once in my first year of public spraying, when a man was paying me at the end of his job, he said: "Mr. Johnston, I never paid out any money that seemed so useless and wasteful." Of course, I felt hurt by the remark. But in November he told me: "Mr. J., I never paid out any money that brought me better returns than that spraying. My customers in New Castle tell me that last year they could hardly find one of my apples without a worm, and this year they can't find an apple with a worm." This made me feel better. In fact, all my neighbors are enthusiastic over the results. I sprayed in one orchard where millions of canker worms were hanging from the trees by their threads, and crawling all over us, and over the horses, and the machine and over the farmer's daughter, who was driving



FIGHTING CODLING MOTH IN NEW MEXICO

Spraying in the orchard of W. H. Badger, New Mexico. One man in the tower and one on the tank, so that both can spray from above, gives good results. Mr. Badger says the man on the tank uses a five-foot extension rod and the man in the tower has a ten-foot rod, with two nozzles that will throw a fine mist. A tower such as this is the only really effective way of reaching the blossoms at the tops of the trees.

(250 gallons) of spray, which is a heavy load to haul in a soft orchard. Both of them have tank-filling attachments, so that they fill themselves by the gasoline power.

When I start out to spray for my neighbors, the nearest man comes to my house the night before at 7 o'clock and takes the machine home with him.

I am at his place by 7 the next morning, and then the time begins. When the job is done, the farmer drives the machine to the next farm, delivers it at the pump, and then his time ends and the next man's time begins and ends when he has taken the machine to the next farm. Of course, meal time is not counted. We spray from four to six orchards a day by this system.

To get over thirty orchards in the time allowed, requires imperatively that farmers co-operate in this way, and that each farmer shall have his team and men ready to go to work immediately when the machine is brought to his pump. Even if he is not ready, his time begins then. The last farmer in the circuit delivers the machine at my house when his job is done, and when he has delivered it his time ends. The charge is 2 cents a minute to the farmer, beginning when the machine reaches his pump, ending when he delivers it at the next pump. I go with the machine to run it and to advise as to spray materials, and to oversee the nozzle men, but the orchard owner furnishes the horses and laborers and all materials, such as the horses for us. The other day they telephoned that the canker worms were all killed at once by the spraying, and that their apples were free from codling worms.

In conclusion, I must say that no machine except a gasoline sprayer of two or three, or four horsepower, is worth buying for orchard spraying, and as this costs $300, very few will buy one to do custom work, and as a rule orchard owners who have such a machine cannot afford the time to spray for their neighbors.

J. C. M. JOHNSTON.

Pennsylvania.

Fighting Plum Curculio.

In the December Fruit-Grower you quote from Prof. Lombard of the Vermont Experiment Station on Plum Curculio. He says: "The Curculio is one of the hardest insects to fight, and there is no satisfactory method of dealing with it. Jarring the trees and catching the insects on sheets is the old-time method; spraying with arsenate of lead once every two weeks beginning with June 15th will destroy a great many."

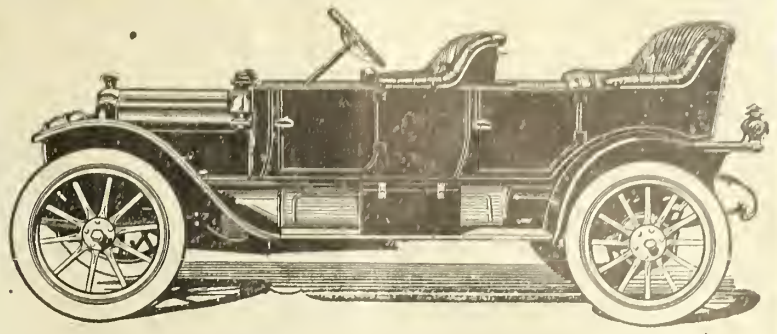
On this farm we have 2,000 plum trees bearing annually good crops of plums. We never think of going back to that old obsolete method of jarring and sheets. It is too slow and laborious for a commercial orchard. The insect is not hard to control. We do about as follows:

As soon as the blossoms fall we go into the orchard with a shower spray using commercial lime sulphur with arsenate of lead or arsenite of soda. Do this four times at intervals of four or five days; then once or twice more at long intervals if found advisable. Twenty days covers the time of their vigorous attack.

The blossom rot is a much more serious enemy. Lime sulphur is a fungicide and will control the rot largely if not entirely. Experience in this method with some variations since 1895 makes us speak definitely and confidently.

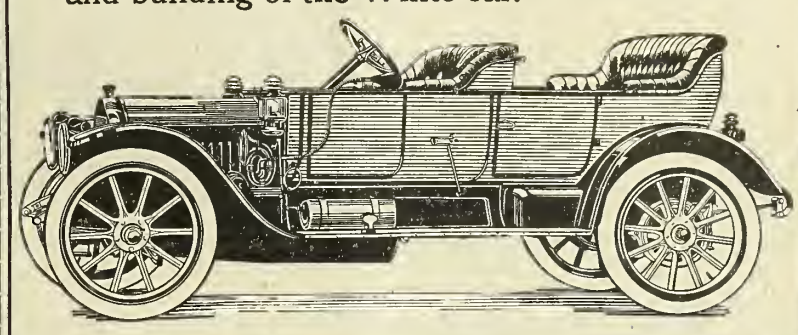
Why do experiment stations still throw out criticisms as to the results of spraying for this busy little pest? All the stations that are not up in this matter should enquire of the Ohio station for the record of their work in my plum orchard in the year 1895 under direction of Professor Weed.

Ohio. S. R. GILL.



The Farmer's Car—A White

THERE are certain fundamental advantages which the farmer demands of a motor car before he is interested to the point of buying. Probably no class of men are more critical of the mechanical principles involved than the farmers, because of their constant operation of farm machinery. To them—the simplicity of White motors—the total absence of complicated parts—appeals at once. They know it means that the engine is easy to care for—that adjustments are made without any waste of time or energy. Trained to value mechanical excellence as well as economy in operation, farmers are quick to grasp the possibilities of the medium-sized cylinders and the long-stroke engine of the White car—quick to see the economy in a transmission having four forward speeds instead of three. In other words, the farmers are better equipped by their experience to appreciate the designing and building of the White car.



A Farmer Wants the Best

BEING a judge of principles and construction, a farmer is willing to pay for the car that comes up to his expectation. Size for size, or power for power, the White gasoline cars are the most economical motors to operate. No design has yet been found equal to the long-stroke engine—no method of building equal to the cast en bloc cylinders—no materials used equal to the chrome-nickel steels and vanadium steels, heat-treated. Even the frames of the White cars are heat-treated. Nothing but ball-bearings are used throughout. If there is a kind of steel—kind of radiator—any refinement of manufacture—which you know would make a car better, you will find it in the White, and that is why the White gasoline cars are so wonderfully efficient and cost so little to operate and maintain.

Let us send you our latest catalogue and testimonials of the actual experience of users—hundreds of them—they know.

The White Company

East 79th Street, Cleveland

HOSE FOR SPRAYERS

Investigation among users of power spraying machines develops that not enough attention is given to the quality of hose used in spraying. The newer power machines maintain pressure running as high as 300 pounds per square inch at times and with such outfits it is necessary that hose of high quality be used. Cheap, low-grade hose will not stand the pressure and it is the dearest hose that can be bought, when loss of time is considered.

Recently The Fruit-Grower has been getting some information on this subject and finds that good hose is available, if growers are willing to pay for it. In fact, it is likely that the fruit-growers are largely responsible for so much poor hose being used in spraying, since they are not always willing to pay the price for hose of quality. And yet it is the height of folly to save a few dimes on the price of hose, and lose time worth more than a hundred times as much, and to lose this time, too, just when every minute counts.

Before the spraying season opens every line of hose used last season should be carefully examined. Much of it will be found unfit for use this season, if high-pressure machines are used. Spraying is hard usage for hose, for in addition to the high pressure dragging the hose over rough ground, and often over stones, wears out the surface very quickly. It is not safe to depend on hose used last year, therefore, and every line should be most carefully examined.

Even though the hose should seem all right, it will be well to get at least two extra leads, with all connections, so that in case of a breakdown the defective hose can be replaced at once by a good lead. There is no time to lose when the spraying season is on. Have extra leads of hose, and there need be no delay.

In getting new leads of hose, get them long enough. Most manufactureds now make high-pressure hose in long lengths, up to 500 feet, and if orders are placed early enough leads of any length can be secured. Joints are often very unsatisfactory, for when the pressure is on there is always danger of a "blow-out." Continuous lengths are most satisfactory. In our work we have found that fifty-foot leads are none too long. If trees are more than thirty feet apart perhaps sixty-foot leads will be even better.

Recently The Fruit-Grower wrote to a number of manufacturers of hose, and found that practically all of them are anxious to furnish growers the quality of hose they need if the latter are willing to pay the price at which good hose must be sold. Most of the manufacturers sell their goods under trade-mark brands so that Fruit-Grower readers can get guaranteed hose if they will insist on getting it, either from manufacturers of spraying machinery or from local dealers.

The Mechanical Rubber Co., Chicago, has an "Elephant" brand, which can be secured in continuous lengths up to 500 feet, and which is guaranteed to stand the pressure required. This hose has a special inner coating calculated to withstand the action of all spraying chemicals. This hose weighs about thirteen pounds per fifty-foot length, and is sold in great quantities in fruit-growing districts.

The Goodrich Rubber Co., Akron, Ohio, replied most fully to our inquiries, and went into details regarding the construction of its hose. This company's "Monitor" brand comes in 500-foot lengths, if desired, and two grades are furnished. The two-braid construction is guaranteed to stand a pressure of 200 to 225 pounds; the three-braid construction will stand a pressure as high as will be needed with any spraying machine. This company believes that growers should insist, when buying a spraying machine, that it be equipped with hose of known quality.

The Peerless Rubber Mfg. Co., 16 Warren St., New York, writes that its "Peerless" brand hose comes in various lengths, and can be furnished with three-quarters inch diameter. This company has a booklet about its hose, for benefit of fruit-growers.

The Diamond Rubber Co., Akron, Ohio, has given special attention to making hose for power sprayers. This is a three-ply hose which is guaranteed to stand a pressure of 300 to 500 pounds. This hose comes in long lengths and has been thoroughly tested for spraying purposes. It is protected by a fine cover to prevent deterioration, and this fabric is thoroughly saturated with rubber to prevent chemical injury.

The Boston Woven Hose and Rubber Co., Boston, Mass., has also given special attention to making spray hose, even to extent of making one-inch hose to use on the high-power outfits with which certain New England cities are spraying shade trees. The "Bull Dog" brand, made by this firm, is guaranteed to give satisfaction, and to stand the high pressure needed for effective spraying.

The Revere Rubber Co., Chelsea, Mass., in its letter calls attention to the importance of using hose the tube of which is properly protected against action of spray chemicals. Ordinary hose, it claims, is worthless for spraying, on account of the coating of the hose being eaten away by chemicals.

The New Jersey Car Spring & Rubber Co., Jersey City, N. J., says that fruit-growers and manufacturers of spraying machines are largely responsible for the poor hose sold. They seem to forget that spraying machines now have much greater pressure than a few years ago, and yet it is expected to buy hose which will withstand this pressure at the same price formerly paid for hose of lower grade. This company makes a triple-fabric hose, one-half inch internal diameter, which will withstand an initial pressure of 500 pounds.

The Boston Belting Co., Boston, Mass., has a special brand of hose for spraying, "Roxbro" Braided Hose. It is claimed this hose is practically non-kinkable, and the manufacturers guarantee it to stand the pressure required of it. Fifty feet of this hose, half inch diameter, the manufacturers say, weighs about fourteen pounds.

The Hamilton Rubber Mfg. Co., Trenton N. J. says its Cygnet hose will stand the pressure all right, and for spraying purposes a special treatment is given the hose, to enable it to resist action of chemicals. This hose is seven-ply and is guaranteed to withstand working pressure of 300 to 500 pounds.

The Home Rubber Co., Trenton, N. J., sends us a sample of its "Faultless" brand, which is an exceptionally fine grade of hose. This company says this hose will stand a pressure of 500 pounds, and anything of lower grade than this is not recommended by it. This weighs about seventeen pounds for fifty-foot lengths. The sample submitted shows the hose to be of very high grade.

The Quaker City Rubber Co., Philadelphia, Pa., agrees with other manufacturers that there has been too much demand for cheap hose, which must necessarily be of poor quality. This concern calls attention to another point which is important, and that is that there is no uniformity of specifications among manufacturers of spraying machinery; some want hose of one diameter and others require a different diameter. If growers will demand good hose and will pay for it, this company knows that the quality can be supplied. This company will send sample of its hose on request.

The Fruit-Grower quotes from these letters for two purposes: To show our readers that good hose can be secured if it is insisted upon and one is willing to pay the price, and, second, to acquaint our people with some of the guaranteed brands. Not enough attention has been given to the quality of hose purchased nor to the care of hose in actual work. Much time and money can be lost by depending upon poor hose; everyone should have dependable hose this season before starting to spray.

Couplings should also be given more attention, for high pressure machines often play havoc with the old-style couplings. Get couplings made for the diameter hose you intend to use, and get plenty of them, so they will be ready when needed. Details like this are often overlooked until time for spraying arrives, and then is too late. Inspect your supplies early, and be ready.

THE BEGINNING OF A THRIFTY ORCHARD IN SOUTHERN IDAHO.

Photographer Turned Farmer.

When I came to southern Idaho I knew very little about ranch life, having been in business for ten years previously. But poor health and love for the country finally persuaded me to make a home for myself in the country. Now, after three years of hard work, it begins to look and feel like a home. At the time of my settling here, all of the land for miles around was covered with a dense growth of sage brush, which had to be railed and finally grubbed out before one could find a place to put a dwelling house of any sort, to say nothing about cultivating the soil for gardens, grain and fruit.

One thing very favorable about this country is the scarcity of heavy frost in the spring. We have some light frosts but they do not seem to hurt the fruit. I have seen cherries and peaches as large as shoe buttons go through a frost heavy enough to make one think all of the fruit would be killed.

I came here with just enough cash to make my first payment on my irrigated land, and a return ticket to Salt Lake City. I took up my land in November and then spent the winter working near Salt Lake City, and came out to this ranch in March. By June 1st I had twelve acres of orchard planted in strips cleared in the sage brush. I then worked most of the summer running a photo studio in town. I walked the six miles to town all of that first summer and fall. I would keep the studio open two days of each week and do my finishing at home, thus being able to give the other four working days of the week to the work on my ranch.

I cultivated my trees with a big hoe. The ground was easy to work, and I could cover several acres in a day. I raised a good garden that year, which cut down my living expenses considerably. The next summer I borrowed $500 on my ranch, bought three horses and cleared up all of my forty acres and put in six acres of alfalfa. I also bought 4,000 root grafts and raised my own apple trees. I built two small houses for my neighbor during the summer, 1909, thus helping out very much financially.

The clearing of my orchard land was finally finished and I set out a five acre orchard for my brother. Next summer I set out thirteen acres more for my brother, so that now I have enough income to live on without going away from home.

This year my peach, pear, plum, apricot and apple trees bore fruit for the first time, and we have enjoyed it more than any fruit we could buy.

For three years I have been a subscriber to The Fruit-Grower and think I owe much of my success to the valuable information received from reading its pages.

Idaho. GEO. D. CHAMBERLIN

Berry Notes.

The question of what to use for mulch and when to apply it, is one of considerable importance. For many years I used stable litter, and for several reasons this is splendid for the purpose. There is enough heavy material in it to hold the lighter part snugly on the row, and prevent the hard winter winds from blowing the straw all off the field. Also, the rains will leach the manurial elements from the litter and take them right down to the roots of the plants where they are needed. However if the stable litter contains timothy or clover seed, it is liable to give much future trouble.

Short cut or broken corn stalks are fine for this purpose, and give no trouble by introducing weed and grass seeds. In most cases, especially if the ground is stony, the crab grass left in the middles after the last plowing will furnish enough mulch in the middles.

The question as to whether an acid soil is good for the strawberry is being discussed quite widely in the horticultural papers at present. The different views held by the experts seems to indicate that there is something in this question not well understood, and which requires further investigation. Some have found an acid condition of soil beneficial to the crop of fruit, while others say it is detrimental. Speaking from my own experience, I would say that if the soil is acid enough to become 'sorrely' as Mr. Tenney of Mass. says, the berry crop will suffer thereby for the sorrel will kill the soil, if the acid does not.

Some authorities caution against the use of lime, or wood ashes for such soil, but I am going to try each on separate rows, the coming spring.

As to pollination, there is a whole lot of 'bugbear' about it. If a good commercial berry of the staminate or perfect flower sort succeeds in your neighborhood, set that one by all means. The rows of different varieties set in the commercial fields for pollenizers make too much bother. True, some standard market sorts notably Bubach, Warfield and Haverland are pistilates, but if one desires such sorts for main crop, one row of a good staminate, to eight rows of the other will prove sufficient. I know most authorities say one to three or four, but the fact is, if weather conditions are right, most pistillates will bear a fair crop alone, and if frost, rains or drouth prevail at blooming time, few and buttony berries will be the result anyway.

Now I want to impress the good points of the Aroma. I have tried some 40 kinds with the object of getting something to beat this excellent variety, but have failed so far. The good points are:

1st, It is a staminate, and strong in pollen, to pollenize its own bloom, and that of other varieties:

2nd, It is rust proof, at least in this vicinity:

3rd, A good plant maker, plants well rooted:

4th. The fruit is large, firm, high colored and fair quality:

5th, The berries hold up in size to the last picking.

These qualities have given the Aroma a position in the markets of the middle, western and northern states above that of all competing varieties. W. C.

Missouri.

Buy a Farm in the Gulf Coast Country of Texas Where Prosperity Smiles and Crops Grow the Year 'Round

Whether for a home, or purely as an investment, you cannot do better than to buy a 10, 20 or 40-acre tract of land in the Texas Gulf Coast Country on easy terms.

You have heard of this wonderful land of promise — no doubt you have often wished you could go down there where the soil is of such marvelous fertility that **ALL** crops do well—where cotton is king and corn a close second—the land of oranges, figs and all small fruits—and the truck-growers' paradise!

In constantly increasing numbers far-sighted people are buying land, settling, improving and building homes in the Gulf Coast Country of Texas. Why don't **You** join them **Now**, when you can buy land **CHEAP** and on such easy terms?

Save a Little Money Each Month

and invest your savings in a few acres of The Prosperity Land Tract, situated in the Houston District—right in the heart of the Great Gulf Coast Country of Texas. But act promptly! The demand for this rich land is beginning to exceed the supply. Prices are rising. Get yours **NOW** and benefit by its natural increase in value. It's the way big fortunes are made!

Write Today For Full Particulars

Are you a Business man, Professional man, Northern Farmer, Clerk, Wage Earner? If you are, you will surely be interested in our Special Investment Contract, full particulars of which will be mailed free on request.

You can buy either large tracts for general farming or small tracts for intensive farming.

Our proposition is one which, when thoroughly understood —cannot fail to make an irresistible appeal to any man who desires to make an exceptionally safe land investment, or acquire an income-producing home at a nominal cost on easy terms. Anyone can afford a 10 or 20-acre fruit or vegetable farm in the Prosperity Land Tract. Our liberal offer makes it possible for the man of small means to secure a home and a certain life income in a land that is unexcelled in location, soil and climate—a land of sunshine, fruit, flowers and plenty—the "Garden Spot of the World!"

Investigate. Don't put it off. Write today. The more you learn of the Texas Gulf Coast Company and of the wonderful opportunities which there await you, the more anxious you will be to cast your lot with the thousands who are flocking into that land of promise. Get our prices, terms and full particulars. Address

The Prosperity Land Co., Dept. 61, St. Louis, Missouri

NUT GROWERS CONVENTION

The second annual meeting of this association of men interested in the promotion of nut culture in the Northeast was held at the New York State College of Agriculture at Cornell University, December 14 and 15. Not in the recollection of the writer has he attended a meeting of any body of men interested in crop production where discussion flowed so easily and pointedly, and where every member semed charged with a special mission on behalf of nut culture and the extension of the nut industry. Every session was replete with subject matter derived from papers or developing in the subsequent discussion of prime interest to those directly or indirectly affected by the production of fruit and fruit products. The leading students of our native nut flora were present; men like Dr. Robert T. Morris, Dr. W. C. Deming of New York City; Mr. T. W. Littlepage of Washington; Mr. J. G. Rush of West Willow, Pa.; Mr. W. N. Roper of Petersburg, Va; Professors Lake and Reed of Washington, Professor Collins of Pennsylvania and others gave of their best information, gathered from years of experience, for the benefit of those presently involved or only engaged in anticipation in the many-sided field of nut culture.

Important Resolutions.

The society placed itself strongly on record in respect to the importance of comprehensive, systematic, well-directed legislative effort, looking towards the control or prevention of the chestnut bark disease. Strong resolutions on this subject were passed, to be forwarded to the departments of agriculture of the Northeastern states and the United States Secretary of Agriculture. Similar action was taken with reference to the hickory bark beetle, which has been causing so much loss in the hickory-growing regions of the Northeast in recent years. Especially virulent outbreaks have been recorded from Pennsylvania and eastern New York in recent months. In the case of New York State, and due to the comprehensive insect and disease control act in force in the state, the society urged the commissioner of agriculture to include this insect among the list of those deemed especially dangerous and calling for definite restrictive measures aiming for control.

The chestnut bark disease was treated very fully by Mr. J. Franklin Collins, special agent of the Pennsylvania Department of Agriculture, and Doctor Reddick of the New York State College of Agriculture. The hickory bark beetle was discussed by Professor Herrick of the Department of Entomology of Cornell, who called attention to the grave possibility that this insect might spread to the cultivated forms of the hickory.

Papers and Discussions.

Among the important papers presented was an exceedingly suggestive one by Mr. T. W. Littlepage of Washington, who has extensive pecan interests in southern Indiana, and who for the past several years has been exploring the bottoms of the Wabash and the Ohio for promising seedling varieties of this splendid type of the hickory. Mr. Littlepage proved quite conclusively by his extensive explorations and by the submission of convincing specimens of fruit gathered from native trees, that there were many seedling varieties highly meritorious and worthy of propagation. Most of these varieties were well filled and of good size, though not approximating the largest of the Southern nuts, of excellent flavor, and possessing fine cracking qualities. This latter characteristic is of great importance, considered from the commercial standpoint. Mr. Littlepage's paper left a distinct impression that pecan culture was not to be confined in the future to the cotton-growing states, but that regions in the North, where the thermometer did not register below the 10 below zero mark were suitable for the cultivation of this splendid native nut.

Propagation.

The subject of the propagation of the hickories, pecans and walnuts was ably discussed by Mr. W. N. Roper, of Petersburg, Virginia. He considered this topic from the standpoint of Northern experience, and showed clearly that methods considered satisfactory and usually successful in the South might not necessarily prove feasible or desirable in the North. The common commercial method of propagating pecans by grafting on the root of the established seedling had not been successful with him, and he was now placing most reliance upon budding by the Patch method at a height of from two to three feet above the ground.

President Morris' address devoted considerable attention to the different strains of the hickories. He has been making a specialty of this group of nuts for the purpose of studying characteristics of tree, blossom and fruit. He has also paid very considerable attention to the subject of methods of propagation. His address, which will be published in full in the transactions of the society, was full of valuable facts, hints and suggestions. Many other interesting papers, including an illustrated address on the Persian walnut, by Professor Lake, a general review of the present condition of nut culture in the Northeast states by Mr. C. A. Reed, nut expert of the Department of Agriculture, nut growing promotions, by Dr. W. C. Deming, were presented, and will appear in the printed report. The membership of the society is increasing, and interest generally widening.

Exhibits.

Exhibits were of two kinds. First, those nuts which were entered in competition for the Morris prizes awarded for valuable new seedlings of native nuts, except chestnuts, and including Persian walnuts. This competition brought out a large number of entries, and the display of shellbarks, shag barks, black walnuts, Persian walnuts, hazels, chinquapins and the like was very extensive. The judges, Messrs. C. A. Reed, Professor Lake and Dr. Morris, had an exceedingly difficult task to select from the large collection the best types. The second group of exhibits comprised those nuts not placed in the competition, but shown for their educational worth. Of these the collections by Messrs. Pomeroy of Lockport, N. Y.; J. C. Rush, West Willow, Pa.; T. W. Littlepage, Washington, and Dr. W. C. Deming were especially meritorious.

The following officers were elected: President, Dr. Robert T. Morris, New York; vice-president, Mr. T. W. Littlepage, Washington; secretary-treasurer, Dr. W. C. Deming, Westchester, N. Y.; executive committee, C. A. Reed, Washington; W. N. Roper, Petersburg, Va.; John Craig, Ithaca, N. Y. One vice-president for each state represented in the membership of the association was chosen, as follows: New York, A. C. Pomeroy, Lockport; Minnesota, Col. J. S. Van Duzee, St. Paul; Indiana, R. L. McCoy, Lake; Ohio, J. H. Dayton, Painesville; Pennsylvania, J. G. Rush, West Willow; Massachusetts, Barnard Holman, Stockbridge.

The society accepted an invitation from Mr. J. G. Rush to hold its next meeting at Lancaster, Pa. This insures an instructive environment, and the members are already looking forward to excursions among the nut orchards of that region.

New York. JOHN CRAIG.

The Martha PEACH

Every fruit grower should have Martha Peach trees. No larger peach on record. Specimens have weighed 17½ ounces. We also have good supply of Apple, Pear, Cherry, other varieties of Peach, Asparagus Roots, Ornamental Trees and Shrubs.

ARTHUR L. NORTON
Nurseryman and Fruit-Grower, Clarksville, Mo.

SELLING PLAN THAT WON

How One Man Solved the Problem of Selling His Products Direct to the Consumer

The past season has been one filled with ups and downs for grower and dealer alike. Growers, as a rule, did not realize the prices for their apples that were anticipated early in the season, in spite of the shrinkage of the crop below early estimates, and buyers have not been able to turn the produce that they bought, or which was consigned to them, at the figures they fully expected.

While it is true that fruit which had been well grown and then well packed sold at good figures, it was placed in so much bad company, that the best prices broke no records for recent years. Poor packing and bad fruit has been largely responsible for the low prices that have prevailed. A correspondent who spent several days on the Chicago market, writes that a great hindrance which many farmers must face in the sale of their fruit "is the poor manner in which much of the good fruit is packed. The magnitude of this fault was very pronounced, as in personally witnessing the opening of many barrels and baskets, we saw many cases of sheer carelessness or ignorance or both, as much of the fruit, though well grown, yet in packing it showed that it had been handled more like cobblestones rather than delicate fruit. Not only was much of the fruit bruised, but the skin was often broken and the juice exuding. Then again, even in well-packed fruit, we noted when the heads were removed from the barrels, that many of the face apples were so pressed against the heads as to leave the imprint of the wood on the fruit. This suggested to us the general use of the corrugated barrel head cushions for all good barrel stock. These are not only cheap, but essential, if we expect to get the top prices for our fruit."

Much of the damage to fruit is not in the least due to the grower's fault, either in his skill as a grower or as a packer. The poor condition of fruit on the market is many times due to the transportation companies that handle the packages. A short time ago a man wrote that on "a recent trip along the line of the Pere Marquette railroad in western Michigan, revealed the fact that at four stations five freight trains were on sidings, 'at rest,' and in each of these trains were numerous cars of fruit; in one of which was two cars of peaches, and this particular train was to lie at rest twelve hours, the law requiring that train crews should rest so many hours at the end of so many hours of service. This is human and right for the train crew, but how about the justice to shippers of perishable goods?"

Circumstances such as this cannot always be foreseen. Sometimes they are the result of an accident, sometimes of carelessness, and sometimes because of insurmountable conditions. When they arise, both dealer and producer must suffer, with the heavy end of the burden usually falling on the grower. The dealers are usually wise enough to keep away from possibilities of this sort, as their business is purely that of selling fruit, and as they know very well that the farmer, as a class, is not a salesman, they let the burden of the loss fall on the producer.

To be a good producer of farm crops and to be also a good salesman are two conditions that rarely ever prevail in the same man. Men are comparatively scarce who have achieved the difficult two-fold success of being farmer and salesman.

"Good salesmanship is an invaluable asset. If one is not so lucky as to be born with the knack of selling his products at a top price, he ought to develop it by serious and persistent effort." In those sections where there is a good, strong and effective co-operative selling association the responsibility of marketing his produce at the topmost prices does not devolve so heavily on each individual grower. But where no association exists, and where independent marketing must be done, the problem of selling the produce is most important.

In the growing of crops, there is little competition between a man and his neighbor, but the competition becomes very strong when those crops are ready for marketing. "In order to reduce this competition to a minimum," writes G. F. Brown, Jr., in the Garden Magazine," we found it necessary to introduce such methods as would commend our products to prospective customers." Mr. Brown is a city man who settled on a farm in the Adirondacks and engaged in truck gardening. Near by his farm was a community where there were numerous summer cottages, occupied by other city people, and Mr. Brown says it was perhaps "our good fortune to cater to a class of people who are used to, and have just appreciation of progressive business methods.

"Farming is a business, and if one is to be a successful business farmer he must conduct his business on strictly business lines. The great quest in the commercial world is to 'find the buyer,' and having found him to retain him as a permanent customer by furnishing reliable goods, by fair treatment and by enterprising methods. Yearly tens of millions are spent to make known the merits of what is produced in the manifold industries that support the race. An army of trained men, keen, foresighted, aggressive, yet suave and diplomatic, is engaged in introducing to the public the products of mills and factories and mines and every conceivable sort of business that engages the efforts of mankind. Examine into the workings of any long established and successful business enterprise and it will be found that the utmost pains is taken to attract people, even to cater to the whims, and to win confidence in the various wares for sale. That concern in any business line honestly using the greatest ingenuity to draw the trade will, other things being equal, forge to the front.

"For us as new-comers to succeed in securing a volume of trade in a short time, it was necessary to adhere closely to the principle enlarged upon above. Plans were made during the winter, long before the opening of the season. It was necessary to make up a trade list, that we might be assured of patronage from the start. To do this inquiries were made of the postmaster, at the village stores, and in casual conversation, for the names of all persons who might be desirable customers, with the out-of-town addresses of all who were non-residents. These names were arranged alphabetically. To each of these was then sent an announcement, stating the nature of the business to be carried on and soliciting his patronage. As replies were received the names were checked on the list, a tentative customers' list, thus being made ready for future use."

This enabled Mr. Brown to find out something of the nature of the trade he could expect, and make an estimate of the kinds of produce it would be necessary for him to supply, and arrange his plans accordingly. When this was done, "the next step in the selling campaign was the issuing of weekly bulletins. This was begun as soon as the earliest vegetables were ready, and was continued throughout the season. The bulletin would be issued every Saturday afternoon, and on it would be listed everything that would be ready for delivery the following week, and any special announcement was included. The bulletins were mailed at such time as they would be in the hands of customers early Monday morning.

"The bulletins were quickly and cheaply made with a duplicating apparatus. One-cent stamped envelopes were ordered in quantities from the

BOOKS FOR THE Farm Library

No home is complete without its library of at least a few good books. The progressive farmer realizes that it is a waste of time to learn through his own experiments, facts which have already been learned and recorded by others in the many good books on agriculture. The following list contains the best of the latest books covering many of the important phases of farming:

GENERAL FARMING

The Book of Alfalfa, F. D. Coburn..$2
The best book on alfalfa growing. Discusses seed and seed selection, cultivation, harvesting, pasturing, alfalfa as a feed stuff, nitro-culture, etc.

Feeding Farm Animals, by Thomas Shaw $2.00
The principles that govern the science and practice of feeding farm animals is treated in this book in a manner that can be most easily understood. A book for the farmer or the student.

Soils, by C. W. Burkett.....$1.25
A fascinating book telling about the soil, its texture and how made; how plants feed; the role that tillage plays; soil inoculation, dry farming, worn out soils.

Corn Culture, by Plumb.....$1.00
This is the best book ever prepared that treats of corn culture from a thoroughly practical application of scientific principles. Should be in the library of every corn grower.

Farm Animals, by E. V. Wilcox..$2.00
A large volume telling how to breed, care for, use and doctor the farm animals such as cows, horses, sheep and swine.

Farm Management, by F. W. Card.$2
An indispensable book for the progressive farmer. Tells about accounts, business, marketing, comparative value of products, buying land, etc. Illustrated.

Cotton, by Burkett & Poe.....$2.00
The only book published that completely covers every side of the cultivation of this great crop.

The Story of the Soil, C. G. Hopkins $1.50
A popular treatise on the soil, pleasingly woven into a little romance. Contains an abundance of scientific data regarding soils.

Meadows and Pastures, by Joseph E. Wing $1.50
The most complete book on the subject. Comprehensive discussion of method to be employed in all sections of the United States to secure permanent sods. Fully describes pasture grasses. Illustrated.

Power and the Plow, by Ellis and Rumley $1.50
The first attempt at a complete scientific statement of the problems arising from the introduction of mechanical power to plowing.

Swine, by Wm. Dietrich $1.50
An up-to-date, practical book on breeding, feeding, housing and managing swine. The best swine book ever published. Illustrated.

Dry Farming, John A. Widtsoe..$1.50
A practical application of scientific facts relating to farming in regions of small rainfall by the foremost authority in the United States.

FRUIT GROWING

Popular Fruit Growing, Samuel B. Green $1.00
A thoroughly practical book treating on the factors of successful fruit-growing, orchard protection, insects injurious to fruit, fungous diseases, and spraying. Illustrated.

Principles of Fruit-Growing, L. H. Bailey $1.50
A complete treatise on the practice of fruit-growing, comprising an inventory of fruits and a full discussion of the tillage, planting and fertilizing fruit lands and the protection of fruit plants from disease, frosts and other dangers.

The Nursery Book, L. H. Bailey.$1.50
A complete guide to the multiplication of plants. A standard work for nurserymen. Revised and enlarged.

American Fruit Culturist, by Thomas $2.50
A standard work on fruit culture, giving descriptions of all the leading varieties of cultivated fruit, together with principles of successful cultivation and marketing.

Bush Fruits, by F. W. Card.....$1.50
The purpose of this book is to furnish reliable descriptions of cultivated varieties and the necessary instructions on the cultivation of bush fruits.

Fruit Harvesting, Storing and Marketing, by F. A. Waugh.....$1.00
A practical guide to the picking, storing, shipping and marketing of fruit evaporating, canning, cold storage, fruit package laws, etc. Illus.

Systematic Pomology, by F. A. Waugh. $1.00
A volume presenting clearly and in detail the whole methods by which fruits are studied, giving a comprehensive treatment of the subject.

The Fruit-Growers Guide-Book, by E. H. Favor $1.00
A guide to the cultivation of orchard fruits, giving method of selecting location, soils, planting, varieties to use, packing, marketing, combatting diseases, etc.

Produce Markets and Marketing, by W. T. Seibels $2.50
The only book ever written on the single subject of marketing farm produce and a discussion of the produce markets; a very readable book, and well illustrated.

GARDENING

The Principles of Vegetable Gardening, by L. H. Bailey.....$1.50
Treats of equipment and capital, making hot-beds, cold-frames, soil and its treatment; seeds; laying out and management of the garden. Discusses treatment of each kind of vegetable.

Vegetable Gardening, by Samuel B. Green $1.00
A manual on the growing of vegetables for home and the market. Well illustrated.

The Forcing Book, L. H. Bailey..$1.25
The most complete treatise on the forcing of crops under glass during the winter. Discusses greenhouses, hot-beds, temperature, light requirements. A book for the winter gardener.

Bean Culture, by Glen C. Sevey..$0.50
A complete treatise on growing beans on a commercial scale. Treats of soils; seed selection; insects and diseases; harvesting methods; marketing, garden beans.

Tomato Culture, Will W. Tracy..$0.50
Complete treatise on tomato growing. History of the tomato; soils for maximum crop; hot-beds and cold-frames; starting the plants; cultivating; staking; production for canning, etc.

Celery Culture, W. R. Beattie...$0.50
A practical treatise of the principles involved in the production of celery for home use and for market, including the selection of soil, production of plants, cultivation, control of insects, marketing, etc.

Home Vegetable Gardening, by F. F. Rockwell $1.00
A book which tells what the average man wants to know in order to raise a successful crop of vegetables in his garden. A book that will answer every question and prove a reference of unfailing value.

Manual of Gardening, L. H. Bailey. $2
A complete manual on planning and planting the flower, fruit and vegetable garden, and decorating the home grounds.

The Landscape Garden Book, by Grace Tabor $2.00
This book shows just how to plan the home grounds; how to plant the trees so that they will give the most value in shade and beauty, how to group shrubs, etc. Beautifully illustrated.

POULTRY

How to Keep Hens for Profit, by C. S. Valentine $1.50
A practical and popular book containing a great amount of valuable information dealing with profitable poultry culture.

Capons for Profit, Cyphers series.$0.50
Don't Kill the Laying Hen, Potter 1.00
Duck Culture, Rankin..... .50
How We Make Ducks Pay, Weber Bros. ..... .50
How to Build Poultry Houses.... .50
Winter Eggs; How to Get Them, Boyer ..... .25
Money in Broilers and Squabs, Boyer ..... .50
Indian Runner Ducks, Valentine. .50
Ducks and Geese ..... .75
Eggs and Egg Farms ..... .50
The Leghorns 1.00
The Orpingtons ..... .75
Rhodes Island Reds ..... .75
The Plymouth Rocks 1.00
The Wyandottes 1.00
Hamburg Book ..... .50
Minorcas, Northrup ..... .50
Turkeys, Their Care and Management ..... .75

MISCELLANEOUS

A B C & X Y Z of Bee Culture..$1.50
Cook's Manual of the Apiary.... 1.30
How to Keep Bees 1.20
The Honey Makers 1.60
The Townsend Bee Book ..... .50
A B C of Potato Culture ..... .85
Home Water Works, Lynde..... .85
Audel's Answers on Automobiles. 1.50
Self Propelled Vehicles, Homan.. 2.00
Audel's Gas Engine Manual..... 2.00
The Farm and Garden Rule Book, Bailey 2.00
Business Organization, Sparling.. 1.25
Text Book of Entomology, Packard 4.50

Address Your Order to Book Department

The Fruit-Grower, St. Joseph, Mo.

postoffice with the card printed in the corner, and with each bulletin would be sent a postal card addressed to Pleasant View farm to facilitate the mailing of orders.

"When, after several weeks, by sending out these bulletins, we had succeeded to a certain extent in directing trade our way, then a public announcement was inserted in the local newspaper. It was intended in this way to reach all those who had not received the bulletins. In addition to this advertising, wherever it was possible, personal interviews would be had with persons who would be desirable customers.

"A distribution sheet was made out on which was listed the names of the persons who were to be supplied on the next trip to the city, and the list of produce to be delivered to each. As soon as an order was received it was entered on this sheet and the items arranged by quantities in the different columns for the various kinds of articles. This facilitated the gathering and preparing the various articles for delivery. It was thus known just how many dressed chickens were to be prepared, how many bunches of celery, beets, etc.; how many eggs were to go to each customer.

"Early in the morning on delivery day the fire had been started in the stove in the workroom and three or four pails of water were put on to boil. A hose from a tap in the garden kept several pails full of cold water for washing vegetables. As the latter were brought in from the garden they would be thoroughly cleaned in water and set aside on a general supply table. Then the chickens, killed by cutting off the heads, were deposited in a basket by the stove. As each fowl was taken from the basket it was dipped into a pail of boiling water, to render the plucking easier. After immersion, the fowls were plucked clean, and then turned over to another to to be dressed. The latter would deposit the dressed fowl in a tub of clean water, to be washed later and have all of the pinfeathers removed.

"The vegetables on each order were carefully wrapped in white manilla paper and tied, each kind in a separate package, and the package marked with name and set over on the delivery shelves. After decorating each fowl with a piece of parsley, it was wrapped first in paraffine paper, then in manilla wrapping paper, and set on the delivery shelves. When all of the orders were complete and checked off the sheet, the delivery wagon was loaded in accordance with the delivery route for the day.

"Everything reasonable was done for the convenience of the customers. The neat, even, attractive way of doing up the orders appealed at once to housekeepers. The methods became an object lesson to neighbors when they found that cityites had stepped in and secured the cream of the trade in one season. Yet nothing underhanded was done. Simple business methods were employed and the constant effort was to please the buyer."

Such a plan as this could be followed on hundreds, yes thousands, of farms in every state in the country. While the details would have to be varied in each individual case, yet the principles under which Mr. Brown carried on his business could be modified to cover the needs of every producer. They were simple business principles. He sold his products under the same principles that your shoe dealer sells you a pair of shoes, or that your harness maker sells you a new set of harness.

A man told us a few days ago that he had no fruit on his orchard this year, and that he was glad he did not, as they could not have been sold. We disagree with him, for they could have been sold, if the right principles of salesmanship had been employed, and could have been sold at a profit. The money we make out of our crops comes out of the money we receive after the expenses have been paid. Where a carefully planned arrangement for selling farm produce is followed, the profit piles up faster than when a crop is sold at the price the first buyer offers.

Fire Blight of Apple and Pear.

One of the diseases of apple, pear and quince trees, about which there is a great deal of inquiry, is that of the fire blight, a disease which appears usually early in the spring and causes the foliage to die very suddenly. This disease is by far the most destructive to pears and quinces, but on some varieties of apples, and in some seasons it is exceedingly destructive, killing large numbers of the small branches. On the pear, blight may kill the entire tree within the space of one or two summers, but on the apple it does not result so disastrously, as a rule.

Fire blight is caused by a minute organism or germ, a species of bacteria, so minute as to be entirely invisible except by the aid of the most powerful microscope. These germs gain entrance into the growing part of the tree, such as the blossoms or young shoots, where they multiply rapidly, feeding upon the tissues and secreting poisonous substances, which kill the affected parts.

These bacteria do not travel through the sap channels of the tree, but work between the cells of the bark, killing the tissue as they go. On account of their minute size they can be carried from tree to tree, and from twig to twig by various agencies, such as insects, birds, wind or even pruning tools. And wherever a flourishing colony of blight germs exists, it will generally be observed that the bark has cracked open slightly and that a syrup-like ooze is on the surface. This is to be observed mostly early in the summer, following the blooming period and while the growing parts of the tree are soft. This ooze is made up of masses of the germs, held together in a sticky syrup which they possibly secrete, and which is greedily sipped by insects.

In this way the insects get the germs on the beaks and feet and carry them to other parts of the plant. When these germs are inserted into a blossom, the conditions are ideal for the germination and spread of the disease, and the greater distribution takes place at that time. When the bacteria become established in a blossom of a pear tree, they multiply very rapidly, and the diseased or blighted area extends down the twig, into the branch and finally into the trunk of the tree. With the advancement of the season, the increase of the disease lessens, although it remains alive in the bark and wood of the affected areas, and reappears next season to extend the destruction.

On account of its nature, that is, of the disease being entirely within the tree, the usual methods of spraying, as for fungous diseases, are of no avail. It has been found by carefully made experiments, that the only effective means of controlling blight is by keeping the disease pruned out of the trees. The pruning tools hold the key to the situation, and by their judicious use fire blight in the various kinds of plants which it attacks can be kept in control.

The trees need to be gone over very carefully early in the spring, and every trace of the disease removed. The blighted areas will be easily detected at that time, as the bark will be discolored and sunken below the general surface. All limbs showing blight must be cut out, and the cut made several inches below the lowest sign of the disease. It is very necessary to make these cuts at a distance below the lowest sign of infection, as the germs will have advanced through the bark some little distance below the lowest indication on the surface. Then after each cut is made, further precautions need to be taken to prevent carrying any stray germs that might have lodged on the pruning tools to some other limb, thereby spreading the blight. To guard against this possibility, the pruning tools must be sterilized after making each cut. Do this by dipping the saw, shears, knife or whatever is used, in a solution of bichloride of mercury having a strength of one part of the bichloride to one-thousand parts water. Your druggist can supply you with this material in little tablets, and a dime's worth will make up all of the solution you will need for a large amount of pruning.

The precaution needs to be observed in using this bichloride solution that it does not get into one's mouth, as it is very poisonous. It will not hurt the hands. It will even be an advantage to wet the surface of the wound with this solution, and later, give it a coat of paint, especially where the wound is large.

"The Proof of the Pudding."

In discussing the subject of "mechanical helps" in the modern home, Helen Louise Johnson, director of Good Housekeeping Institute, makes the following timely and practical comment upon house-cleaning devices in general:

"For the housewife to whom the selection of these things is left, there has been far too little help. She has been at the mercy of the specious seller of good, bad and indifferent articles, and having been misled again and again, has become suspicious and questions everything."

The remedy, however, is made simply by applying the old adage, "The proof of the pudding is in the eating thereof," and that is made easy and sure by a free trial test, such as is offered by the manufacturers of the "Easy" Hand-Power Vacuum Cleaner. On request, they will send, at their own cost and risk, the cleaner. That plan eliminates all the doubt of being "misled" and leaves the housewife free to use her own judgment in the selection. The "Easy" does all that the most expensive cleaner can do, easily and thoroughly, eating up the dust and dirt from floors, walls, ceilings; cleaning every nook and corner of dust and germs; freshening the carpets and rugs; and so easily that a child can manage it. Where gasoline or electricity are available, the Motor Cleaner makes quick work possible on a large scale. A line to Dodge & Zuill, Syracuse, New York, will bring full particulars.

Minnesota Fruit Growers' Plan to Organize.

At the meeting of the Minnesota State Horticultural Society, recently closed, a great deal of discussion regarding improved methods of grading, packing and marketing was entertained. Growing out of this, a meeting was called on the last day of the session to consider plans for organization. It was decided to organize an association of fruit growers. The idea in the minds of the men in the meeting was to have this a sort of federation of local associations already formed in the state. It was further brought out that the association should also help isolated growers, for there are as yet but few local growers' associations in the state. The principal object should be to connect the growers in certain parts of the state with the markets which lie in the extreme parts of the state and in the states adjoining. A committee of five persons was appointed to draw up a constitution and by-laws and submit them for ratification. Some thirty influential growers of the state signified their willingness to back such an organization. A meeting will be called in the near future to adopt a constitution.

To Improve Country Life Conditions.

At the thirty-first annual session of the Farmers' National Congress, held at Columbus, Ohio, Mr. Hays, assistant secretary of agriculture, suggested that the congress reorganize into a national country life federation. The organization proposed would be made up of delegates from state federations and farmers' associations, together with representatives of colleges and experiment stations. It would be a general clearing house for campaigns to improve rural conditions.

There is much to commend Secretary Hays' proposition, for there are a thousand and one things which farmers should discuss. Not partisan politics, of course, but some of the reforms which need to be brought about can be secured by working along political lines.

Rules for Use of Fertilizers.

1. Nitrogen (or "ammonia") encourages strong leaf, vine and bush growth.

2. Potash makes firm tuber, bulb and fiber.

3. Phosphoric acid makes blooms "set," and seeds and seed pods form abundantly.

4. If the wild growth on your farm is profuse and your tomatoes and melon vines run to leaf, your soil is rich in nitrogen.

5. If trees do not thrive, onions seem soggy and tomato vines lack sturdiness of stalk, the soil needs potash.

6. If your tomatoes, melons, grain and cotton fail to "set" plenty of seed and fruit, phosphoric acid is called for.

7. If you expect to take from your land a crop rich in leaf, as lettuce, increase the proportion of nitrogen in your fertilizer.

8. If potatoes or onions are desired, provide plenty of potash.

9. If abundant corn, wheat, cotton bolls, melons, peaches, strawberries or tomatoes are wanted, see to the phosphoric acid.—Exchange.

Horticultural Reports Next Month

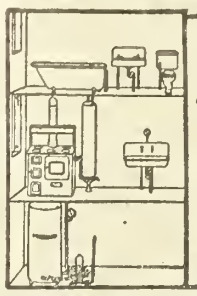
The February issue of The Fruit-Grower will contain reports of various horticultural meetings. Some splendid programs have been arranged for these various meetings, and the February Fruit-Grower will contain full reports of many of them.

GRAPEFRUIT
Biggest Payer of all Fruits

FRUIT GROWER! Have you ever looked into the profits of GRAPEFRUIT? Do you know that by raising GRAPEFRUIT you can have an income of TEN THOUSAND a year, and in five years, an estate worth $10,000 from 10 acres?—Did you get that? $10,000 from 10 acres—a space no larger than your home site and barnyard at home. We will convince you that you can do this at WINTER HAVEN, FLORIDA, if you will accompany us on our next excursion. We have 8,000 acres of developed groves to show you. Go with us in our SPECIAL CAR and talk with the growers themselves. Meals and berth, $2 per day.

Winter Haven the highest and healthiest point in all of Florida—only 40 miles east of Tampa. No frosts, snows, blizzards, or mud. Cooler in summer and warmer in winter than at home. Remember, First Come, First Served, so don't put this off, but write us today—for particulars.

Winter Haven Farms Company
264 NEW YORK LIFE BLDG., KANSAS CITY, MO.



Water Works $37.80
FOR
Country Homes
Sold Direct at Manufacturer's Prices
Also Full Line of
PLUMBING GOODS
Pumps, Windmills, Etc.
Send for Our Valuable Book. IT IS FREE.
Mo. W. & S. Supply Co.
925 S. 6th St., St. Joseph, Mo.

A Start in Strawberries

for $1.50, postpaid. Send us $1.50 and we will send you 100 of the best Strawberry Plants for the Central Mississippi Valley. They are drouth-resisting and will bear when all others fail. Also send for our free booklet, "Strawberries for the Home and How to Raise Them." Order early to avoid the rush.
DODGE, BLACKLY & CO., CUBA, MISSOURI

Grimes Golden Scions FOR SALE
S. E. CRAWFORD Proctorville, Ohio

Secure and Profitable
These essentials of a good Investment are combined in our
7% First Mortgage Gold Bonds
Paying Interest of 7%
payable every six months in coupons attached, which can be collected through your local bank. Issued in denomination of $100, and fully protected by the entire assets of the company. These bonds are dated July 1, 1907, and run ten years.
Write for full details and booklet.
THE FRUIT-GROWER
St. Joseph, Missouri
Capital Stock, $100,000.00, Fully Paid

Our Classified Advertising Department

For advertisements in this department, of not less than twenty-five words each, in which no display type is used, we make a special rate of FOUR CENTS PER WORD, EACH INSERTION. If several different advertisements are inserted in the same issue, the charge will be $1.00 for each ad, no matter how small. The first four words of each ad will be set in black type. Every initial and number to count as one word. This department is for the benefit of our subscribers who have anything to sell, including farm lands, fruit farms, dogs, ponies, poultry and eggs, live stock, plants, shrubs, vines, etc. All advertisements for this department must be PAID FOR IN ADVANCE. Count the number of words you send, and remit at rate of 4 cents per word, stamps, currency or money order. This is considerably less than our display rate, and offers a splendid opportunity to reach our readers at a low figure. Send a trial advertisement with remittance at rate of 4c a word. THE FRUIT-GROWER, St. Joseph, Mo.

POULTRY DEPARTMENT

Anconas

Sheppard's Famous Anconas. The world's best. First at world's greatest shows, including London, England, Madison Square and Cleveland. Greatest egg record. Catalogue free. Cecil Sheppard, President International Ancona Club, Berea, Ohio.

Anconas—Stock, eggs. Three pens. Show, trapnested egg strain and utility. Reasonable prices on application. Honest complaints made right. M. E. Wells Brewster, Ohio.

Prize Winning Mottled Anconas. Famous winter layers. Eggs, $1.50 to $3.00. Baby chicks $2.50 per dozen up. Write for Circular. W. H. Hardman, Frankfort, Kansas.

Single-Comb Ancona Cockerels for sale. Large, well-matured birds. Have good combs and yellow or mottled legs. Prices very reasonable. John B. Firestone, Spencer, Ohio.

Ancona Cockerels of Quality—Have a choice lot. Write me stating kind of bird wanted. J. B. Firestone, Spencer, Ohio.

Andalusians

Blue Andalusians. Winners at the leading shows for fifteen years. Great layers—and the prettiest of fowls. Stock and Eggs. F. L. Garnett, Nottingham, Ohio.

Buckeyes

Buckeyes—Oark red, small "pea" combs, small wattles, long backs, broad shoulders—ideal winter layers. Eggs and baby chicks; silver cup winners, Missouri State Show. Highland Poultry Farm, Box F, Nevada, Missouri.

Cornish

Forest City Cornish Yards, Shawnee, Okla. Home of World Beater Dark Cornish and White Indian Runner Ducks. Stock and eggs for sale. Mating list free.

Dominiques

The American Dominique is the only hen that will lay prolificly for fourteen years. Eggs 14 for $2. Mrs. A. L. Carson, 1425 Main St., Evanston, Ill.

English Red Caps

English Red Caps—Z. T. Turner, Eleroy, Ill., importers and breeders of America's best Red Caps. Catalogue free. Five other breeds. Exhibition quality.

Faverolles

French Salmon Faverolles are fastest growers; best winter layers, and are unequalled for broilers and market fowls. A. Essig, 2460 East 9th street, Cleveland, Ohio. Circular free.

Hamburgs

Silver-Spangled Hamburgs — Winners at leading shows. Many fine utility and exhibition cockerels. Stock and eggs for sale. Satisfaction guaranteed. Frank Heilman, North Judson, Ind.

Silver-Spangled Hamburgs, Partridge Plymouth Rocks, Houdans, Light Brahmas, highest quality, lowest prices. Winners and breeders for sale. Eggs in season. Will Clark, Sullivan, Ohio.

Houdans

Houdans—Oependable exhibition and utility cockerels for sale. Eggs from selected matings after March 1st; $2.00, 15; $3.50, 30. Satisfaction assured. Elm Park Place, Lawrence, Kan. W. L. Bullene.

Langshans—Black

Our Black Langshans are the big everlasting laying kind. Prize winners too. You need them. Choice stock, low prices. Neville Poultry Farms, Kewanee, Ill.

Prize-winning Black Langshans, Buff Orpingtons. Eggs, $1.50 per 15. Fine cockerels for sale cheap. Jno. Cole, M. D., Williamsfield, Knox County, Illinois.

Leghorns

Winter Laying Leghorns. Bred to "Shell Out" eggs, and do it. Baby chicks, eggs, stock. Catalogue free. O. C. Frantz, 85 South, Rocky Ford, Colo.

Leghorns—Brown

Eggs for sale. Single-Comb Brown Leghorn pure-bred stock. Free range from a good laying strain. Incubator eggs in season, 120 eggs for $5, 260 for $10; a setting of 15 eggs, 75c. Fred Huecker, Route 1, Bunceton, Mo.

Lamson's Rose-Comb Brown Leghorns are bred to lay. Madison Square and other big show winners. Stock, eggs and chicks. Circular free. H. Lamson, Box L, Cameron, N. Y.

S. C. Brown Leghorns. High grade cockerels and hens. Heavy laying strain, fine birds, $1.00. If in need, write us. Crow Creek Poultry Farm, Washburn, Illinois.

Single-Comb Brown Leghorns. Champions of the entire West. Over 300 prizes won in 22 years. Circular free C. F. Lang, LaCrosse, Wis. Box F.

S. C. B. Leghorns—Bred exclusively for 25 years. Have as good as money will buy. Try some of my stock. W. W. Egbert, Millersburg, Ill.

Leghorns—Buff

For Sale—S. C. Buff Leghorns. Some fine show birds. A lot of magnificent cockerels and pullets, all prices. My old birds are select matings from the best breeders in America. Mrs. Anna H. Baldwin, Keswick, Ia.

Green's Golden Feather strain Buff Leghorns, single rose. Best blood produced; winners everywhere. All scored by Pierce. Photos, feathers, winninga free. Horton Green, Colchester, Ill.

Choice Single-Comb Buff Leghorns, $1.25 each, $3.25 per trio. Indian Runner drakes, $1.25. Eggs in season, from prize winnere. Hillcrest Farm, Blackwater, Mo.

Golden Buff Leghorns—250-egg record, trap nest strain. Fertile eggs and stock. J. L. Helpman, Freedom Station, Ohio.

Silver Leghorns

Silver Leghorns a specialty; 11 years a breeder of this beautiful variety. Send for my free circular. Sylvester Shirley, Rt. 3, Port Clinton, Ohio.

Leghorns—White

S. C. White Leghorns—One thousand White Leghorn utility cockerels from greatest exhibition and egg producing strains in America. No culls or disqualified birds in lot; $1.25 each, five for $6.00 or ten for $10.00. The best birds on earth to cross with your flock and improve the egg producing qualities. Don't overlook these low prices for really superior stock. Twin Brooks Farm, R. D. 7, Springfield (Lawrenceville), Ohio.

The famous laying and paying 240-egg strain. Single Comb White Leghorns, and Barred Rocks. 300 yearlinga as pullets paid a profit of $2.50 each, from September 5, 1910 to September 23, 1911, in market egg records. Hatching eggs and baby chicks, baby chicks hatched in our candle mammoth incubator; season's capacity 50,000 chicks. Send for booklet. Lilly White Poultry Farm, Grand Rapids, Mich.

Single-Comb White Leghorns exclusively. D. W. Young's strain, finest in the world. Greatest layers, all on free farm range; 4,000 breeders. Eggs for hatching now ready at $6 per 100, in any quantity. Baby chicks ready in March. My great book, "Profits in Poultry Keeping Solved," will start you right. Price, $1.; circular and testimonials free. Edgar Briggs, Box 44, Pleasant Valley, N. Y.

Single-Comb White Leghorns—Our famous "Weja" strain. Barred Rocks, Ringlet strain. Cocks, cockerels, hens and pullets for sale. Booking orders for baby chicks, 10 cents each. Our customers return year after year, which is proof conclusive. Our stock pleases. Peerless Poultry Farm, Kenton, Ohio.

Blue Ribbon Winners, Chicago, St. Louis, Indianapolis. Rose-Comb white Leghorns. White Wyandottes; Partridge Wyandottes. Stock for sale. Eggs in season. Max Fries, Rural Route, Warsaw, Indiana.

Our big egg book tells all about our 2,000 laying big egg strain S. C. White Leghorns. The egg and what it should be. It is especially interesting to beginners. It's free. Ridge Egg Farm, R. F. D., West Nyack, N. Y.

S. C. White Leghorns, Young & Wyckoff strains. Five hundred yearling hens and 500 April-hatched pullets for sale at a bargain prices. Satisfaction guaranteed. K. I. Miller, Box 53, Lancaster, Mo.

Empire State Single-Comb White Leghorns. Prize winners and heavy layers. Trios $5.00. Eggs for hatching $1.00 for 15. $5.00 per 100. Circular free. C. H. Zimmer, Weedsport, N. Y.

Single-Comb White Leghorns—Winners at leading shows for 28 years. Choice stock for sale. Eggs in season. Write your wants. J. H. Kollmeyer, Quincy Heights Poultry Farm, Quincy, Ill.

Single-Comb White Leghorns; large plant, large fowls, large eggs. Stock for sale; eggs for hatching, baby chicks in season. Catalog. Fowler Egg Farm, Fowler, Colorado.

Ozark Strain White Leghorns; great layers, great beauties. Send for catalog, its different. Eggs of quality for incubator or hen. F. S. Newcomb, St. James, Mo.

Single Comb White Leghorns. Winners of the Blue and Red. Baby Chicks. Eggs for hatching, any number. Yarmond Poultry Farm, Dept. F. Cranford, N. J.

Conradt's Single-Comb White Leghorns are great egg producers of large white-shelled eggs. Have 100 choice for sale. C. G. Conradt, Ft. Madison, Iowa.

Single-Comb White Leghorn Winter Laying strain. Baby chicks a specialty. make your wants known. J. A. Hochstadter, Rocky Ford, Colo.

Minorcas—Black

Single and Rose-Comb Black Minorcas. Single and Rose-Comb Reds. Eggs, stock and baby chicks, from Quincy and Campoint, Ill., show winners. South Side Poultry Yards, 601 Jackson St., Quincy, Ill.

Minorcas—White

Rose and Single-Comb White Minorcas. Choice, prize winning stock. 15 eggs, $2.00. Booking orders now. Charles M. Palmer, Nassau, N. Y.

Orpingtons—Black

Black Orpingtons. Davis Black Orpingtons lead, others follow. A few extra bargains in stock for beginners. Exhibition birds a specialty. S. H. Davis, Box N, Lansing, Michigan.

Schuman Single-Comb Black Orpington. Best of all winter layers. Scoring as high as 94½. Winners wherever they show. Eggs in season. $2.50 for 15. Ed. J. Schuman, Neosho, Wis.

Buff Orpingtons

Early Bird Buff Orpington Farm. Orpingtons that are Buff. Eggs that will hatch. Always a cock for sale. Dr. W. I. Griffith, Fort Scott, Kansas.

Orpingtons—White

Crystal White Orpingtons from high-scoring pen laying 63 per cent. Five-months-old pullets averaged 53 per cent. A few choice cockerels and pullets. Satisfaction guaranteed. Eggs, $2.50 for 15. Marion Stevenson, 2712 Pine street, St. Louis, Mo.

Kellerstrass and Jackson Strain of Crystal White Orpingtons. Eggs for hatching, $2.50, $5.00 and $8.00 for settings, of 15. All pens are of excellent stock. Eggs at $8.00 are from first prize winners. Mrs. J. N. Byrd, Branchville, S. C.

Kellerstrass Crystal White Orpingtons, single comb, 75 fine large pullets for sale. Price $5 each. I have no culls. Eggs from five fine pens at $3 15, $5 30, $7 45. Booking orders for January and February. James A. Driggs, Liberty, Ind.

Kellerstrass Crystal White Orpingtons direct. Eggs from a $70 pen, 1911 birds, $3 for 15; others, $2 and $1.50. Hen-hatched, brooder-broke chicks, 20c to 30c each. Wardwell Poultry Yards, Grant Ave., Rutland, Vermont.

Kellerstrass Crystal White Orpingtons. Some prize winners. Also Reds and Minorcas. Standard bred. Eggs, $1.50 to $5 per 15. Life member American Poultry Association. Prof. F. H. Jackson, Middlebury Center, Pa.

Single-Comb White Orpingtons, Kellerstrass strain. We are booking eggs for early delivery. Our birds are winners at the fall shows this year. Stock for sale at reasonable prices. Chas. McClure, Tremonton, Utah.

White Orpingtons, Kellerstrass strain. Two hundred fine yearling hens and March and April-hatched pullets for sale at bargain prices. Satisfaction guaranteed. K. I. Miller, Box 25, Lancaster, Mo.

Kellerstrass Crystal White Orpington cockerels; few, $3 to $5. Parent stock direct from Kellerstrass, $30 mating. Eggs, $3 to $5 per 15. W. H. Briner, 1528 Lawn, Kansas City, Mo.

Kellerstrass Crystal White Orpingtons; farm raised, hen-hatched cockerels and pullets, sold under guarantee at reasonable prices. Egg orders booked. Harvey Brown, Highmore, S. D.

White Orpingtons of quality. Kellerstrass strain direct. Blue-ribbon winners. Utility eggs, 15 $1, 100 $6. Circular free. Satisfaction guaranteed. J. H. Keefer, Millersburg, Pa.

Kellerstrass Crystal White Orpington and Single-Comb Rhode Island Red cockerels, bred from prize-winning stock. Quality and prices right. G. D. Leggett, Carthage, Mo.

Orpingtons—Crystal White (Kellerstrass). The big layers of quality. Breed only one kind, stock and eggs. Send for illustrated catalogue. Crystal Poultry Yards, Fredericktown, Mo.

Kellerstrass White Orpington cockerels and eggs. Peggy and 221 egg strains $5.00. Utility Strain $3.00 per 13 eggs. L. Lewis, 607 No. Fountain Ave., Springfield, Ohio.

Orpingtons—All single-comb varieties. Won 120 prizes at three state shows. Special bargains in pens, trios and cockerels. Boomgaarns Farms, Box F, Humboldt, Nebraska.

Extra fine Single-Comb White Orpingtons. Early hatched. Fullets and cockerels. Reasonable prices. Write your wants. Granite State Poultry Yards, Box 52, Nashua, N. H.

Kellerstrass Crystal White Orpingtons. I have some fine pens, farm-reared stock. Eggs in season. Prices right. Satisfaction guaranteed. Frank F. Peck, Bainbridge, N. Y.

Why Kellerstrass White Orpingtons? See my unique booklets. Five peerless breeding pens, scoring 94 to 96 1-4. Fine pullets for sale. W. C. Snyder, Bunceton, Mo.

Kellerstrass and Jackson White Orpingtons. Direct blue ribbon winners, $5; others $2 and $3 setting. Black Orpingtons, $2 a setting. Henry Fisse, Jr., Kokomo, Ind.

Quality White Orpingtons. Win every year. Male birds, $3.00 up. Eggs reasonable in season. Whatever you need we have it. C. Colby, Hillsboro, Ill.

For Sale—Single Comb White and Buff Orpingtons. Cocks, cockerels and pullets. Eggs and baby chicks in season. H. E. Poseley, Stewart, Minn.

Single-Comb White Orpingtons of the better sort. Won first honors at the great Illinois state fair three years in succession. Troy Medaris, Bement, Ill.

Kellerstrass Crystal White Orpingtons. Eggs $2 per 15 up. I have stock from eggs bought of Kellerstrass at $2 each. F. R. Brill, Hampshire, Ill. Box 70.

White Orpington trios, $7.50; pens, $10. Cockerels from $3 upwards. Now is the time to order from Robert Broeker, Nevada, Mo.

Single Comb White Orpington eggs for sale, $3.00 to $5.00 per 15. Mrs. Chas. E. Huested, Nassau, Rens Co., Box 84, N. Y.

Kellerstrass Crystal White Orpington cockerels, $2.50 each; eggs, $2 per 15, or $6 for 50. Robert C. Boss, Route 9, La Porte, Ind.

Plymouth Rocks—Barred

Barred Rocks, bred to lay and do lay. Healthy, vigorous stock. No cull matings. Every bird a producer. Eggs for hatching 15, $1.00; 50, $3.00; 100, $5.50. Hens and Pullets $1.50 to $2.00 each. The Fowlers, Box 264, Youngstown, Ohio.

150 Barred Rock cockerels. Bred from best stock. Big, rangy fellows, that will do you good. Mammoth Bronze turkeys, Giant Jumbo King strain, some fine ones. Italian bees and queens; great workers. Write C. Henry Clymer, Bertram, Iowa.

Barred Plymouth Rocks. 50 Barred Rock cockerels from my best pen, headed by Jumbo, Jr. Jumbo has never failed to win in any show room. Satisfaction guaranteed. Don't miss this bargain. Order today. $5.00 each. Eggs, $2.00 for 15. E. H. Wegener, Red Bud, Illinois.

"Ringlets," Ringleys "Ringlets." Rocks that lay and win. Narrow bars long, deep bodies, yellow legs. Cockerels for breeders. Satisfaction guaranteed. Order Eggs. Harry Welch, Rt, 49, Schenectady, N. Y.

Barred Rocks—Thompson, Hawkins and Bradley strains. Madison Square winners. Shipped on trial, "approval," or C. O. D. Pullets and cockerels $1 each. Mrs. Edith Chelton, Landonville, Maryland.

Thompson's Imperial Ringlets, Barred Rocks exclusively. Heavy winter layers; eggs furnished January and February, $2 per 15. Young and old stock for sale. W. F. Wright, Sr., Spirit Lake, Iowa.

Congdon's Barred Rocks, bred for utility and beauty. $3,000 invested; 146-acre farm; 1,000 birds for sale. Eggs in season. Write your wants. Booklet free. W. A. Congdon, Box A, Waterman, Illinois.

Ringlet Barred Plymouth Rocks, hatching eggs (both matings). Day-old chicks. Mating list free; infertile eggs replaced. A. W. Kopfstein, 1068 E. 79 St., Cleveland, Ohio.

Barred Rocks, Bradley strain. Prize winners. Cockerels, $1 to $5. 15 eggs $1.50, 100 $3.50. Crystal White Orpingtons, Duroc Jerseys. F. F. Wood, Wamego, Kan.

Coons' Barred Rocks, won three firsts, two seasons. Special five entries, Catskill, December, 1911. Stock and eggs for sale. Frederick Coons, Greendale, N. Y.

Twenty-five Barred Rock cockerels go at $2.50 each. Large fellows; shipped on approval. I won Iowa state cup year 1910. W. E. Cowan, Waterloo, Iowa.

Barred Rocks. If you want good ones, let me show you what I can do. Breeder, exhibitor and judge 22 years. Amil Burkman, Roscoe, Ills.

For Sale—Standard bred Barred Rocks. Thompson and Bradley strain. Show birds or breeders. write me your wants. G. M. King, Route 1, York, Pa.

Barred Rocks, Ringlet strain. 100 large, husky cockerels for sale at prices that will move them. Also some good hens and pullets. K. I. Miller, Box 5, Lancaster, Mo.

Barred Plymouth Rock cockerels, $2. Pullets and hens, $1. Prize-winning and good laying strain. Eggs, setting $2. Geo. L. Spitze, Warsaw, Ill.

Barred Plymouth Rocks—Eggs for sale. Are you looking for bred-to-lay Rocks? Write at once for mating list. H. A. Caldwell, Canton, Ill.

Ringlet Barred Rock eggs, bred from E. B. Thompsons direct; 13, $1; 26, $1.75; 50, $3; 100 lots, $5. E. H. Barden, North East, Pa.

Barred Rocks of Quality, Jersey cattle. Winners at pail and show ring. Stock for sale. Jno. F. Bruns, Box F, Concordia, Mo.

Plymouth Rocks—Buff

Buff Rocks Eighteen years exclusively. More prizes, six consecutive years, New York State Fair, than all competitors. Stock for sale. Eggs prize mating. Three dollars. Edgewood Farm, Ballston Lake, N. Y.

Buff Rocks, winners wherever shown, priced right, and your money back if you are not pleased. That means a square deal. Circulars and show record free. E. A. Meyers, Route 9, Mt. Sterling, Ill.

Prize-Winning Buff Plymouth Rock cockerels and pullets for sale. Good breeding and extra fine individuals. Prices reasonable. Orlin Stephens, Route 3, Hamburg, Iowa.

Buff Rocks, good color and shape. Farm raised; vigorous. Stock at reasonable prices. Eggs from select matings, $2.00 per 15. C. D. Powell, Vermillion, Ohio.

Plymouth Rocks—White

White Rocks (Fishel strain). Beautiful and profitable. Fine layers. Snow-white, farm raised, vigorous cockerels, $1.50 to $3. Satisfaction guaranteed. W. H. Dougherty, Sellersburg, Ind.

Polish—Black

White-Crested Black Polish. Z. T. Turner, Eleroy, Ill., breeders of World's Fair White-Crested Black Polish. No better strain. Catalogue free. Five other exhibition breeds.

Rhode Island Reds

Rose-Comb Rhode Island Reds. American Beauty strain. Most popular and practical fowl for farmer and fancier. It's no gamble to give mine a trial. My winnings free for the asking. Prize stock $2, $3, $5 per 15. Utility, $1.50. Address A. V. Davis, Ridgefield, Conn.

Red Quill Rhode Island Reds will improve your flock, by giving you large, vigorous birds, easy to raise, quick growers, great layers. None better. Large, vigorous cockerels, brilliant red, either comb, $2.00 each. Cary's Farms, Trimble, Ohio.

Rose-Comb Rhode Island Reds. Fine utility cockerels, $1.50, $2.50. Parent stock direct from Cornish. Fine layers. White Holland turkey cockerels, $5, from first prize stock. Chicago and Indianapolis. Mrs. Geo. Shepard, Goodland, Ind.

Rose-Comb Rhode Island Red cockerels of the Kaufman-Windheim strain. Also white and fawn Indian Runner ducks of the Sawyer strain. Prices reasonable if taken soon. Mrs. W. S. Hamilton, Clarksdale, Mo.

Rose-Comb Rhode Island Reds exclusively. Eggs from high-scoring and bred-to-lay stock (Tuttle strain) $1.50 for 15 eggs, $2.50 for 30. Orders booked now for later shipment. A. D. Krebill, Donnellson, Iowa.

I have for sale a nice lot of Single-Comb Rhode Island Red cockerels. Remarkably free from shafting and entirely free from white in wings or tail. Price $1.50 to $2.50. Wm. F. Hoppe, Waddams Grove, Ill.

America's Heaviest Laying Reds. Large, vigorous, pedigreed breeders. Records from 200 to 284, in single, and 291 in rose-comb. Extras to cover infertility. Charles Sweet, Route 4, Swanson, Maryland.

Single-Comb Rhode Islands. Eggs, $2.00 and $3.00 per 15. From beautiful stock. Sale Cocks and Cockerels. H. V. Reynolds, Manager. Peerless Yards, 2186 East 43rd street, Cleveland, Ohio.

Thoroughbred Rose and Single-Comb Rhode Island Red cockerels and pullets. Bred from 93 to 94 point males, and hens trap-nested for superior egg production. D. J. Bliss, Carthage, Mo.

Watson's celebrated strain. Rose-Comb Reds. Golden Princess laid 291 eggs in year; 50 hens averaged 240 in year. Cockerels and eggs. Book free. Ira Watson, Box C, Fredonia, N. Y.

Rose and Single-Comb Reds—Real Reds, not Buffs. Old and young stock, with score cards, at $1.50 up. Pekin ducks, stock and eggs. Fred Oertel, Box 111, Brighton, Ill.

Try Poultry. Will sell eggs, high-scoring pens. Single-Comb Rhode Island Reds, $3 sitting. You get best laying and show stock. Write me. B. C. Knodle, De Kalb, Ill.

Hall's Single-Comb Rhode Island Reds are the "stay red" kind. They took Michigan by storm in 1910. None better. Bargains in stock. B. F. Hall, Jr., Lansing, Michigan.

Single and Rose-Comb Reds and Barred Plymouth Rocks. Pullets and cockerels for sale. Eggs, $3-15. Prices and quality right. Crosby Bros., Momence, Ill.

Thoroughbred Rose-Comb Rhode Island Reds. Good laying strain. Eggs from scored pen, 15 for $3; utility, $1.75. C. C. Mason, Route 8, St. Joseph, Mo.

Single-Comb Rhode Island Reds. Some well bred birds, at right prices. Cockerels or pullets. Eggs in season, $2. T. F. Higley, Fairfield, Iowa.

Spanish—Black

White-Face Black Spanish—Eggs 15 for $1.50, 30 for $2.50, 100 for $5. Good stock for sale. Louella E. Jaqua, Portland, Indiana.

Wyandottes—White

500 White, Golden and Columbian Wyandottes for sale. Splendid breeding and show birds. Eggs for hatching from selected stock. Mrs. D. C. Jones, Nashotah, Wis.

Right now, we have some special bargains of a few show room specimens in White Wyandottes. If interested write us. All orders on approval. Wyandotte Ranch, Kiesling, Wash.

Top-Notch White Wyandottes—Show birds. Fine utility stock or high-grade breeders at rock bottom prices. If you want quality, write us. Schmied Bros., Route 2, Mt Healthy, Ohio.

White Wyandottes that win. Won at Delevan and Waterford, Wis. A few cockerels for sale at prices that are right. Egg orders taken now, $3. H. C. Berger, Waterford, Wis.

Snow-White Wyandottes exclusively. Farm range, splendid stock. Satisfaction guaranteed. Eggs, $1 per 15, $4 per 100. Mrs. Christian Oveson, Osage City, Kansas.

White Wyandottes—Choice cockerels from blue-ribbon winners; they will please you. Eggs from choice matings after February 1st. Harley R. Stick, Ridgeville, Ind.

White Wyandottes, Fishel strain. Pullets and cockerels. Something fine for utility breeding. Pure white, $1.25 and $2 each. Jno. F. Qualls, Temple Hill, Ill

Imperial strain White Wyandottes from prize winners. Cockerels, $1 to $3; cocks and pullets, $1; eggs, 100 $5, 15 $1. A. H. Seymour, Swanton, Neb.

White Wyandotte show birds for sale. Price reasonable. Ask for my show record and mating list. Otto Peterson, Jr., Rt. 7, Axtell, Neb.

What Have You to Sell?

¶ Perhaps you have some extra nice cockerels to dispose of; it may be that you have some good pure-bred pigs to sell to those who wish to improve their droves; maybe you have some surplus small fruit plants; you may want to buy a farm or to sell one; you may want to hire a man or to get a job for yourself. No matter—whatever you have to sell, or whatever you want to buy, you should use the advertising columns of The Fruit-Grower, and

MAKE YOUR WANTS KNOWN ON THIS PAGE

¶ Hundreds of Fruit-Grower readers find it profitable to advertise in our Classified Columns. The cost is small, and returns great; you can make money by advertising your surplus wares in this department. There's nothing like it for cheap, effective advertising. Rate is

FOUR CENTS PER WORD PER MONTH

¶ Cash with order. We don't want to keep books on this department, and cash for advertising must accompany the order. Copy can be changed as often as desired. Send your copy for next issue. Address

The Fruit-Grower Classified Department **St. Joseph, Mo.**

Wyandottes—Silver Laced

Silver Wyandottes. Winners at all the big shows. Philadelphia, Madison Square Garden, New York. Most prizes special for best display. If you need real winning Silvers, write immediately. All will be satisfied Eggs while they last. Dr. Henry M. Kalvin, Avenue U, and East 15th St., Brooklyn, N. Y.

Silver Wyandottes—The great egg and table fowl; the breed for fruit growers. Cocks and cockerels, $2 up. Eggs by the sitting or hundred. Circular. Glenoak Poultry Yards, Kinmundy, Ill.

Silver Wyandottes of quality. Prize winners. Best winter layers. Good stock for sale, reasonable. Satisfaction guaranteed. Also some Japanese Silkies. J. F. Spence, Clinton, Iowa.

Silver Wyandottes exclusively for 28 years. Your success depends on your foundation stock. Compare prices and show winnings, then act. M. H. Leidy, R. F. D 2, Souderton, Pa.

Silver-Laced Wyandottes for sale. From high-scoring prize-winning stock. Scored and unscored, also M. B. Turkeys. R. R. Shields, Route 3, Ogden, Iowa.

Fifty lusty Silver Wyandotte breeding cockerels, from noted winners, $2 each; just the birds to add vigor to your flock. Hoffman, Allegan, Michigan.

Miscellaneous Poultry

White, Buff, Black Orpingtons. Best record, second week Missouri egg contest. Silver cups, two shows. Same date, 23 ribbons. Guaranteed show winners, $15. Breeders, $15 trio. Eggs (Cook or Kellerstrass), $5, $4, $3, express prepaid. Eggs any known fowl, $10 100. Get "Why I Breed Orpingtons." Dr. Thomas Dietrick, Box S, Washington, New Jersey.

Ten cents each for all eggs; 50 per cent hatch guaranteed. White Wyandottes, White Plymouth Rocks, Single-Comb White Leghorns and Black Orpingtons. Eggs from our Madison Square matings, $5.00 per 13. Conniscliffe Poultry Farm, Lock Box 19, Tennfly, N. J.

S. C. Reds, White Rocks, S. C. White Leghorns, Buff Rocks and Silver Wyandottes. America's leading strain. Hen hatched and reared. Stock, eggs and chicks at right prices. Write your wants before buying elsewhere. Joseph Anthony, Rt. 4, East Berlin, Pa.

Beauliful swans, fancy pheasants, peafowl and other ornamental stock. Also partridges, pheasants, quail, deer, rabbits, etc., for stocking purposes. Send 4c for illustrated descriptive circulars. Wenz & Mackensen, Pheasantry & Game Park, Yardley, Pa.

Single-Comb Leghorn and Single-Comb Rhode Island Red eggs and chicks from good stock. Eggs, $5 to $12 per 100. Chicks, $16 to $20 per 100. Satisfaction guaranteed. C. H. Zurburg, Route 1, Topeka, Ill.

Rocks, Wyandottes, Leghorns, Hamburgs, Toulouse, Emden, China geese; Pekin, Muscovey ducks; white turkeys, guineas; prize-winning stock. Send for catalogue. B. F. Kahler, Hughesville, Pa.

50,000 Single-Comb White, Buff and Brown Leghorns, Minorcas, Rocks; baby chicks, eggs; Belgian hares, Collie dogs. Catalogue, stamps. Falling Poultry Farm, La Fargeville, N. Y.

Sixty-Page Catalogue Free. Sixty varieties chickens, ducks, geese, guineas, turkeys and hares. Blue ribbon winners. Stock and eggs for sale. Lowest prices. H. A. Souder, Box 10, Sellersville, Pa.

48 varieties pure bred Chickens, Ducks, Geese, Turkeys, Guineas, Pea-Fowls, Incubators, 6000 prizes. Sale circular free; 100 page catalogue, 4c. Ziemers Poultry Farm, Austin, Minn.

Sixty varieties fancy poultry—geese, ducks, turkeys, chickens, pea fowls, guineas, pheasants, pigeons, ratdogs. New 60-page catalogue, 4 cents. F. J. Damann, Farmington, Minn.

Buff Orpingtons and White Rocks from Indianapolis and Chicago winners. Elegant birds of correct shape and color. F. L. Shaw, Route 1, Hutsonville, Ill. Licensed poultry judge.

Partridge Wyandottes and Mammoth Bronze turkeys. Prize-winning strains. Stock for sale. Reasonable prices. Egg orders booked now. Write Mrs. M. F. Oldfield, Buffalo, Mo.

America's best egg producers. Rose-Comb Reds, Runner ducks, Toulouse geese, eggs, chicks and ducklings. Give us a trial. Prices reasonable. Frank Kilpatrick, Warren, Ohio.

White-Crested Black Polish, White Wyandottes, White Orpingtons. Breeding pens of the best. Eggs, $5 to $10 per 15. Stock in season. Edward F. Waldron, Dighton, Mass.

Thoroughbred Barred Rocks, Reds, Pekin, Muscovy, Runner ducks. Homer pigeons, White Guineas. Eggs, $1 up. Stock for sale. Emwood Farm, Route 13, Grand Rapids, Michigan.

White Plymouth Rocks, White Holland turkeys, Buff Orpingtons, Indian Runner Ducks. Ten years breeding and exhibiting. Mating circular free. Verne D. Stock, Stockton, Ill.

Illustrated Catalogue Free. Barred and White Rocks, White Wyandottes. Birds and eggs for sale. Bee keepers and poultry supplies. Large stock. H. S. Durby, St. Anne, Ill.

Doyle's Two Egg Machines, Single Comb Black Minorcas and Indian Runner Ducks. Cockerels, hens and drakes for sale. Eggs in season. John Doyle, Center, Missouri.

Good bargains in Barred Rock pullets, Buff Orpington and Rhode Island Red cockerels. Indian Runner Ducks and fancy pigeons. Julia E. Wise, New Market, Iowa.

State Fair, Rochester, Buffalo, winners. Columbian Wyandottes. Barred Rocks, Buff Leghorns, Bronze turkeys, Rouen ducks. A. G. Barlow, Box 6, Medina, N. Y.

If you want Orpingtons, Reds, Leghorns, Wyandottes, Rocks; males or females; we can save you money. Write us anyway. Lee Harris, College View, Neb.

Thirty breeds, geese, ducks and chickens. Send 3 cents for a large catalogue. Minkel & Co., Mapleton, Minn.

Chicks

Baby chicks, 10c to 20c; stock, $1.25 to $5; eggs, $5 per 100 up. Rhode Island Reds, both combs. White and Columbian Wyandottes, White and Buff Orpingtons, Pekin, Rouen and Indian Runner ducks, Toulouse geese, Bourbon Red turkeys. Catalogue free. G. A. Mitchell, Dept. B, Rldott, Ill.

Chicks, 10c; ducklings, 15c; eggs reasonable. Don't delay booking orders. White Leghorns, Parks Barred Rocks, Pekin and Indian Runner ducks. Both light fawn and penciled. White eggs. Circular. Premium Poultry Farm, Box 62, La Harpe, Ill.

Baby chicks, Wyckoff strain. Single-Comb White Leghorns, mated with cockerels direct from Young, $12 100, prepaid. Eggs, 6c each; any amount. Ohio Valley Hatchery, Ramsey, Ind.

Chicks, leading varieties, hatched in mammoth coal-heated incubators. 100,000 chicks for 1912 delivery, order now. Arrival guaranteed. Catalog free. Walnut Hill Hatchery, Macon, Mo.

Baby chicks, 10c each. Barred Rocks and White Wyandottes. Fawn and white I. R. Duck eggs $1.00 per 12. Orchard Knob Poultry Farm, Mt. Victory, Ohio.

Baby chicks and eggs for hatching from all leading varieties of vigorous farm ranged birds. Send for circular. Maplewood Poultry Farm, Exeter, Nebr.

Ducks and Geese

Yoder's Indian Runner Ducks. First and special at Allentown show. My book on Runners 75c, 11 eggs $2.50, 30 eggs $5.00. Yoder's Partridge Rocks and Partridge Wyandottes are prize winners, 15 eggs $2.00, 30 eggs $3.50. Prices and winnings 2 stamps, Box 50, Levi D. Yoder, Dublin, Bucks County, Pa.

Indian Runner Ducks, fawn and white, winners of first and second premiums Tri-County Fair, Sikeston, Mo. No stock for sale. Eggs $2.50 for 13; $4.50 for 26. R. C. Rhode Island Reds. Carefully bred stock. Eggs $1.50 for 15; $2.5o for 30. J. Ed Green, Blodgett, Mo.

Indian Runners, American standard; English Waltons, pure white. Pens mated by expert judge. Stamp brings mating list, judges' testimony. My new booklet "Road to Success." Mrs. D. C. Teasley, Anderson, Ind.

Indian Runner Ducks, pure fawn and white. A grand lot for sale. Get our prices before you buy. We can please you. K. I. Miller, Box 2, Lancaster, Mo.

Sawyer's Indian Runner Ducks. The kind that lay, the kind that pays, and the kind that wins in the show room. Fine lot of stock for sale; also White Chinese Geese. W. M. Sawyer, Lancaster, Mo.

Mammoth Pekin and Indian Runner ducks. Fine young stock for sale; eggs in season. These are the birds for the fruit grower. Paul and Gordon Griffith, Fredericktown, Mo.

Indian Runner Ducks—Fawn and white, high scoring; prize winners; heavy layers. White eggs, $1, $1.50, $3 per 13. Now booking orders for future delivery. L. R. Street, Webb City, Mo.

Indian Runners—Exhibition and utility stock. English Imported. Pure white eggs. Lay except at moulting. Per dozen, $1, $2, $3 and $5. A. P. Burk, Camp Chase, Ohio.

Indian Runner Ducks—The kind that lay all winter. 150 breeders; eggs, $1 per 15, $5 per 100. Stock prices low. Bernard Reed, McConnelsville, Ohio.

Turkeys—White Holland

Mammoth White Holland Turkeys and S. C. W. Leghorns. Winners at the State Fair, Springfield, Ill. (1911). Satisfaction guaranteed. Southern Slope Poultry Farm, Box A, Jacksonville, Ill.

Sixty White Holland turkeys for sale. Also African and White China geese and Black Cayuga ducks. Wanted, White Orpington pullets. Floyd S. Beaumont, Kansasville, Wis.

Turkeys—Bourbon Red

Bourbon Red turkeys, big, hardy and domestic as chickens. Grand color. Unrelated trios, $11; toms, $4. Eggs, $3 per 10. Mrs. Clyde Myers, Fredonia, Kansas.

Cording's Bourbon Red Turkeys. Pens not related. Toms fit to head any pen. 48 head. Fishel White Rocks, White Guineas. Enterprize Yards, Wingate, Ind.

Bourbon Red turkeys; toms, $5. Single-Comb Brown Leghorns and Rhode Island Reds; cockerels, $2; eggs in season. E. M. Harter, Route 6, Carthage, Ill.

Turkeys—Mammoth Bronze

Mammoth Bronze turkey cockerels. Single-Comb Rhode Island Red cockerels from high-scoring birds. Extra large, fine color, $2 to $5 each. Ringneck pheasants, $5 a pair. Beautiful birds. Easily raised. Rosalie Newberry, Argyle, Lee County, Iowa. Box 8.

Wild and Bronze turkeys and chickens. Eggs for hatching. Catalogue, 2c stamp, showing wild gobbler from the mountains. Valley View Poultry Farm, Belleville, Pa.

Pigeons

Write for our 1912 big free squab book, telling how to make money breeding squabs. How to start small and grow. Enormous demand. 5,000 wanted daily by one marketman. See what he says in National Squab Magazine (monthly). Specimen copy from us, ten cents. Plymouth Rock Squab Company, 341 Howard street, Melrose, Mass.

White, Black, Red and Blue Maltese hens. Yellow and Red Carneaux. Breeders and youngsters. I breed them. None better. Price reasonable. Lafreniere, Vineland, N. J.

POULTRY SUPPLIES

Smokeless Wicks, non-explosive. For incubators and Brooders they have no equal. Thousands are used on the large poultry farms both here and in Europe. Write today for testimonials etc., all sizes 2 for 25c. Conniscliffe Poultry Farm, Tenafly, N. Y.

For Sale—Seventy-two-egg hot water incubators, all complete, for $6. Freight prepaid. Do you want Indian Runner duck eggs? Runner ducks are the farmer's gold mine. Catalogue free. Golden Rule Incubator Company, Middletown, Ind.

Do your hens lay in winter time? If not, why not? Do you want them to lay? If so, feed Boldt's Laying Tonic, 50c per package; 6 packages $2.50. Boldt's Poultry Remedy Co., Albion, Mich.

Free advice on poultry problems: Housing, feeding, management, how to treat diseases. Letters welcome. New 80-page poultry book free if you send 4c postage. The G. E. Conkey Co., Dept. No. 86, Cleveland, Ohio.

Are you interested in the best automatic poultry feeders ever built? If you are get in line with the 20th century goods. They bring results. Booklet free. H. E. Barnes, Box A, Brink Haven, Ohio.

Actual live hen incubator, near million used. Patented plans; ask for free book, giving hundreds testimonials. Address, U. U. Co., Box 48, Rivera, Calif.

FARM LANDS FOR SALE

Arkansas

For bargains in Arkansas fruit land, write us. Good fruit and berry land, $3.00 acre up. Make 150 crates cantaloupes or strawberries per acre. We sold Elberta peaches up to $3.25 per bushel. Past season sold cantaloupes for $1.00 crate, f. o. b. cars. Strawberries netted us $150 per acre. Fine climate, no malaria, mosquitoes, saloons or negroes. Grannis Real Estate Co., Grannis, Polk County, Ark.

In famous Springdale fruit district; 56 acres, five miles out; well fenced; 30 acres cultivation, balance timber and pasture. Plow land has loose rock; strong soil, ideal fruit land; 14 acres in wheat; three-room log house, new frame barn, other buildings; family orchard; $1,500, easy terms; possession, if sold quickly. Fredricks Realty Company, Springdale, Ark.

Ozarks—Fruit prospects in Benton County, Arkansas, were never better. Orchards, fruit and farm land on the easiest terms; close to good town. Still cheap, but advancing rapidly. Write us for descriptions, terms, etc. Banks & Adcock, Hiwasse, Ark.

Orchard For Sale—120 acres in Arkansas fruit belt; 3,400 trees. Fine community. Telephone, mail route. Near good railroad town. Write Charles Thompson, Pottsville, Ark.

California

For Sale—Ten acres peach orchard, three years old, within one mile of high school and grammar school in Sunny Stanislaus County, California. Fine place to raise chickens. Box 97, R. D. 1, Ceres, California.

Twenty acres Tokay grapes and plums, half mile from depot. Best fruit section, $2,500, only $600 cash, balance long time. Rowell Fruit Co., Loomis, California.

Colorado

If you want a part of one of the very choicest tracts of fruit land on earth, where conditions are ideal for growing fruits and for a home, then send for copy of a beautiful booklet describing Morrisania Ranch, Grand Valley, Colo. This is not cheap land—it sells for $300 per acre, including perpetual water right, but it is worth the money. It may be that some member of your family needs the benefit of Colorado's climate for some form of lung trouble. Get a tract of this land and establish your home there before it is too late. The ranch contains 880 acres, and only part of it is for sale, for we will develop the remainder for our own use. Shall we send you the booklet which describes the place? Write me if interested. James M. Irvine, Editor The Fruit-Grower, St. Joseph, Mo.

For Sale—Eighty-acre ranch, near Grand Valley, Colo. One mile south of the famous Morrisania ranch, with good water rights; about 50 acres alfalfa, 12 acres pasture, two acres orchard, two good houses, with barn, hay, tool sheds, granary, chicken houses and all other necessary improvements for fine class farm. Price $10,000; includes 20 tons of hay and farm implements. No agents. Address A. Isch, Grand Valley, Colo.

For Sale—Twenty acres best orchard land; North Fork Valley, Delta County; no crop failures, plenty water. Write owner. Save commission. Theodore Polling, Hotchkiss, Colorado.

Cuba

Rich soil, ideal climate, abundant rainfall; best transportation; 20 acres, $600, $10 monthly. Map free. Sanderson, 184 Palace Bldg., Minneapolis, Minn.

Florida

Florida farm sacrifice. To close estate at once I must sacrifice beautiful 26-acre Florida home, 6-room cottage, modern improvements, barn, outhouses, all necessary live stock, poultry, machinery and equipment. Will yield over $4,000 a year, if properly cared for. Price complete, $1,500. Terms $50 cash, $25 quarterly, if desired, by responsible party. Possession March 1. Owner, care A. Jordan, Glidden, Wis. West Palm Beach, Florida.

Homes in Healthy West Florida, $20 per acre. Part pay in crops. "Facts About Florida" free. W. S. Reeve, Pensacola, Fla.

Georgia

For Sale—Two Georgia fruit farms; one of two hundred acres, mostly of apples. One tract of three hundred acres, thirty acres in apples, balance in peaches, all at bearing age. Situated at railroad private switch. Half mile from postoffice. Price and particulars on application. J. Puterbaugh, Menlo, Ga.

Idaho

Wendell, Lincoln County, Idaho, offers greatest opportunities in West. Over eleven million dollars invested in irrigation enterprises in Lincoln County, Idaho, according to government statistics. Wendell's first crop potatoes, winter and spring wheat, oats and barley won sweepstakes Idaho State Fair; again won practically everything in potatoes and many firsts on grains, Idaho State Fair, 1909; again in 1911 won sweepstakes in agriculture, Idaho State Fair; crop records broken this year. Greatest irrigation system in country. No dry years here; abundant water when you want it; one supply reservoir filled by Snake River, has thirty miles shore line; gigantic irrigation water supply and power dams on Snake River furnish cheapest electric power in country. Lava ash soil, deep, very productive, mellow, easily worked; wonderful fruit country, Oregon, Washington, Colorado fruit men buying here; consider soil best and cheapest known. Land with abundant everlasting irrigation water about $50 per acre. Alfalfa grows to perfection here; great stock country; formerly old winter sheep range; climate mild; spring work begins March; purest soft water for domestic purposes underground. Lincoln County has increased over 600 per cent in past ten years. Wendell, live, progressive town; fine people; two rival railroads, modern churches, schools, banks, hotels and business houses. Come and see for yourself, or write S. M. Smith, Wendell, Idaho.

Famous Orchard For Sale—On account of death of my father, J. H. Shawhan, his very profitable orchard near Payette, Idaho, is offered for sale. This tract of land contains twenty acres, less half the roadway alongside; it has good buildings and perfect water right, with abundance of pure soft water from well for domestic use. Orchard consists of 12 acres of apples, mostly Jonathan, Wagner and Baldwin, and 6 1-2 acres of Anjou, Clargeau, Bartlett and Flemish Beauty pears. In 1910 the Jonathan trees averaged 20 1-2 boxes of apples per tree, which sold at $1.40 and $1.42 1-2 per box f. o. b. loading station, one-fourth mile from orchard. This is one of the best paying orchards in America, and everything is in perfect condition. Editor Irvine of The Fruit-Grower has visited it many times; ask him about it. Price for entire tract, $30,000; one-half cash, time on balance. For information, address B. P. Shawhan, Boise, Idaho.

Live in Central Idaho or Southeastern Washington, the greatest diversified farming region in the Pacific Northwest. Soil unexcelled for richness—climate unequalled. Especially adapted to livestock, poultry, fruit and vegetables. For authentic information address Dept. 20, Idaho-Washington Development League, Lewiston, Idaho.

I want more good neighbors. Will answer free whatever I can about Idaho and her opportunities for health and wealth seekers. E. McCulley, Arco, Idaho.

Kansas

160 acres, four miles from Troy, Kansas; 60 acres under cultivation, balance pasture and timber, fair improvements; good water; suitable for fruit or stock, $5,500; half time. H. Hollingburg, Lawrence, Kansas.

New York

Owing to ill health I offer my poultry plant for sale at less than one-half value. A live man can clear $1000.00 the first year. Will stand rigid investigation. Write at once. E. F. White, Route 3, Nicholas, N. Y.

Missouri

Missouri Farms—One 400 acres, rich limestone soil. One 235 acres, rich gray loam. Both improved; all cultivating land, free from rocks. Also two tracts fine timber land in Grand River bottom; deep rich soil, free from rocks; one 255 acres, part in cultivation. One 160 acres nearly all timber, each has high ideal building site, and will make best of farms when cleared. Timber alone, if put into lumber and wood will more than net price of land; all these lands are in Henry County and close to railroad stations. Address the owner, W. S. Duncan, Clinton, Mo.

For Sale—Forty acres fine fruit land, 4 miles from Mound City, Mo. Has 3-room house, barn, etc. Thirty acre orchard in its prime, Winesap, Ben Davis, Gano, York Imperial, Black Twig and about 500 Jonathan; 50 pear trees. Will sell alone or with 40 acres adjoining. Write for particulars. R. B. Bridgeman, Oregon, Mo.

New Mexico

1280 Acres bottom land partly in Alfalfa and orchard, nearly all under fence, 200 acres under cultivation now, balance finest grazing land in the country. Elegant six-room stone house, hot and cold water, bathroom, stationary washstand, also with hot and cold water, toilet also in bathroom, two large barns, large hen and turkey house, stone milk house, running water, waterworks all over the improved grounds. Fourteen-foot Sampson windmill, pumps 4-inch stream to two tanks, capacity of tanks are 100 and 33 barrels, respectively. Ideal home for a family; healthiest spot in the world for anyone to regain their health; only one-quarter mile to Clayton, N. M. Price, to close it out quickly, $12.50 an acre. For further particulars address Chas. H. Lawrence, Clayton, N. M.

Oregon

1020 Acres 4½ miles from Brownsville. Good improvements of all kinds. Large nine-room house, all complete; large barn, a mountain stream runs through the place, large orchard, good fencing, everything complete; 150 acres in cultivation, and as much more, if wanted; R. F. D. and telephone, one-fourth mile to school. This place is an extra cattle ranch; one-half of the place has 15,000,000 feet of timber on it. This is an investment for someone wanting fruit land. The color of the soil is red. Price $27.50 per acre, $8,000 cash, balance on long time at 6 per cent. Address W. J. Moore, Brownsville, Oregon.

560 Acres, five miles from town; all extra good bottom land; no brush or anything to hinder plowing all of it; road on two sides of farm, large creek running through it; fencing is plank and wire. This is one of the best bargains in the country. Price $50 per acre, $5,000 five years' time at 6 per cent. Address W. J. Moore, Brownsville, Ore.

682 Acres eight miles out; a fine farm, has 250 acres of farm land on the place, has been farmed but has now gone back to grass; about fifty acres of good timber in one corner, improvements are nothing extra, but the land is of the best quality; place has been used for a cattle ranch for the past ten years. Price, with terms, $27.50 per acre. Address W. J. Moore, Brownsville, Ore.

552 Acres, two miles east of Crawfordsville; 90 acres cultivation, good new house, nice large barn, good outbuildings, good fences, R. F. D. and telephone, balance of place has fine timber on it and has a cruise of 8,000,000 feet. Price per acre $25. Address W. J. Moore, Brownsville, Oregon.

A splendid nursery for sale. Includes 43 acres of good nursery land, with stock and equipment. Good reasons for selling. Must be sold soon. For further particulars, address Beaver Realty Company, Ashland, Oregon.

Rogue River Valley orchard for sale. Ten acres bearing apples and pears, mile and half from postoffice, Medford, Oregon. J. H. Bissell, Box 78.

Texas

For Sale—Irrigated eighty acres and house in famous healthful Pecos Valley. Sick people thrive here. Full water rights. Raise fruit and alfalfa. $48 per acre. Bargain; must sell. Apply to Owner, 4193 Washington Ave., St. Louis, Mo.

Alvin, Texas, the commercial center of the successful orange, fig, strawberry and truck district of the Texas gulf coast; soil rich, climate delightful and location unexcelled. Correspondence solicited. E. C. & J. F. Webster.

For Sale—The Holloway Nurseries at Alvin, Texas. Trade established. Twenty acres land, modern buildings. Getting old; want to quit. Address D. Holloway, Alvin, Texas.

Virginia

Special to gardeners and truckers—We are making extensive preparations for the coming plant season, spring, 1912, and will have a fine list of the following to offer: Lettuce, in five varieties; cabbage, all the leading kinds; peppers and eggplants, pot grown and otherwise transplanted; cauliflower, celery. Special attention is given the growing of celery plants of golden self-blanching French stock. Tomatoes, all the leading varieties, transplanted and pot-grown plants. These are money makers and we shall be pleased to receive inquiries and give best possible prices to large buyers. We have extensive green houses and hotbeds and truck 200 acres. Fox-Hall Farm, R. F. D. No. 2, Norfolk, Virginia.

Look ahead five years—What's in store for you? Would a nice, cosy home, and a $3,000 income per year in this beautiful valley for life look good? A ten-acre apple orchard tract planted to 500 red-apple trees—which will cost you a few dollars now and a few dollars each month—will insure your future home, income and happiness. Write us and get "Free Booklet," with facts. Shenandoah Valley Apple Lands Co., Waynesboro, Virginia.

Bearing commercial orchard in Virginia—100 acres, deep, rich soil, Albemarle Pippins and Wineseps. Splendid condition. Macadam road, near city. Price $6,500. Details, write Owner, Box 434, Lynchburg, Va.

REAL ESTATE AGENTS

Cash for your farm or business. I bring buyers and seller together. No matter where located, if you want to buy, sell or exchange any kind of property, anywhere, address Frank P. Cleveland, 994 Adams Express Building, Chicago, Ill.

CANNERS

Improved Raney canners make home canning practical and profitable to every housekeeper, farmer, fruit and truck grower. Write for catalogue. Agents wanted. Raney Canner Co., Chattanooga, Tenn.

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace building, Minneapolis, Minn.

Farm Wanted—Will pay cash for a good bargain. Give full particulars and lowest price. W. F. Grower, Box 994, Cherry Valley, Illinois.

FOR SALE.

For Sale—Hurst barrel sprayer; good as new. Address, J. P. Cook, Box 183, Circleville, Ohio.

INVESTMENTS

Six per cent guaranteed stock of The Welch Co., North East, Pa., $50 shares. Guaranteed principal, Dividends and Redemption by Welch Grape Juice Co., Westfield, N. Y. Established 1869. J. L. Pelton, Erie, Pa.

Wanted—Man with $10,000, to buy interest and take management in $150,000 corporation owning Grand Valley, Colorado, fully developed, irrigated orchards. Address Box 506, Marion, Ind.

NURSERY STOCK

Sacrifice sale of surplus berry plants; No. 1 select stock; 100,000 black-cap raspberry, 25,000 red raspberry, 10,000 Mersereau blackberry, 25,000 Snyder blackberry, 25,000 Early Harvest blackberry, 800,000 root cuttings of above varieties. Also peach trees and all other kinds of nursery stock at one-third to one-half price. Gray's Nursery, Pekin, Ind. R. D. No. 6.

Orange and Fig Trees, Pecans, Persimmons, full line shade trees, fruit trees, roses and heavy ornamentals adapted to Southern planting. Booklet on orange and fig culture and catalogue "B" free. Wholesale and retail. Algoa Fruit and Nursery Co., R. H. Bushway, Mgr., Algoa, Texas.

Trees of all kinds at wholesale prices. Save agents commission of 40 per cent by ordering direct from us. Stock guaranteed first class; certificate of inspection furnished. Don't delay. Send for price list now. Address Box R, Wichita Nursery, Wichita, Kansas.

Horsford's cold-weather plants and flower seeds that grow. Ask for new catalogue, before making up your seed and plant lists. You will save money besides the plants from the North don't kill back so easily. New catalogue ready with the new year. Send now. F. Horsford, Charlotte, Vermont.

As much as $1,000 per acre has been made from our berries. McDonald berry earlier than Harvest, twice as productive. Dallas, Robinson, Jordan and others. All fine everywhere. Tree fruits. Write for catalogue. Fitzgerald's Nursery, Stephenville, Texas.

Money in buying best nursery stock grown. Everything for the fruit grower in trees, plants, vines and ornamental stock. None grown that excels ours. Handsome catalogue free. Grand Mere Nursery, Baroda, Mich.

Satsuma oranges and grapefruit trees, budded pecans, fruit and ornamental shade trees. Rose bushes and shrubbery. No better stock grown. Illustrated catalog free. Turkey Creek Nursery, Box 39, Macclenny, Fla.

Beautiful young Holly Trees, with directions for planting, one dollar each, prepaid. The ornamental Christmas holly. Salesmen wanted; liberal commission. Copp & Kibler, Manassas, Va.

Plant Michigan Grown Trees. We have a fine selection for spring planting. Trees direct to planter. Will be pleased to mail you our price list. H. L. Westgate Nursery Co., Monroe, Mich.

Strawberry plants—Send for our valuable book and price list of hardy Northern-grown plants. Fruit growers and poultry keepers' supplies. George Stirdivant, Sheboygan Falls, Wisconsin.

Apple trees at wholesale prices; leading varieties. No better grown anywhere. An extra fine lot of Jonathans. Save agents' commission. Write for prices. Albert Mathis, Payette, Idaho.

Dollar strawberries. California's money maker. Early, best grower, best shipper, best keeper. We buy thousands of crates yearly. Plants, $3 thousand. Rowell Fruit Co., Loomis, Cal.

Apple seedlings and root grafts. My seedlings are Northern Iowa grown. Grafts made in any style by experienced workmen. Write for prices. Hawkeye Nurseries, Stratford, Iowa.

Senator Dunlap strawberry plants. Grown by up-to-date methods. Fine plants, by express, $3.75 per 1000; by mail, 75c per 100; 25c per 25. P. A. Anderson, Grand Mound, Iowa.

Strawberry plants, $2 per 1,000; raspberry plants, $5 per 1,000. Other stock in proportion. Catalogue free. Write today. Vernon H. Krider, wholesale nurseryman, Middlebury, Ind.

Peach, pear, plum, cherry and apple trees. From the largest nursery center in the world. Send for catalog. Alton E. Randall, Main and Adams St., Dansville, N. Y.

Helen Davis strawberry plants for sale by the "originator." Not the same variety that Buckbee sent out last spring. Send for prices. Geo. W. Davis, Brazil, Indiana.

Elm, Maple, Box Elder, nursery grown. Sizes 6 to 12 feet. Leased ground. Must move them. Write us for prices on car lots. The Newburys, Mitchell, S. D.

I have the best-rooted strawberry plants I have had for years. Send for price list if you need plants for 1912. D.Brammerbush, Route 4, Decatur, Ill.

Strawberry plants, $2 per 1000; $1.80 per 1000, in lots of 5000; list free. J. Sterling, Judsonia, Ark.

SEEDS, PLANTS, ETC.

Early cabbage plants; fine; mail, 60 cents 100. Express, $2.50 1000. Firmest shipping strawberry grown. Dozen, 50 cents. Mark T. Thompson, Richmond, Va., originator.

TO EXCHANGE.

For Trade—Nice new five-room house. Nice lot 40x150. Fine well. Basement, out buildings on nicest and best street in town, at the edge of town. 13 good factories the farthest not over a mile. Plenty of work here. Price $1,500.00. Mortgage $600.00 to run five years. I want a few acres of land worth about $1,000.00. W. T. Hickman, Decatur, Ill. Rt. 5.

Farm Wanted—In southwest Arkansas, northwest Louisiana or east Texas, in exchange for west Kansas. Improved, 160 acres. J. A. Wilson, Morehead, Kansas.

Wanted—Young men and women wishing to exchange postcards, correspond and be happy; try our splendid club. Membership fee, 10 cents. Young people's Card Exchange Club, 4 Market Street, Roxbury, Mass.

WANTED

Walnut timber, highest prices paid. Write R. B. Tansel, 1709 S. 26th St., St. Joseph, Mo.

DOGS AND PET STOCK

50 **Fox Terriers** of all ages. Best rat, pet or watch dog on earth. Write me at once for prices. T. H. Kaldenberg, Pella, Iowa.

GALVANIZED STEEL NESTS

Send for free catalogue of the Knudson patent galvanized steel, lice-proof poultry nests, coops, feeders, etc. They positively eliminate the lice and mite problem. Pay for themselves in short time, whether you keep ten hens or ten thousand. Write today. Knudson Manufacturing Co., Box 304, St. Joseph, Mo.

AGENTS WANTED

Local representative wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L420, Marden Building, Washington, D. C.

HELP WANTED

Wanted—Two or three energetic young men with nursery experience in budding, and bench and field grafting. No booze fighters or lazy-bones need apply. Good positions for live young men who wish to advance. Apply to "The Nurseries," Box 117, Ontario, California.

Wanted—A man or woman to act as our information reporter. All or spare time. No experience necessary. $50 to $300 per month. Nothing to sell. Send stamp for particulars. Sales Association, 790 Association Building, Indianapolis, Indiana.

Wanted—An experienced peach and apple grower to look after fruit planted and to work farm on shares for one-half interest in fruit and crops on the farm. Answer now to Thos. B. Sheldon, Union Theological Seminary, Richmond, Va.

Salesmen—To sell the most efficient insecticide and fungicide on the market. Exclusive territory given. Splendid opportunity for hustlers. Entomoid Chemical Co., Woonsocket, Rhode Island.

I Want a Good Man with family to work on fruit farm and do general farm work. W. H. Rochelle, Route 5, Jackson, Tenn.

LIVE STOCK

For Sale—A few high-grade Holstein-Guernsey Jersey heifer calves, and all varieties of Plymouth Rocks, Wyandottes and Rhode Island Reds; cockerels and pullets at reasonable prices. W. A. Hoyt, Whitewater, Wis.

Registered Holstein-Friesian bulls cheap. Strong and growthy. King Segis blood. Regal White Wyandotte eggs, hatching, 5c each. Satisfaction guaranteed. Luther Falkey, Phelps, N. Y.

Berkshires, rich in Lord Premier blood, at low prices. Pigs, gilts, boars and bred sows. W. H. Rochelle, Route 5, Jackson, Tenn.

Milch Goats—Swiss and Spanish breeds. G. H. Wickersham, 1244 St. Francis Ave., Wichita, Kansas.

MISCELLANEOUS

Free—"Investing for Profit" magazine. Send your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine. It is worth $10 a copy to any man who intends to invest $5 or more per month. Tells you how $1,000 can grow to $22,000. How to judge different classes of investments, the real power of your money. This magazine six months free, if you write today. H. L. Barber, publisher, R434, 20 W. Jackson Boulevard, Chicago.

Sulphur—We can supply your requirements promptly at the lowest prices, in barrels and sacks. Our sulphur is the best and cheapest that can be gotten, for making lime and sulphur solution. Write for prices. Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

Printing for poultrymen, fruit-growers, everyone. Note heads, envelopes, cards, tags, circulars; 100 either, 45c; 250, 80c; 500, $1.25; 1000, $2.00. Postpaid. New cuts. Samples, 2c. Orvil Kiger, Brighton, Iowa.

The wireless Burglar Alarm. Protects homes, stables, chicken-houses. Effective and durable. Mailed 50 cents each. Send for circular, The Home Specialty Company, Norristown, Pa.

Lime-Sulphur, Scale-Kill, Barker's Solution. Guaranteed to kill scale and make trees healthy. Prices reasonable. Used for several years. A. E. Barker, Norristown, Pa.

Have all kinds second-hand guns, revolvers, stoves, furniture, steel traps, etc. Furs a specialty in the season. Correspondence solicited. James A. Gregory, Liberty, Ind.

For Shetland Ponies, Poultry, Pigeons, Pheasants, Ferrets, Rabbits, Guinea Pigs, Goats, Cats, Dogs; 2c stamp for circular. Colonel Joseph Leffel, Springfield, Ohio.

Peach Blossom Lotion, Cooling, whitening, beautifying, improving complexion; not oily. 25 cents, silver. J. Cox & Co., New Milford, Connecticut.

Choosing Good Fence Posts

The Ohio Agricultural Experiment Station in some tests to determine the durability of farm timbers, found that large posts usually last longer than small ones of the same wood. It makes no difference, says a report received by the Department of Agriculture, which end of the post is put in the ground, except that preference should be given to the sounder or larger end. In stiff clay soil the posts generally rot just beneath the surface of the ground, whereas in porous, sandy, or gravelly soil, they usually rot throughout the buried portions. Posts standing in constantly wet soils last longer than in soils which are alternately wet and dry. Seasoning does not seem to have any marked effect on durability. Timber growing rapidly and in the open is not so good as the same variety growing in the woods. The evidence appears to show that it is not a good time to cut posts just as the tree begins to grow in early spring. The wood at the centre of the tree is not so good as that just inside the sap wood. In an average lot of so called first-class posts on the market a number can usually be selected that are defective, though they may appear sound and firm. The defectiveness is usually indicated by a somewhat darker color than normal, especially near the centre of the tree.

LIME-SULPHUR SPRAYS

In discussing the value of lime-sulphur as a fungicide, before the meeting of the Missouri State Board of Horticulture at Hannibal, Mo., Professor O. S. Watkins of the University of Illinois, said in part:

"In the experimental orchard situated at Neoga, Illinois, we were fortunate in having some of the fruit upon the trees which were being used to test the value of lime-sulphur, come through the freeze of April 23rd and 24th, 1910. In examining the picked fruit it was found that three sprayings with lime-sulphur controlled only twelve per cent of the scab; four sprayings, seventeen per cent; and five sprayings, forty-five per cent. The check trees were very scabby, and had to be picked a month before the normal time for harvesting. As bordeaux mixture has been the standard fungicide for a good many years, it was used as a check along with the lime-sulphur sprayed trees. Three sprayings with this latter mixture controlled over ninety per cent of the scab, showing that the efficiency of the two in the control of scab can in no way be compared. Since the amount of fruit picked from these plats was in most cases less than a barrel, it would be inaccurate to consider such results conclusive. Accordingly, experiments were planned and carried out during the season of 1911 under much more favorable conditions. During the past season a normal crop was harvested from all plats. This season was exceptionally dry, and the only severe attacks of scab came during the blooming period, and as far as the fungous control is concerned, the results from lime-sulphur are much better. Three sprayings of lime-sulphur controlled sixty-one per cent of scab against seventy-five per cent with bordeaux mixture, while the check plat showed only six per cent of the apples free from scab.

"During the past season, which was quite different from the season of 1910, there was only a very small amount of foliage injury following the use of lime-sulphur, even upon those trees receiving applications in July and August. There was, however, a very serious burning of the fruit following the application made early in June. This appeared to be quite serious for a while, as much of the fruit was burned to the core. As the season advanced, many of the apples recovered from the injury and at picking time less than ten per cent were discarded on account of the injury. This burning was not confined to the Station orchard alone, for in every orchard which I visited last summer in which lime-sulphur had been used as late as June, I found a similar injury affecting all varieties alike, though not quite as severe as in the Station orchard. Although the injury during the past season did not cause serious loss, it shows that the use of lime-sulphur is still in an experimental state and growers must use caution in applying it to their trees.

"Apple scab is not the only disease which attacks the apple, but since it is found in nearly all orchards in the Middle West, it has furnished an excellent disease with which to experiment. Orchards in many localities are subject to two very serious diseases, apple blotch and bitter rot, and in no case have I known this mixture to be effective against either of them.

"It is well known that lime-sulphur has been used as a winter spray in combating San Jose scale, but during the last few years some growers have been making an application of the winter strength, whether or not their trees were infested with scale. This application is termed the "clean up" spray, and is applied in the spring just as the buds begin to swell. There can be no doubt but that this spray would be a benefit to any orchard, but as to the advisability of making this application every year, this is a question which each individual grower must decide for himself. In orchards which are subject to severe attacks of apple scab and apple blotch, a yearly application will no doubt pay, as I know of several instances in Illinois orchards in which both of these diseases have been much more easily controlled when the winter application has been made.

"The strength of lime-sulphur solution which is recommended by the U. S. Department of Agriculture and many experiment stations is one in which there are four pounds of sulphur in solution, in each fifty gallons of the spray as applied. In order to furnish this amount of sulphur, about one and one-half gallons of the average commercial brand would be required. Putting the cost of the concentrated solution at fifteen cents per gallon or seven dollars and a half per barrel, which is extremely low, fifty gallons of the spray as applied would cost twenty-two and one-half cents. Comparing this with Bordeaux mixture, using the 4-4-50 formula, we would have to be able to buy the copper sulphate for five cents per pound, and the lime for one-half cent per pound, in order to keep the cost of the two sprays about equal.

"Although our experiences up to the present time with lime-sulphur show that it cannot replace bordeaux mixture, as a summer fungicide, there is no doubt but that by intermingling the two sprays, the good characteristics of each may be retained. Bordeaux mixture has always proven a very efficient fungicide for nearly all diseases of the apple, its one main drawback having been russetting of the fruit following the applications made shortly after the fall of the petals. Our experiences with lime-sulphur have shown that no serious injury follows its use until several weeks after the blossoming period, and that by substituting this spray for the regular bordeaux spray made immediately after the fall of the petals, a very satisfactory schedule should result. This plan has been followed and found to be quite satisfactory."

Sunscald

Here is an old enemy of the orchardist that continues to do considerable damage to young trees, much if not all of which could be prevented if some method of protection were practiced.

Sunscald is caused by rapid and extreme changes in temperature, and the more frequent the change the worse the injury. It is always found on the south side of the tree where the sun's rays strike the tree on bright days and start active life in the portion of the bark subjected to the heat of the sun. When the temperature drops again the protoplasm is killed and the soluble compounds formed by the renewal of activities, then decompose. Sunscald occurs both in summer and in winter, but the damage is greater in winter because of the more extreme temperatures and the fact that the trunk is less protected after the leaves fall. It is also thought that the reflection of the sun from the snow against the bark of the trees helps to increase the injury.

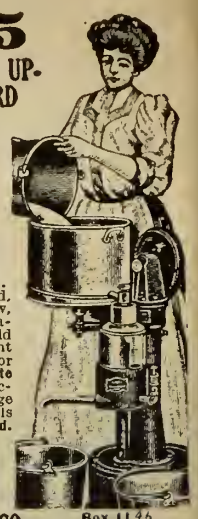
In the summer it is probable that the injury is more truly a scald than in winter, being due more to the extreme high temperatures caused by the direct rays of the sun.

Old trees on which the bark has become rough are probably not injured by sunscald, although they sometimes bear marks of the injury which quite likely started when the trees were young.

To prevent sunscald it is necessary only to protect the bark of the trunk from the sun. This may be done by standing up a board on the south side of the tree or wrapping the trunk with burlap, cornstalks, straw, or other materials, or whitewashing the trunk, causing it to reflect the sun's rays instead of absorbing them. Wire screen is also effectual. It breaks the force of the sun's rays, but allows enough air and heat to reach the bark to prevent its becoming tender and more sensitive. Leaning the tree slightly to the south or southwest when planting is considered a good idea, since it lessens the directness with which the sun shines on the trunk and also places the tree in a position to receive more protection from the branches on the south side. Probably one of the most practical is the wood veneer protector which can be bought for about one dollar per hundred. These serve both to shade the tree and to protect from rabbits and mice, and may be left on the year round until the trees are large enough to be practically out of danger from sunscald.

S. VAN SMITH,
Colorado Agricultural College.

15 95 AND UPWARD
AMERICAN SEPARATOR



THIS OFFER IS NO CATCH. It is a solid proposition to send, **on trial, fully guaranteed,** a new, well made, easy running separator for $15.95. Skims hot or cold milk; making heavy or light cream. Designed especially for **small dairies, hotels and private families.** Different from this picture, which illustrates our large capacity machines. The bowl is **a sanitary marvel, easily cleaned.** Gears thoroughly protected. **Western orders filled from Western points.** Whether your dairy is large or small, write us and obtain our handsome free catalog. **Address:**
AMERICAN SEPARATOR CO. Box 1176 BAINBRIDGE, N.Y.

TRAPPERS
We Pay Highest Cash Prices
We are the oldest established Fur House in Kansas City—have been paying highest cash prices and always giving our customers a square deal on every shipment since 1870. **SHIP US ALL YOUR**
FURS
We need all you can send, right now. We pay the prices we quote; give liberal assortment, do not undergrade, and remit cash in full same day shipment is received. We charge no commission. Send today for our free price bulletin, quoting highest cash prices which we actually pay, free tags and full particulars.
M. LYON & CO., 270 Delaware St., Kansas City, Mo.

The Best Way to Cure Pork

A system of curing meat has been followed by Prof. H. S. Mobley, Fayetteville, Ark., with success in his family in Virginia from generation to generation since Colonial days. It has been tested by hundreds of people in many Southern States, and every one has found it more reliable for home curing than any other method. Prof. Mobley furnished his method to the Agricultural Department of the Rock Island lines for distribution.

A day should be selected for killing when the temperature is low enough to insure a thorough cooling by the following morning, the hogs being dressed and hung over night.

On the morning of the day the hogs are killed, for each four hundred pounds of meat make a brine as follows: Twenty gallons of rain water, thirty pounds of salt, eight ounces of baking soda, ten pounds of brown sugar, one gallon of molasses (use good molasses, not the adulterated kind). This fluid should be boiled and skimmed in the morning and left to cool in a shady place. When cool, add five ounces of saltpetre. Dissolve the salt-petre in warm water and stir thoroughly.

The following morning cut up the hogs as usual, and pack in barrels. Put the sides of the meat or middlings in the bottom and the shoulders next, and the hams on top of these, all with the skin side down. Weight the meat down well and pour the brine over until the meat is completely covered. Then cover the top of the barrel with some good thick covering that will prevent evaporation.

Look at the meat often enough to see that the brine has not evaporated so as to leave any meat exposed. If it should become exposed more brine should be added. The meat can be left in the brine indefinitely, but if it is desired to smoke the meat, it should be taken out in about six weeks.

Ask your neighbors to subscribe to The Fruit-Grower.

ORDER GARDEN SEEDS EARLY

Seedsmen all over the world are actually alarmed at the great shortage in vegetable seeds this year. This sounds like some of the scares which have been experienced in other years, but there can be no question that the supply is unusually short this year, and The Fruit-Grower urges its readers to order at once. Naturally, we want you to buy from our advertisers, but no matter where you buy, order early, for late orders are likely to be turned down.

The Market Growers' Journal says: "The percentage of seeds harvested of the biennial families, such as carrot, beet, celery, cabbage, etc., have been disastrously and alarmingly small. Many annuals in seeds will also be in very short supply; the most serious example being garden peas. The fact is, that an average return of considerably less than 20 per cent would seem to be pretty near the mark. Some of your readers will ask this question: 'Why will the short crop of seeds just harvested make so much trouble next spring? We have had limited seed crops in past years and when planting time came there turned out to be plenty for all?' The writer will try and explain, and clearly, why the general short seed crop will cause so much absolute distress the coming spring planting season. There have now been harvested in continuous rotation some half dozen short average crops of vegetable seeds. Were we simply having a short seed crop this year, more inconvenience than real harm would be done; as the 'reserve seeds,' with which the seed trade always protects itself against a 'famine year,' would tide over, so to speak to another year—but there are no 'reserve seeds' of any moment on hand generally from previous seed crops; speaking plainly, the market may be said to be absolutely bare of seeds. For the last half dozen years the general seed crops harvested both in this country and Europe, have been greatly below a normal average; only one result could possibly follow from such a state of affairs steadily continued—a steady using up of the 'seed reserves' all over the world, which are at last practically gone. What is the result? We are facing the smallest general crop of seeds this past season ever known, in consequence of which our seedsmen know not which way to turn."

The wholesale seedsmen of the United States have an organization, which issues bulletins for benefit of its members, and a recent circular says:

"But the worst is not comprehended in the present seed crop conditions as those same influences in Europe which resulted in the production of a limited seed crop at the same time influenced the production of a short crop of all biennials in growth the past summer, as for example, cabbage, kale, carrot, celery, beet, mangold, onion, leek, turnip and all other underground and overground plants which have to be developed sufficiently the first summer to produce a seed crop the second summer.

"As it is doubtful if there exists, either in America or in Europe, as much as a third of the quantity of garden seeds of many members of the biennial character required to meet planting demands in the spring of 1912, it is evident that little or nothing will be carried over to serve for 1913. This being so, the only reliance in the harvest of European biennial seed crops of 1912 to serve for 1913 is from the few plants now standing out in the fields and the products from these very limited supplies have already been most alarmingly discounted.

"In other words, the seed famine, as respects biennials, must continue over two seasons, as it is now too late to grow crops requiring two years to produce seeds. It is not likely that seeds of biennials will be held a year hence at lower values than the present day values, if indeed as low."

In closing their report, the following was added: "The directors do not want to appear as alarmists but hope the members of the league will accept at its full significance the report here made of a condition without precedent."

The Fruit-Grower repeats its advice to our readers: Buy your seeds now.

Spraying the Little Orchard.

In the November issue of your valuable paper I notice an inquiry as to how the small fellow can make up and use spray mixtures. As I am one of them I will give you my experience, covering four or five years.

The first step in spraying is to know what to spray for. In general there are three principal enemies of trees and bush fruits; first the scale; second, the fungous diseases and third, the chewing insects. Now, it will take a good barrel sprayer to keep these pests under control. I use a Morley & Morley, No. 4, spray pump, mounted on a Sears-Roebuck barrel cart. The barrel holds 32 gallons and the pump is equipped with one line of hose. I use 10 to 12 feet, fitted with a bamboo extension rod, 6 feet long, with a stop cock; one double Vermorel nozzle, with a swivel joint, so it will spray in every direction, with two sets of nozzle caps, one pair fine and one pair coarse. This pump and cart complete cost me $16, and it is a good one.

The spraying materials I am now using are the best I have found, and they can be bought in small quantities, although large quantities are cheapest. For scale in the winter or very early spring I use Scalecide one gallon, water 15 gallons; or scalecide one quart to 15 quarts of water. For winter spraying I always use it in the proportion of one to 15.

For fungi, I use Sulfocide, one teaspoonful to the gallon of water for peaches and plums, and two teaspoonfuls of Sulfocide for apples and grapes.

I use Vreelands dry powerd arsenate of lead for chewing insects at the rate of about one ounce to the one gallon of water for potato bugs and one half ounce to the gallon of water for most of the bugs that feed on the foliage of fruit trees and bushes.

Better directions than these are sent with every one of the three spraying materials I have named. I mention them here, so that if you read the Fruit-Grower you will soon learn when to spray for each of the pests. That is the way I learned, and every day I learn more. You can figure the number of gallons of spray fluid by estimating that two gallons will spray an average size tree. Thus, for 25 average size peach trees, 50 gallons of spray material will be required.

After using the spray materials above mentioned I have the prettiest little home orchard around the town in which I live.

MARION J. LAMBERT.

Illinois.

Wants to Regulate Express Rates.

At the last meeting of Congress, Representative David J. Lewis from Maryland, introduced a bill proposing government management of the express business of the country. His reasons for this bill are: First, that the present express rates are exorbitant; and secondly, that express companies do not benefit the farmers and country merchants, who constitute nearly half of the population of the United States. His plan differs from parcels post schemes in that the latter limit the weight of packages to eleven pounds, thus tending to take business away from the country merchants. His plan, having no such weight limit, would help country merchants, by bringing goods to their stores. Representative Lewis says that he has worked out a system of rates by which, for example, a package weighing five pounds could be sent 196 miles for 11 cents, while for this same service the present express rates are 25 cents or more.

Both for $1.00

EVERY Fruit-Grower reader probably takes a good paper on general farming, but if you do not read Farm Journal, of Philadelphia, Pa., you are missing something, for it is one of the best papers you could read. It is clean, clever, concise, cheerful, written for everybody connected with the farm. It is full of sunshine, full of gumption, as practical as a plow.

The regular subscription rate of Farm Journal for two years is 35c, but we have just made an arrangement to hold good for a limited time, whereby we can send Farm Journal two full years to anyone, either new or old subscribers, who will send at once, remittance of $1.00 for a year's subscription to The Fruit-Grower.

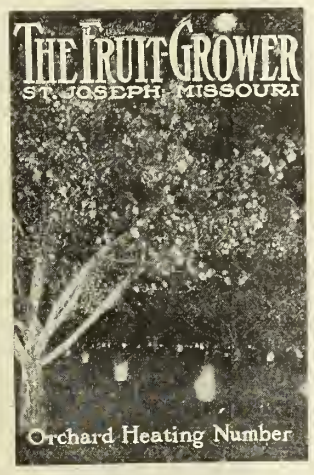
THE FRUIT-GROWER, One Year $1.00
FARM JOURNAL, Two Years ..... .35

$1.35

One Dollar Will Get Both—Remit Today

One of the objects of this offer is to secure a good list of names for sample copy purposes, and in remitting it is a condition that you send the names of three or more friends interested in fruit growing. Take advantage of this offer now, before it is too late, for it may be withdrawn at any time. It will be worth your while to accept this offer, even if your subscription is paid in advance. Address

The Fruit-Grower **St. Joseph, Missouri**



SUBSCRIPTION RATES of THE FRUIT-GROWER

We quote below the regular subscription rates of The Fruit-Grower. We call particular attention to the advantage of remitting at once for three or more years subscription. This places The Fruit-Grower in your hands at a nominal price, the ten-year rate being only 50c per year, and this avoids the annoyance of renewing from year to year.

One Year	**$1.00**	**Five Years**	**$3.00**
Three Years	**$2.00**	**Ten Years**	**$5.00**

The special rates for three, five and ten years apply only to paid-in-advance subscriptions.

To regular subscribers who will pay in advance and send in the name of **One or More New Subscribers**, we will make a rate of **Fifty Cents** a year for two or more subscriptions, or in other words, we will allow you a commission of 50 per cent on both your own and the new subscription. for adding new names to our list.

We prefer remittances in this manner, as we employ no traveling solicitors in our subscription department, and to a large extent depend upon subscribers to increase our list.

All of your friends and neighbors should read The Fruit-Grower. An increased circulation will help us in giving you a better paper, and will materially advance the cause of horticulture. Send in your renewal and at least one new subscriber and take advantage of this offer.

THE FRUIT-GROWER, St. Joseph, Missouri

THE FRUIT-GROWER, St. Joseph, Mo.:

I inclose remittance of $..... for which send The Fruit-Grower.....year.....to the following:

Name of Sender.....

Town..... State.....

Index to Advertisements in This Issue of The Fruit-Grower

Agents Wanted — Page
Bigler & Co. 72
Entomoid Chemical Co....80
National Co-operative Realty Co..80
Shores-Mueller Co. 15
Stevens, Elmer E. 32

Automobiles
Chalmers Motor Car Co....32
The White Company....73

Books
Americana Co. 51
Brunswick, M. & Co....57
Fruit-Grower (Books) 76
Fruit-Grower (Pruning Book)...68
Fruit-Grower (Fruit Growing in Arid Regions) 68
Ghormley, W. H. 57
Hard, C. T. 40
Heller Bros. Co. 37
Hummel, S. H. 72
Humphrey & Sons 72
State Board of Agriculture....65
Stillwell, E. W. & Co....37

Bone Cutters
Mann, F. W. 70

Canning Outfits
Brown, Thomas M. 41
Northwestern Steel & Iron Works ....4 cover
Raney Canner Co....79

Cement Machinery
Farmers Cement Tile Machine Co. 61

Cider Presses
Hydraulic Mfg. Co....66

Commission Merchants
Coyne Bros. 32

Cream Separators
American Separator Co....80

Cultivators
Allen, S. L. 30
Barker Mfg. Co....28
Cutaway Harrow Co....26
Johnston, W. A. 44
Light Draft Harrow Co....26
Mendenhall, E. G. 34
Nash, Duane H. 22

Farm Lands and Real Estate
Address Chas. H. Lawrence....79
American Investment Association 79
Banks & Adcock....79
Beaver Realty Co....79
Bissell, J. H. 79
Box 97 79
Bridgeman, R. B. 79
Cleveland, Frank P....79
C. & O. Ry. Co....66
Duncan, W. S. 79
Farwell, F. O. 54
Fox Hall Farm 79
Fredericks, L. G. 79
Fruit-Grower (Morrisania) 37
Grannis Real Estate Co....79
Greef & Kelly....57
Grower, W. F. 79
Hanson, J. D. S. 65
Hickman, W. T. 79
Hollingburg, H. 79
Holloway, D. 79
Idaho-Washington Development League 79
Irvine, James M. 79
Isch, A. 79
Jantha Plantation Co....68
K. C. Southern Ry. Co....65
Mathis, Albert 79
McCulley, E. 79
McDonald Land & Mining Co....65
Merced Fruit & Land Co....40
Merritt, J. E. 65
Moore, W. J. 79-79-79-79
N. & W. Ry. Co....65
Owner 4193 79
Owner, Box 434....79
Owner, care A. Jordan 79
Polling, Theodore 79
Puterbaugh, J. 79
Prosperity Land Co....75
Reeve, W. S. 79
Rowell Fruit Co. 79
Sanderson 79
Sea Board Air Line Ry. Co....65
Shawhan, B. P. 79
Shenandoah Valley Apple Lands Co. 79
Smith, S. M. 79
Southern Ry. Co....57
State Board of Agriculture....65
St. Louis & Southwestern Ry....65
Texas Land Exposition....65

Page
Thompson, Chas. 79
Webster, E. C. and J. F....79
White, E. F. 79
Wilson, J. A. 79
Winter Haven Farms Co....77

Farm Publications
Barber, H. L. & Co....80
Farm Journal Pub. Co....53
Fruit-Grower (Announcement) ..47
Fruit-Grower (Bond)....46
Fruit-Grower (Calendar) 48
Fruit-Grower (Fruit-Grower and Farm Journal Club)....81
Fruit-Grower (Guide-Book) .... 3 cover
Fruit-Grower (Renewal) 36
Fruit-Grower (Subscription)....81
Fruit-Grower (Subscription)....10
Lippincott, J. B. & Co....64
Rio Grande Valley Magazine....54
Up to Date 66
Wright, F. J. 16

Fertilizers
Commercial Acid Co....20
German Kali Works....60

Food Products
Postum Cereal Co....11, 12, 13

Fruit Packages
Fruit Package Co....34
Pierce Williams Co....26
Wisconsin Fruit Package Co....34
Wright Fruit Package Co....34

Gasoline Engines
Dissinger & Bros. 34
Galloway, Wm. & Co....30
Schmidt Bros. 31
U. S. Engine Co....66

Grading Machines
Baker Mfg. Co....22

Help Wanted
Hood, W. T. & Co....57
Rochelle, W. H. 80-80
Sales Ass'n 80
Sheldon, Thos. B. 80

Hides and Furs
Andersch Bros. 55
Lyon, M., & Co....80
Pembers Fur & Hide House....55
Taylor, F. C. & Co....55

Implements and Tools
Allen, S. L. 30
Automatic Jack Co....66
Bateman Mfg. Co....22
Dorsch & Sons....67
Johnston Harvester Co....22
Luther Grinder & Mfg. Co....33
Myers, C. A., & Co....22
Stewart Skinner Co. 30

Incubators & Poultry Supplies
Barnes, H. F. 79
Belle City Incubator Co....71
Boldts' Poultry Remedy....79
Conkey, G. E., & Co....79
Connisclitfe Poultry Farm....79-79
Des Moines Incubator Co....72
Essex, Robert, Incubator Co....72
Golden Rule Incubator Co....79
Ironclad Incubator Co....70
Johnson, M. M. 70
Knudson Mfg. Co....80
Lee, Geo. H. 72
Mankato Incubator Co....70
Ohio Marble Co....72
Prairie State Incubator Co....72
Rayo Incubator Co....70
Right Incubator Co....71
Savage, M. W. 70
Thompson, S. C. 71
U. U. Co., Box 48....79
X-Ray Incubator Co....71

Insecticides
Blanchard, James A., Co....45
Commercial Acid Co....80
Barker, A. E. 80
Devoe & Raynolds 59
Horticultural Chemical Co....59
Interstate Chemical Co....24
Kentucky Tobacco Product Co....32
Pratt, B. G., & Co....41
Rex Co. 63
Sherwin-Williams Co. 25
Vreeland Chemical Co....23

Lighting Systems
Best Light Co....64
Bright Light Co....23
Home Supply Co....64
Mantle Lamp Co....66
Sun Light Co....65
United Factories 64

Page
Lumber and Building Materials
Chicago Wrecking Co....40
Gordon-Van Tine Co. 27
House Wrecking Salvage & Lumber Co. 41
Mastic Wall Board Co....67

Manure Spreaders
Galloway, Wm., & Co....34

Nurserymen
Algoa Fruit & Nursery Co....79
Allen Bros. 16
Allen, W. F. 57
Anderson, P. A. 79
Appleby Bros. 57
Baldwin, O. A. D. 60
Bauer, J. A. 56
Benson Omaha Nursery....54
Berckmans, P. J. 67
Berrydale Experiment Gardens...56
Boonville Nursery 66
Brammerbush, C. 79
Brunswick, M., & Co....57
Call's Nursery 26, 36
Chattanooga Nurseries 56
Copp & Kibler 79
Cooper, Samuel....54
Crawford, S. E. 77
Davis, Geo. W. 79
Dodge Blackly & Co....77
Ellwanger & Barry 31
Fairmont Nurseries 57
Farmer, L. J. 28
Farmers' Seed & Nurseries Co...31
Fitzgerald Nurseries 79
Freemont Nurseries....57
German Nurseries 3
Grand Mere Nursery 79
Gray's Nursery 79
Green's Nurseries 60
Harbor Springs Nurseries....23
Harbor Springs Nurseries....38
Harrison's Nurseries 28
Harrison's Select Nurseries Co...34
Hawkeye Nurseries 79
Henry, D. J. 56
Horsford, F. 79
Hinshaw, J. W. 69
Holsinger Bros. 23
Holsinger Bros. 38
Horn, A. 58
Hubach, Louis 29
Hurlburt, C. M. 57
Jones, E. W. 41
Kellogg, R. M. 28
Krider, Vernon H. 79
Lightfoot, John 54
Louisiana Nut Nurseries....19
Lovett, J. T. 60
McNallie, D., Plant Co....46
Mayer's Plant Nursery 63
Mount Arbor Nurseries 31
Munson Nurseries 56
Myers, P. J. 54
New Haven Nurseries 57
Newson, A. W. 56
Norton, Arthur, L. 75
Peru Nurseries 55
Randall, Alton E. 79
Rowell Fruit Co....79
Rupert, W. P. 54
Seligman Plant Co. 32
Scarff, W. N. 60
Shenandoah Nurseries 56
Stark Bro's N. & O. Co.... 8
Sterling, J. 79
Storrs & Harrison 26
Taylor Nursery Co....67
Tennessee Nurseries 46, 57
Thompson, Mark 79
The Newburys 79
Thomas, W. W. 29
Turkey Creek Nurseries 79
Waller, O. C. 63
Westgate, H. L. 79
Westminster Nurseries 68
Weston, A. R. & Co....41
Whitten, C. E., Nursery....55
Wichita Nurseries 79
Winfield Nurseries....42-43
Wood, Allen L. 31
Youngers & Co....56

Poultry
Anthony, Joseph 79
Baldwin, Mrs. A. H. 78
Barden, E. H. 78
Barlow, A. G. 79
Beaumont, Floyd S. 79
Berger, H. C. 78
Berry's Poultry Farm....71
Bliss, D. J. 78
Boomgaarns Farm 78
Boss, Robert C. 78
Briggs, Edgar 78
Brill, F. R. 78
Brinner, W. H. 78
Brocker, Robert 78
Brown, Harvey 78

Page
Bruns, Jno. F. 78
Burk, A. P. 79
Burkman, Amil 78
Byrd, Mrs. J. N. 78
Caldwell, H. A. 78
Carson, Mrs. A. L. 78
Carys Farm 78
Chelton, Edith 78
Clark, Will 78
Clymer, C. Henry 78
Colby, C. 78
Cole, John, M. D. 78
Congdon, W. A. 78
Conradt, C. G. 78
Coons, Frederick 78
Cowan, W. E. 78
Crosby Bros. 78
Crow Creek Poultry Farm....78
Crystal Poultry Yards 78
Damann, F. J. 79
Davis, A. V. 78
Davis, S. H. 78
Dietrich, Dr. Thomas 79
Daugherty, W. H. 78
Doyle, John 79
Driggs, James A. 78
Duby, H. S. 79
Edgewood Farm 78
Egbert, W. W. 78
Elm Creek Place 78
Emwood Farm 79
Enterprise Yards 79
Essig, A. 78
Failing Poultry Farm 79
Firestone, John B. 78
Fisse, Henry, Jr. 78
Forest City Cornish Yards....78
Fowler Egg Farm....78
Fowlers, The 78
Foy, F. 72
Frantz, O. C. 78
Fries, Max 78
Garnett, F. L. 78
Glenoak Poultry Yards....79
Granite State Poultry Yards....78
Green, Horton 78
Green, J. Ed....79
Greider, B. H. 72
Griffith, Paul & Gordon....79
Griffith, W. I. 78
Hall, B. F., Jr. 78
Hamilton, Mrs. W. S. 78
Hardman, W. H. 78
Harris, Lee 79
Harter, E. M. 79
Hartman, Geo. 72
Heilman, Frank 78
Helpman, J. L. 78
Highland Poultry Farm....78
Higley, T. F. 78
Hillcrest Farm 78
Hockstadter, J. A. 78
Hoffman 79
Hoppe, Wm. F. 78
Huecker, Fred 78
Huested, Mrs. Chas. 78
Jackson, Prof. F. H. 78
Jaqua Lonella, E. 78
Jones, Mrs. D. C. 78
Kahler, B. F. 79
Kalvin, Dr. Henry M. 79
Keefer, J. H. 78
Kilpatrick, Frank 79
King, G. M. 78
Knodle, B. C. 78
Kollmeyer, J. H. 78
Kopfstein, A. W. 78
Krebill, A. D. 78
Lafreniere, N. L. 79
Lamson, H. 78
Lang, C. F. 78
Leggett, G. D. 78
Leidy, M. H. 78
Lewis, L. 78
Lilly White Poultry Farm 78
Maplewood Poultry Farm....79
Mason, C. C. 78
McClure, Chas. 78
Medaris, Troy 78
Meyers, E. A. 78
Miller, K. I. 78-78-78-79
Minkel & Co. 79
Mitchell, G. A. 79
Myers, Mrs. Clyde 79
Neville Poultry Farm....78
Newberry, Rosalie 79
Newcomb, F. S. 78
Oertel, Fred 78
Ohio Valley Hatchery 79
Oldfield, Mrs. M. F. 79
Orchard Knob Poultry Farm....79
Oveson, Mrs. Christian 78
Palmer, Chas. M. 78
Peck, Frank F. 78
Peerless Poultry Farm....78
Peterson, Otto, Jr. 78
Pfile, Henry 72
Plymouth Rock Squab Co....79
Posely, H. E. 78
Powell, C. D. 78
Premium Poultry Farm....79
Qualls, John F. 78
Reed, Bernard 79

Page
Reynolds, H. V. 78
Ridge Egg Farm 78
Sawyer, W. M. 79
Schuman, Ed J. 78
Schmied Bros. 78
Seymour, A. H. 78
Shaw, F. L. 79
Shepard, Geo. 78
Sheppard, Cecil 78
Shields, R. R. 79
Shirley, Sylvester 78
Snyder, W. C. 78
Souder, H. A. 79
Southern Slope Poultry Farm....79
Southside Poultry Yards....78
Spence, J. F. 79
Spitze, Geo. L. 78
Stephens, Orin 78
Stevenson, Marion 78
Stick, Harley R. 78
Stock, Verne D. 79
Street, L. R. 79
Sweet, Chas. T. 78
Teaaley, Mrs. D. O. 79
Turner, Z. T. 78-78
Twin Brooks Farm 79
Valley View Poultry Farm....79
Waldron, Edw. F. 79
Walnut Hill Hatchery 79
Wardwell Poultry Yards....78
Watson, Ira 78
Weber, W. A. 71
Wegener, E. H. 78
Welch, Harry 78
Wells, M. E. 78
Wenz & Mackenzie....79
Wise, Julia E. 79
Wood, F. F. 78
Wright, W. F., Sr. 78
Wyandotte Ranch 78
Yarmond Poultry Farm....78
Yoder, Levi D. 79
Zimmer, C. H. 78
Ziemers Poultry Farm....79
Zurburg, C. H. 79

Pruning Tools
Ideal Pruning Saw Co....58
International Tool Co....22
Monarch Pruner Co....34
Rhodes Mfg. Co....63

Orchard Heaters
Frost Prevention Co....19
Hamilton Orchard Heater Co....19
Ideal Sales Co. 58
Richardson Frost Prevention Co..20
Round Crest Orchard Heater Co..21
Taylor Instrument Co....22
Ward Orchard Heater Co....58

Paints
Rice, A. L. 65

Railway Companies
C. & O. Ry. Co....66
K. C. Southern Ry. Co....65
N. & W. Ry. Co....65
Sea Board Air Line Ry. Co....65
Southern Ry. Co....57
St. Louis & Southwestern Ry....65

Roofing Materials
Barber Asphalt Paving Co....57
Gordon-Van Tine Co....27

Seedsmen and Florists
Anderson, A. C. 31
Berry, A. A., Seed Co....34
Buckbee, H. W. 34
Burpee, W. Atlee 35
Burrell, D. V. 38
Cole's Seed Store 54
Farmers' Seed & Nursery Co....31
Ferry, D. M. & Co....29
Field, Henry, Seed Co....29
German Nurseries 3
Great Northern Seed Co....21
Griswold Seed Co....21, 34
Hickory Seed Co....34
Iowa Seed Co....72
Livingston Seed Co....21
Salzer, John A. 29
Stokes, Walter P. 34

Sprayers and Appliances
American Sprayer Co....62
Bateman Mfg. Co....63
Bean Spray Pump Co....20
Beck Power Sprayer Co....49
Brown, E. C. & Co....35
Carbondale Instrument Co....23
Cook, J. P. 79
Crown Specialty Co....35
Deming Co. 6
Detroit Engine Co....23
Cushman Power Sprayer Co....1-5
Fairbanks, Morse & Co....25
Field Force Pump Co....24
Foster Steel Stanchion Co....34
Friend Mfg. Co....39
Gould's Mfg. Co....7
Hardie Mfg. Co....41

Page
Hurst, H. L., Mfg. Co....2 cover
Jones-Poat Mercantile Co....20
Mechanical Rubber Co....52
Morrill & Morley 20
Myers, F. E., & Bros....62
New-Way Motor Co....49
Owen Sprayer, W. H., & Co....50
Quaker City Rubber Company....18
Rochester Spray Pump Co....62
Smith, D. B., Sprayer Co....41
Spramotor Co 20
Stahl, Wm., Sprayer Co....44
Standard Stamping Co....20

Stump Pullers
Hercules Mfg. Co....61
Milne Mfg. Co....30

Talking Machines
Victor Talking Machine Co....64

Tanks
Columbian Steel Tank Co....15, 52

Tree Protectors
Burlington Basket Co....60

Veterinary
Beery, Prof. Jesse....58
German Distemper Remedy Co...54
Lawrence Williams Co....54
Young, W. F. 54

Wagons, Wheels, Etc.
Electirc Wheel Co....61
Emphe Mfg. Co....54
Harvey Spring Co....30
Split Hickory Wheel Co....66

Washing Machines
Dodge & Zuill 68

Water Supply Systems
Missouri Water and Steam Supply Co. 77

Well Drilling Machines
American Well Works 58
Keystone Well Works....58

Windmills
Stover Mfg. Co....10

Wire Fencing
Advance Fence Co....55
American Steel & Wire Co....13
Brown Fence & Wire Co....55
Coiled Spring Fence Co....55, 55
Interlocking Fence Co....15
Kitselman Bros. 55
Ottawa Mfg. Co....55
Tiger Fence Co....55
Ward Fence Co....55

Miscellaneous
Address Box 506 79
Allcock's Plasters 17
American Writing Machine Co...23
Bateman Mfg. Co. 30
Benjamin, G. S. 54
Brooks Rupture Appliance Co....54
Burnham-Munger-Root Co. 31
Chandlee & Chandlee 66
Coca Cola 46
Coleman, Watson E. 66
Collins, Capt. W. A. 54
Cox, J. & Co....80
Dale Watch Co....66
Dodge & Zuill 68
Du Pont Powder Co....58
Educational Investment Co....66
Falkey, Luther....80
Fruit-Grower (Printing)....38, 40
Gardner Office Supply Co....66
Gregory, J. A. 80
Haux, Dr., Spectacle Co....66
Home Specialty Co....80
Hoyt, W. A. 80
Kiger, Orville 80
Leffel, Joseph 80
Marlin Firearms Co. 26
Menges, H. 58
National Co-operative Realty Co. 66
National Paper Box Co....37, 40
Oakwood Mfg. Co....64
Old Dutch Cleanser....67
Pelton, J. L. 79
Plapao Laboratories 54
Rife Engine Co....22
Rochelle, W. H. 80
Savage, M. W. 71
Soot Destroyer Co....68
Sperry, D. R., & Co....66
Stover Mfg. Co....66
Stirdivant, Geo....79
Strout, E. A., Farm Agency....68
Tansel, R. B. 80
Townsend & Wyatt D. G. Co....67
Wickersham, G. H. 80
Young People's Card Exchange Club 80

Contents of This Issue

Page
Amateur Succeeded 36
Antiseptic Wash 58
Aphis 41
A Popular Periodical....68
Apple Blotch 12
Apple Scab 12

APPLE SHOWS:
American Apple Congress 44
Cornell Fruit Exhibit....46
Michigan Fruit Show 46
National Horticultural Congress....44
National Apple Show....44

Berry Notes 74
Bitter Rot of Apples....11
Black Rot on Grapes....38
Bordeaux Mixture, Formula....36
Brown Rot on Stone Fruits....38
Business Farming 40
Cabbage Worms, To Kill....27
Canning Plants Popular....57
City Men as Fruit Growers....14
Combatting Woolly Aphis....16
Compressed Air Sprayer 50
Controlling the Moth....9
Cooking Contest for Apples 46
Country Life Conditions, To Improve....77
Cow Feed in the Mountains....37
Crown Gall on Almond....32
Cure Pork, Best Way to....80
Darby Farm Story....40
Downy Mildew of the Grape....12
Electric Light on the Farm....52
Express Rates, Wants to Regulate....81
Fall-Web Worm 13
Fence Posts, Choosing Good....80
Fifteen Years Old....14
Fillers to Use, What....36
Fire Blight of Pear and Apple....17, 77
Flat-Headed Apple Tree Borer....13
Florida Fruits and Vegetables....28
Garden Seesd, Order Early....77
Garden, The Farm....37
Good Work in Orchard....10
Grapes in Washington....29
Grape Root Worm....20
Gypsy Moth Survives....61
High Rate, Poor Service....47
Hose for Sprayers....74
Home Orchard, Care of....62
Horticultural Reports Next Month....77

Page
HORTICULTURAL SOCIETY MEETINGS, RECENT:
Future Meeting Dates....46
Michigan Fruit Growers 69
Northern Illinois 46
Northwestern Iowa 45
Southern Illinois 62

How The Fruit-Grower Helps Its Readers....47
How to Make $400 an Acre....37
Ice Houses 63
In the Berry Fields 56
Kerosene Emulsion, Formula....49
Lime-Sulphur Formula 49
Lime-Sulphur Sprays 80
Massachusetts Demonstration Orchard....60
Minnesota Fruit Growers' Plan to Organize....77
"Moon Farming" 37
Need More Home-Grown Produce....15
New Bulletins 55
Nursery and Seed Firms....22
Nut Growers' Convention 75
Ohio Horticultural Society....46
Orchard, Care of....30

OUR HOME FOLKS:
Cooking Recipes 67
For Coughs and Colds....65
Old-Fashioned Nurse 65
Our Chafing Dish Club....67
Prize Offer 64
Sensible Dressing 66
The Social Hour 68
The New Home 66
This Is to You....64
Thought for New Year....64

Ozark Fruit Growers' Association Report....50
Paint, Use of, on Farm....57
Peach Fruit Spot....32
Peach-Leaf Curl 12
Peach Borer 11
Peach Scab 11
Photographer Turned Farmer....74
Planting Plans 3-4
Plum Curculio, Fighting 73
Points for Beginners 18
Prize Spraying Picture....69

POULTRY:
Brown China Geese....71
Checking the Roup....72
Infertile Eggs Keep Best....72
Light Brahmas and Fruit....71
Profits in Poultry....70
Vetch for New Land....72
Yarding on the Farm....70

Proof of the Pudding....77

QUESTIONS AND ANSWERS:
Borers, Protecting from....54
Getting Rid of Alkali....55
Pruning Currant Bushes 55
Several Important Questions....55
Should Soil Be Analyzed?....54
Trapping Ants 54
Trees Did Not Do Well....55
Varieties for Arkansas....54

Renewing Old Orchard....59
Renovation Returns 61
Rex Lime-Sulphur Wins 68
Round-Headed Apple Tree Borer....16
Rules for Use of Fertilizers....77
San Jose Scale? Do You Know....16
Side Lines for Fruit Farmers....47
Seed Growing in Northwest....15
Seed Situation 37
Self-Boiled Lime-Sulphur....38
Selling Plan that Won....76
Soils for Orchards....69
Sooty and Fly-Speck Fungus....13
Spray for Vineyards....20
Sprayer, An Improved Barrel....57
Spraying Experience 19
Spraying for the Public....73
Spraying, Good Returns from....17
Spraying, High Pressure....48
Spraying, Notes on....53
Spraying, Successful 17
Spraying, Successful 49
Suggestions for Beginners 34
Taking Information to the Farmer....14
Tomatoes in Oklahoma....37
Tree Doctors 24
What to Grow for Early Market....37
Would Keep Out Western Apples....45
Wounds, Covering the....25
Wounds Heal Quickly, To Make....56
Woman Gets Prize....26
Young Orchard Pays Its Way....17
Zerr Orchard, Pa. 30

Get Good Thermometers

Every year fruit-growers have need to keep record of temperatures, and too many of them use cheap, low-grade thermometers from which to secure the records. Good thermometers should be kept in every orchard, and if possible a self-registering thermometer should be installed. Then accurate records can be kept. This is all important if orchard heaters are to be used.

Do your neighbors spray their orchards, or do they let their bugs come over and feed on your fruit? Your request on a postal card will give them a sample copy of The Fruit-Grower, with a proposition that will encourage them to spray.

Renew your subscription now.

Secure and Profitable

These essentials of a good investment are combined in our

7% First Mortgage Gold Bonds

Paying Interest of 7%

payable every six months in coupons attached, which can be collected through your local bank. Issued in denomination of $100, and fully protected by the entire assets of the company. These bonds are dated July 1, 1907, and run ten years.

Write for full details and booklet.

THE FRUIT-GROWER

St. Joseph, Missouri

Capital Stock, $100,000.00, Fully Paid

34.05
W F

Volume 23 Number 2

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

"The National Farm Magazine"

February 1912

Gardening and Poultry

Title Registered In U. S. Patent Office
Copyrighted, 1912, by The Fruit-Grower, St. Joseph, Mo.

Classified Advertisements, Pages 72, 73, 74, 75, 76
Index to Advertisements, Page 78
Table of Contents, Page 77

Ten Cents
One Do

HURST SPRAYERS

On Free Trial

No Money in Advance

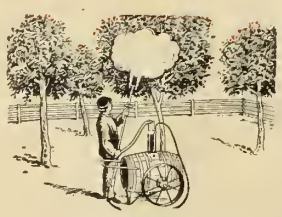
Let Us Send You One of These Sprayers at our expense, to test in your field or orchard. You needn't send us a cent of your money, make any bank deposit or in any way advance any money until you are fully satisfied.

THERE are no strings to OUR free trial offer. If, after testing the machine you decide to keep it you can pay us in full or you can pay a small amount each month until it is paid for, or you can wait until next November 1st, and pay for the machine out of the extra profit that it will surely make for you.

Big Profit in Spraying

No matter how you buy a Hurst Sprayer it will not only not cost you a cent but will make you money besides, for the increase in yield from spraying will more than pay for out best machine even though you have only a couple of acres. You cannot raise fruit, potatoes or any crop that suffers from fungus or insect pests without spraying, any more than you can keep up the fertility of your farm without fertilizing. You insure your buildings from loss of fire and you should by spraying insure your trees against the deadly San Jose Scale and other insect pests which not only cut your crop in half but destroy your trees.

"Fitz-All" Barrel Sprayer



Not an ordinary barrel sprayer, but an exceptionally well-made and perfectly constructed apparatus. It fits any barrel or tank. It can be placed in center or at side of the barrel end, or on the stave side. Movable adjustable braekets hold pump solidly in place. Develops high pressure and easy to operate. Parts exposed to the chemicals as plunger, plunger case, valves, strainer, are all made of solid brass. Most durable pump made. Perfect agitation—a long paddle working at the side of pump and vacuum agitator at base keep the mixture thoroughly churned and strainer clean at all times. The only all metal strainer cleaner on the market and the only one that will not give out and cause trouble. Can be used with one or two leads of hose as desired. Equipped with the Hurst Improved Never-Clog Nozzle. 5-year warranty. Send coupon or post card today. Be first to write.

Horse Power Potato and Orchard Sprayer

"No tree too high, no field too big for this king of sprayers." For the big growers of fruit, grapes, potatoes, etc. Most powerful horse-power machine made; 60 to 100 gallon tank for one or two horses. One man with the machine can do more work than two men with the old style sprayers. Works "automatically" in orchard or field—no hand pumping required. If you are tired of back-breaking hand pumping, and of paying out half your profit for hired labor, get this labor saving machine—it will pay for itself the first season.

It is made for hard service. Heavy steel axle, cypress wood tank, one-piece heavy angle iron frame, metal wheels, brass ball valves, plunger, strainer, etc. Big pump gives powerful pressure. Produces vapor spray and prevents scab, rot and insects from cutting your crop in half. Spray-arms and nozzles adjustable to any width or height of row. Light draft. Guaranteed for five years.

Spraying Guide Free

This complete spraying guide showing cuts of all the insect and fungus pests with full description, remedy and complete instructions, is free to our customers. It is printed in plain language easily understood by anyone and is the only book that will tell you just what is wrong with your trees and what to do for them. No fruit grower or farmer should be without it.

How They Are Made

All Hurst Sprayers develop high pressure and produce a vapor spray that penetrates to every part of the foliage effectually controlling all fungus and insect pests. They have brass ball valves, brass plunger, packing band, strainer, etc., and are made to last. Only the best of materials are used throughout. Each machine has a thorough agitator which insures an even distribution of the chemicals. They are simply constructed and can be operated by anyone.

Won the Gold Medal

In the spraying machine contest held by the National Horticultural Congress at Council Bluffs, Iowa, in November, 1910, the gold medal for sprayers in our class was won by a Hurst Sprayer. This contest was open to the world and surely proves the superiority of our machines.

5-Year Guarantee

An iron-bound steel-riveted guarantee for five years goes with every Hurst Sprayer, which is further evidence that they are made right. This guarantee protects you.

Get a Sprayer Free

If you are the first in your locality this season to get a Hurst Sprayer on free trial, we have a plan that will give you your sprayer entirely free—without you paying even the freight. This offer does not require you to do any canvassing or soliciting. It will take only 15 minutes of your time. We do the work. Fill out the attached coupon or write us a letter or post card **today** telling us which machine you are interested in and we will send you **free** our big catalog and condensed spraying guide and we will tell you all about our **free sprayer offer** and our **free trial proposition.** Don't delay but write us at once and save money.

The H. L. Hurst Mfg. Co.
1811 North Street CANTON, OHIO

Man Power Potato and Orchard Sprayer

Sprays anything, everything. Potatoes, truck, etc., 4 rows at a time. Also first class tree and vineyard sprayer. Develops high pressure and is easy to operate.

Cheap in price, light, strong and durable. Has 28-inch wheel with 3-inch wide tire, makes it easy to push along. The 10 or 20-gallon tank made of heavy galvanized iron, coated on inside with acid-proof enamel—will last 10 to 12 years.

Spray-arms adjustable to any width or height of row. Can be thrown straight up or at any angle for spraying vineyards, berries, etc. Equipped with Hurst Improved Never-Clog Nozzles. Handles all solutions.

In field spraying the machine generates its pressure automatically as you push it along, and in orchard spraying you operate the pump by hand the same as the barrel sprayer. Easily changed for either work in 5 minutes. No wrench required to do it. No leather or rubber about this pump to cause you trouble. Brass ball valves, plunger, strainer, etc. Warranted for 5 years. Write today—be first.

Gasoline Power Sprayer

For the large fruit grower. The special features of this sprayer are: short turn gear, large capacity, light weight, high pressure, automatic pressure regulator (without relief valve) cyclone agitator and a never-failing engine. The engine on this outfit is a 2½-horsepower four-cycle vertical frost-proof water-cooled engine which is very simple in construction and does not require a mechanic to keep it running. The engine can be removed from the sprayer by simply loosening four bolts and can be used for general farm work. The pump is of the duplex type with outside packed plungers, which are kept lubricated at all times by means of grease cups. At 200 pounds pressure the pump will discharge from 5 to 6 gallons per minute. The tank is made of cypress wood and is of 200-gallon capacity. The agitator is of the propeller type, which fairly boils the solution. The frame is steel which is light, strong and durable. This is the power sprayer you have been looking for. We also build this machine in the low-down type of 100-gallon tank for hilly orchards or for use with one horse. Send in the coupon below and get our special introductory offer.

☞FILL OUT, MAIL TODAY☜

COUPON H. L. HURST MANUFACTURING CO.
1811 North Street Canton, Ohio

Please send me full detailed information about your.....

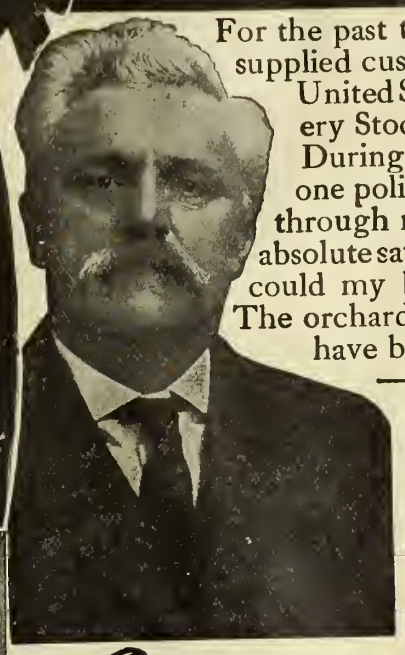
.....Sprayer,
also catalog, condensed spraying guide and copy of "TRIAL OFFER."

Name.....

Town.....State.....

I SELL TREES & SEEDS THAT GROW

SAXONIA PEA



For the past twenty-five years, I have supplied customers in all parts of the United States with Reliable Nursery Stock and Seeds of all kinds. During that time, I have pursued one policy—Sell direct to planters through my catalogue, and to give absolute satisfaction. In no other way could my business have succeeded. The orchards planted from my trees have borne fruit for many years—and the stock was satisfactory, else I could not have continued my business under the same policy, by the same management, for twenty-five years. I test them and see that they measure up to the catalogue—then you will know why my business increases in volume every year.

TREE HYDRANGEA

Carl Sonderegger

Trees That Grow

For 1912 we have a complete assortment of FRUIT TREES, FOREST TREES, ORNAMENTAL AND SHADE TREES, FLOWERING BULBS, SMALL FRUITS, GRAPE VINES, ROSES, PERENNIAL PLANTS, FLOWERING SHRUBS.

Our stock of Hardy Perennials, such as Phlox, Asters, Chrysanthemums, Peonies, Hollyhocks, Coreopsis, Achillea, Golden Glow, etc., is especially large. We can quote right prices on any quantity.

Besides all Standard Varieties, we have some specialties and novelties of great value. Gooseberries and Currants raised in tree form 4-6 feet high; Dwarf Apple and Dwarf Pear for the small garden or as so-called fillers; New Everbearing Red and Black Raspberries that yield berries all summer. We have also a good stock of Himalaya berries and offer them at very low prices. All are fully described in our catalogue.

We have some bargains in budded Apple, one year old, and have an exceptional good assortment of Peach, especially in the 2-3 and 3-4 feet sizes.

WE PAY FREIGHT ON ALL ORDERS FOR NURSERY STOCK AMOUNTING TO $10.00 OR OVER

Seeds That Grow

Our stock of Seeds comprises a complete assortment of the best seeds that can be produced.

Alfalfa, Clover and Grass Seeds, Grass Mixtures, Seed Corn, Seed Grain, Seed Potatoes, Sugar Cane, Kaffir Corn, Rape, Millet, Plants for Bee pasture, Tree Seeds, etc.

Vegetable and Flower Seeds. Garden Tools, Sprayers, Insecticides.

We have a new law in Nebraska specifying the purity and germination of Grass, Clover and Farm Seeds. After this, we will only furnish seeds that come up to the Nebraska Standard.

Do not overlook our Special Flower and Vegetable Seed Collections

See Some of Our Prices

Apple, budded	7c each
Pear, budded	12c each
Plum, budded	15c each
Cherry, budded	12c each
Peach, budded	7c each
Concord Grape, 1 year No. 1 plants	$3.50 per 100
Currants	.75 per 10
Black Locust, 8-12 inch	$1.60 per 1000
Catalpa Speciosa, 8-12 inch	$3.50 per 1000
Larger sizes of seedlings accordingly.	
California Privet, 18-24 inch	$3.00 per 100
Tree Hydrangea, as per picture hereby, 4-5 feet	75c each

Big 10-Cent Special Seed Offer

1 5c pkt. Mixed Colors Petunias
1 10c pkt. Extra Fine Mixed Pansies
1 10c pkt. Giant Single Pinks
1 5c pkt. Finest Mixed Poppies
30c Worth for 10c, Postpaid

36 Vegetable Packages, $1.00

1 full sized package of 36 varieties of reliable vegetables, including 2 beans, 2 cabbage, 2 lettuce, 1 sweet corn, 3 melon, 2 onion, 2 radish, 2 tomato, 1 beet, 1 cauliflower, 1 carrot, 1 celery, 1 cucumber, 1 endive, 1 leek, 1 parsley, 1 peas, 1 parsnip, 1 pepper, 1 pumpkin, 1 spinach, 1 squash, 1 salsify, 1 turnip, 1 rutabaga, 1 kale, 1 garden cress and 1 mixed herbs. All, postpaid, only $1.

REID'S YELLOW DENT

QUEEN OF COLOR

Vegetable Seeds We wish to call your special attention to our large line of Vegetable and Flower Seeds. Aside from the Standard Varieties we have a goodly number of the Best Novelties for this season.

Our "German Ice Head Lettuce" is unequaled in quality, tenderness and size. The "Prizetaker Onion" is the largest and handsomest and most delicate flavored onion on the market. For the home garden you cannot find a better Musk Melon than the "Rust-Resistant Rocky Ford." You will also find the Sweet Corn and the New Tomatoes we offer in our novelties real Novelties of Merit.

Flower Seeds are always in demand and we furnish you the best that the world produces. We get them from the foremost European and American specialists. You will get seeds that grow.

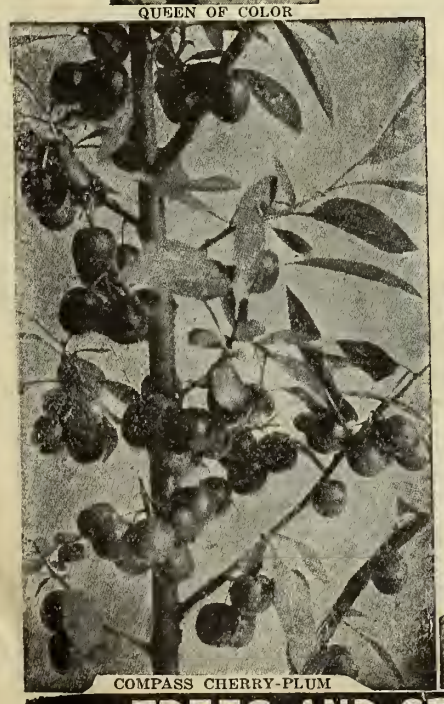
JONATHAN

Send for Our Big Catalogue

It is a book of 104 pages, with finely lithographed cover, containing full descriptions and hundreds of natural illustrations of fruits, vegetables and flowers. It is the most complete catalogue of nursery stock and seeds now published in America. These books cost us 15c apiece in hundred thousand lots; you can get a copy for the asking, if you write us now and mention The Fruit-Grower.

YOUR ORDER

whether large or small, will always receive our careful attention. You can send us your combined seed and tree order and need not buy two money orders, nor send to two different firms; and you will get what you order.



COMPASS CHERRY-PLUM

German Nurseries & Seed House

Box 500 BEATRICE, NEBR.

TREES AND SEEDS THAT GROW TREES AND SEEDS THAT GROW

Many Times a Year, Regularly, You Need a Reliable Hand Spray Pump. Here are Two "Winners" and Some Facts About Them That You Need to Know!

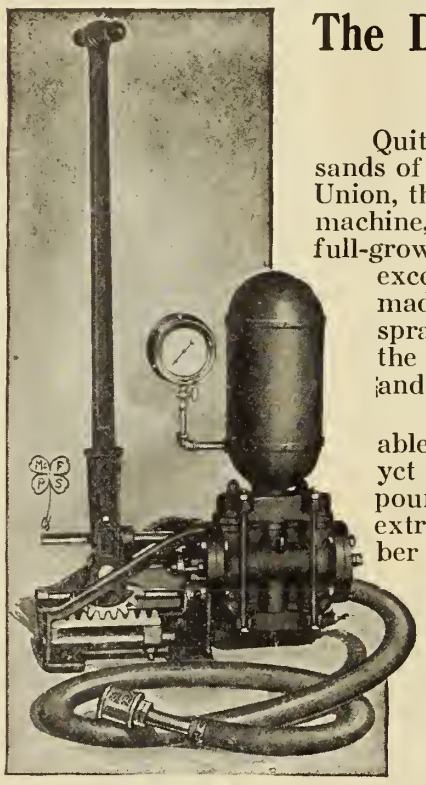
A dozen times a season, more or less, you wish you had a good **hand** spray pump. Perhaps you operate power machines, but you need some hand sprayers besides.

Power outfits sometimes "lay off" for causes for which they are not to blame. For instance, your batteries may give out when you haven't any more on hand. You can't blame **that** on the engine, can you? Yet the whole outfit must lie idle till you can get some new ones. Or, if you were to find you hadn't enough gasoline to put you through the day, you wouldn't blame it on the engine, would you?

Those things may happen almost any time—and when they do, you'd be mighty glad for some hand machines to fall back on. And then consider this—if you have several different varieties of the same fruit you've often noticed that the trees bloom at different times and that the petals are dropping for several days.

NOW, since you've got to spray each tree at the right time—just after the petals are off, but before the calyx has had time to close—you must go over the orchard two or more times in order to catch every tree. It may be that only a few trees need it on a certain day; but you can't afford to pass them by—their fruit is worth too much to lose, and the spraying you do—just after the petals drop—is YOUR MOST IMPORTANT ONE! So you'll have to take parts of two or more days to it, though some days you'll need to go over only a few trees—just those that are ready.

A DEMING Hand Sprayer would do such work perfectly—and any other spraying that you have to do. We show two styles here—the **"Samson"** and the **"Planet."** Using either of them, you can get up a pressure almost as effective as you could with a first-class power outfit. Either one can be gotten ready on a minute's notice—just set it on a sled or wagon, fill up the barrel or tank, and there you are. You can take it practically **anywhere**; it's so light, compact and takes up so little room that you can drive with it into places where you could hardly take a power rig—steep hillsides, rough ground, corners where you have to make sharp turns, and so on.

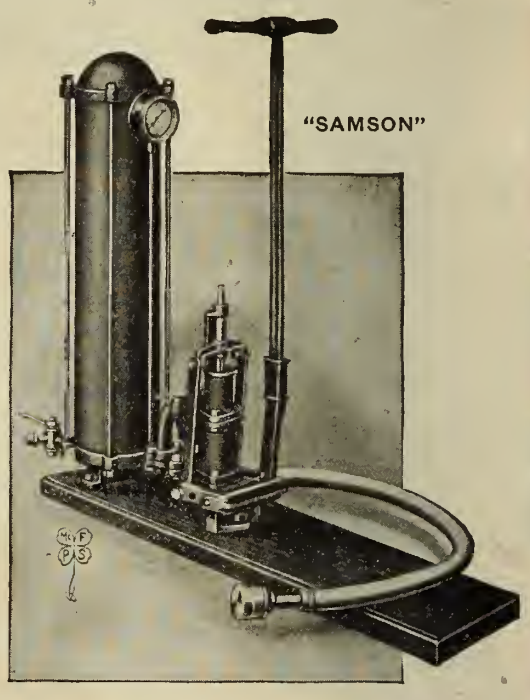


"PLANET"

The Deming "Samson" Spray Pump You Know Very Well Already

Quite likely you've used one yourself—we've sold thousands of them, shipping to every fruit-growing state in the Union, the sales increasing each season. For an all-around machine, to do effective work in good-sized orchards of full-grown trees, we do not think any spray pump ever made excels the "Samson." In the four years that we have made it, we have proved it one of the best "in-between" spray pumps ever designed—that is, most effective for the man with large trees who needs a power sprayer and yet hasn't quite made up his mind to buy one.

The "Samson" throws spray with great force, enables the operator to cover a lot of trees in a day, and yet works very easily considering that 100, 125 or 150 pounds' pressure can be maintained steadily without extra-hard pumping—depending of course on the number of nozzles used.



"SAMSON"

Now We Introduce a New Hand Sprayer, The "Planet"

—and we predict for it as great popularity as the "Samson" has heretofore enjoyed. We shall continue to manufacture the "Samson," as we feel sure there is a splendid opening for two such machines, and that owners of large orchards, as well as those whose trees cover only an acre or so, will be quick to appreciate their merits.

We need not say much about the strength and the durability of the "Planet"—the illustration shows it in every line. You can fairly **see** the "character" that's built into this pump. You don't have to be told that it will work steadily, put up a heavy pressure, and stand all sorts of hard knocks—the picture **shows** that. It's designed for the comfort of the operator. The handle is just long enough—you can pump for hours, without getting half as tired as you would if working the handle of a barrel pump. The leverage helps, too—you get a big "purchase" with that long stroke.

Another thing we want you to notice is the "cog" principle. This holds the pump plunger in **perfect alignment,** preventing sidewise motion which would cause friction, and wear out the cylinder. The air chamber is large enough to give a good "reserve" to hold the pressure steady and make pumping easier. A gauge is furnished, registering up to 400 pounds. Other features are of the same high order as you find in **all** Deming Pumps—brass valves and valve seats, brass plunger, brass-lined cylinder—brass working parts, in short, wherever the liquid touches.

Get Our Catalogue and Find Out All About These and Our Other Sprayers

We make outfits for every spraying need—various types of gasoline engines; pumps for connection with the engine you already have; and hand pumps in many styles—barrel pumps, knapsack and bucket outfits, in addition to those described above. The **prices** are right, and nearly twenty years' experience making sprayers is your guarantee that the **goods** are right.

You Can Buy Deming Outfits From Your Local Hardware or Implement Dealer

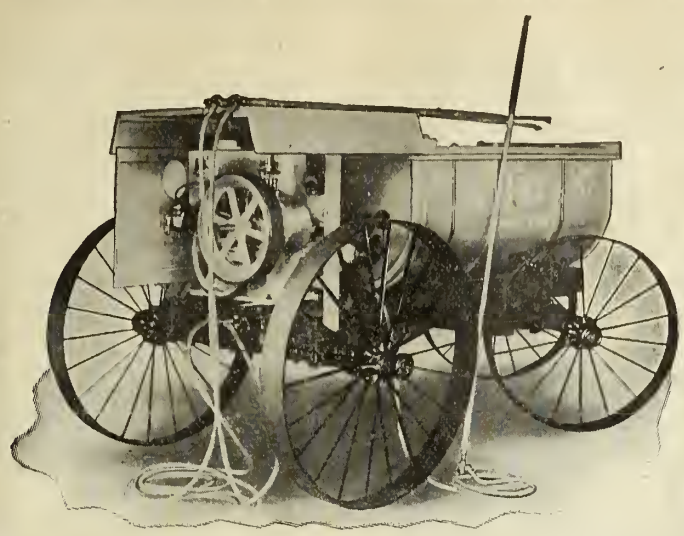
Deming Spray Pumps are sold by our agents in all large cities, and by leading hardware and implement stores. **Your** dealer has them, or can get them for you. Better see him **now**; if he refuses, or tries to sell you something else, write us mentioning his name, and we will either tell you where you can get what you want, or will supply you direct at factory prices.

THE DEMING COMPANY *Makers of Pumps For All Uses* **330 Success Bldg., Salem, Ohio**

DEMING

SPRAY PUMPS

DEMING

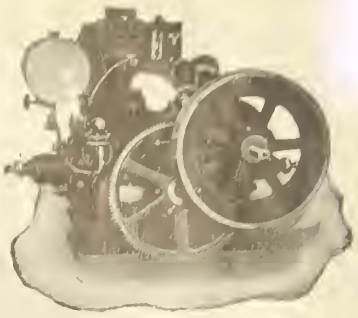


AD 1—See Corner Coupon

THE COAST-TO-COAST SPRAYER

HERE IT IS—THE NEW

"Western" Friend Power Sprayer



New Western Motor-Pump.

The October and November Fruit-Grower said this machine would pump **250 Pounds Steady Working Pressure with Increased Capacity—and it will.** It is the simplest, strongest, most compact, smoothest working **High-Pressure Power Sprayer on Earth.** It has Quick Detachable Valves—Separable Seats—Quick Adjustable and Accessible Packing—Quick Detachable Pump Plungers and the **Celebrated Bosch High-Tension Magneto. (No Battery.) $10,000 Could Not Buy a Better Machine.** The first Gasoline Power Sprayer was a "Friend"—Fruit-growers have the benefit of this priceless experience.

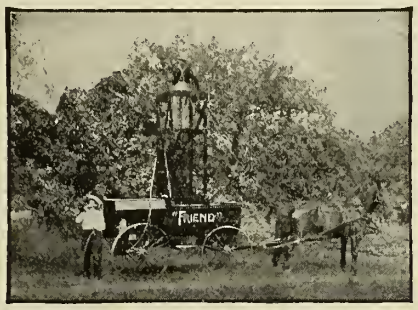


Fig. 1—Regular Orchard Model. Hundreds Now in Use in the West.

AD 2—See Corner Coupon

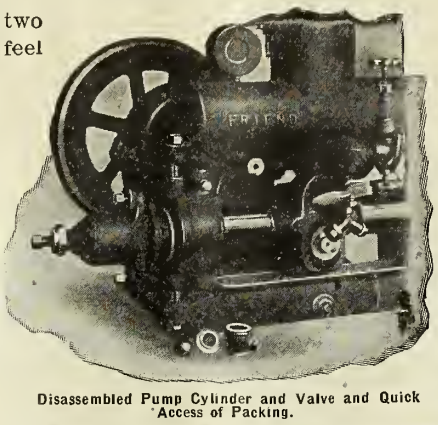
Many New Ideas

are sprung on the people each season. Some are **Good—MORE are not.** Is it not true that during all this time the **"FRIEND"** has moved steadily forward with Real, Substantial Improvements **that have Made Good?** We ask no fruit grower to do our experimenting. He has **troubles of his own.**

Here is how only two out of hundreds feel about it:

"Friend Mfg. Co., Gasport, N. Y. Gentlemen: We have your quotation of the 23rd. Enclosed you will find our check for one of your new 1912 Western sprayers equipped as per your specifications. We are pleased to say we have used the "Friend" power sprayer for four seasons and consider it in a class by itself for all kinds of work in orchards, especially in the use of home-boiled lime-sulphur mixture. With the machine we now have, in the last two seasons we have put through it over 30,000 gallons of lime-sulphur besides several thousand gallons Bordeaux mixture, and have never had occasion to look at the packing of the pump, which feature alone is worth the price of the machine to us. We have never had to stop five minutes with the machine in the orchard. We are ordering this new Western model for use in our orchards along with the one we now have. Yours is the simplest pump on the market, in our opinion at least after 8 years' experience with power outfits and they have no equal. The fact is, we can not find words to express the satisfaction we have had in the use of your machines; they are simply so far ahead that competitors can never catch up. Your new machine must be perfection; make shipment as soon as possible. There is a great future for your machine in Canada. Yours very truly,

C. E. FISHER & SONS,
Dulverton Fruit Farm, Growers and Shippers of Fancy Fruit, Queenston, Ont.



Disassembled Pump Cylinder and Valve and Quick Access of Packing.

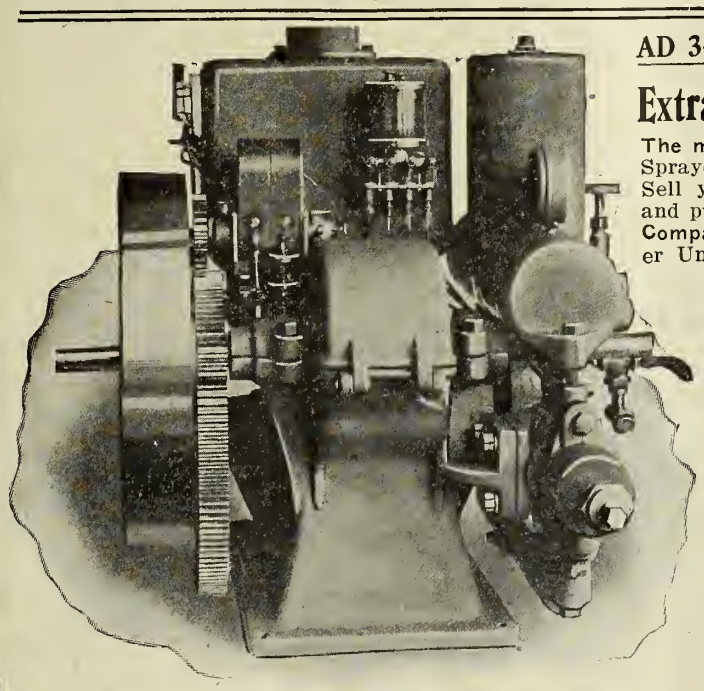
Club Together With Your Friends and We Will SAVE YOU MONEY

Fig. 2—Special Low-down Short-Turning Hilly Orchard Model.

Mr. Geo. Evans, Mgr. Hillcrest Fruit Farm, Stamford, Ontario, writes:

Gentlemen: Please send us the latest catalog on "Friend" Spraying Equipment. The "Friend" spray pump and engine we purchased from you in early spring of 1910 has given us complete satisfaction. We feel that there is not another outfit in existence that will do as much work and with as little trouble as ours. We have applied over 33,000 gallons of spray mixture the two seasons we have had it and the only cost, besides fuel, has ben a set of valve seats. We think that is extraordinary seeing that nearly half the mixture was winter strength lime-sulphur.

When the Outfit was put away at the end of last season it appeared in as good shape as ever. We have never yet had occasion to pack the pump; that in itself is a very big consideration for in the matter of pump packing with our previous Outfits we had nearly got perpetual motion down to a science.



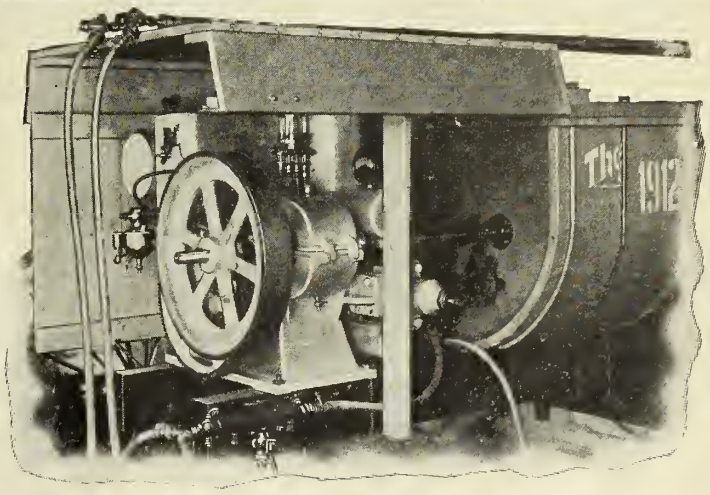
New Western "FRIEND" Motor-Pump. Note the Simple, Rigid, Compact Unit and Its Graceful Lines.

AD 3—See Corner Coupon

Extra-Exchange-Extra

The most important part of a Sprayer is the **PRESSURE.** Sell your old, heavy engine and pump and buy this **Neat, Compact, High-Pressure** Power Unit. Put it on your old Sprayer and spray as you never sprayed before. If you do this we will give you a **"Friend" $10.00**

Power Propeller Agitator FREE



If you can't sell the old engine and pump, tell us all about it and let us make you an exchange proposition. We will allow you ten times what it's worth. Only a few minutes are required to mount this motor-pump on your old machine. Don't worry about "room enough"—sets anywhere. Every day we receive letters saying, "We bought a ———— Sprayer (no exceptions); it gives us lots of trouble—packing leaks, or too heavy, or can't get pressure, or engine won't run on sidehill, or have to repack every day, etc., etc., etc." Now, if the above proposition does not put a stop to it all, and you are not satisfied, **we will trade back.**

THE STRONGEST, EASIEST WORKING, HIGH-PRESSURE HAND PUMP ON EARTH. IDENTICALLY LIKE THE POWER PUMP. QUICK ADJUSTABLE and ACCESSIBLE PACKING, and QUICK DETACHABLE VALVE SEATS, ETC. A REAL "FRIEND," WHEN THE PRESSURE IS ON.

Fig. 15—Hand Pump. We Have Others.

"FRIEND" Outfits are made in the largest and best equipped factory in the world that is devoted exclusively to the manufacture of **SPRAYING OUTFITS.**

We need nothing—we ask for nothing—we simply make the Best Sprayer in the World (that's our hobby), and the up-to-date fruit growers (who know Sprayer Weaknesses) somehow have sufficient confidence in the **"FRIEND"** to place orders freely. Every day now brings them. Fruit growers who buy the **"FRIEND"** get full value. No bad accounts for the cash customer to balance. Wherever you see a **"FRIEND," You Know It's Paid For.** Our Complete Outfits are made in many different styles, ranging in price from $250.00 to $350.00.

Special Introductory Prices Offered. If interested, ask for catalogue. Prompt Deliveries on Early Orders.

Hundreds of Up-to-Date Fruit-Growers have told us, when speaking of other Nozzles, "They are a nice little nozzle, but they don't Get There like the 'Friend.'"

"FRIEND" MFG. CO.

Gasport, Niagara County, New York

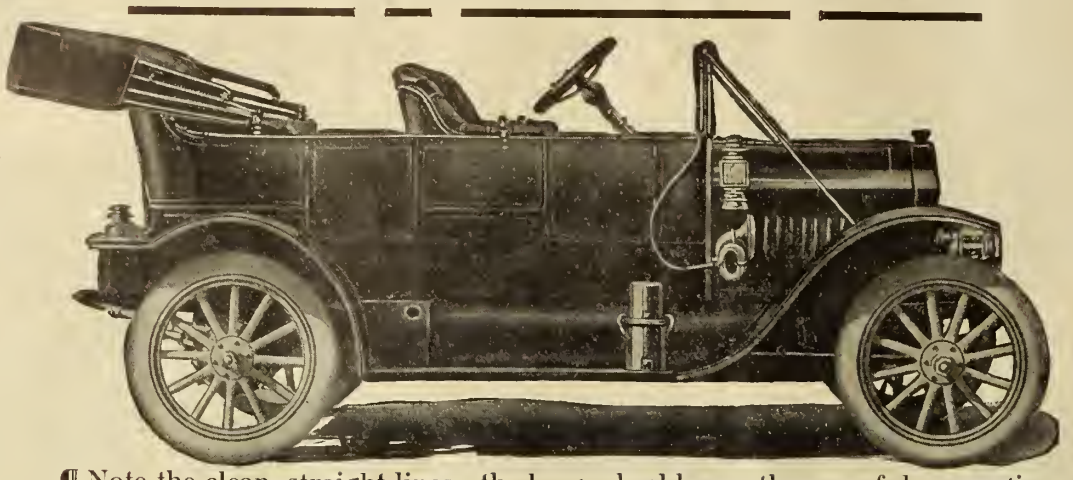
Our Good Old "Quaker Motto" is
SATISFIED CUSTOMERS

We wish it were possible to know your requirements by simply signing your name. But it's too important a matter to handle so lightly. If you are interested in any of our machines, sit right down and tell us about it, in your own language, just what you have in mind.

We'll Do the Rest

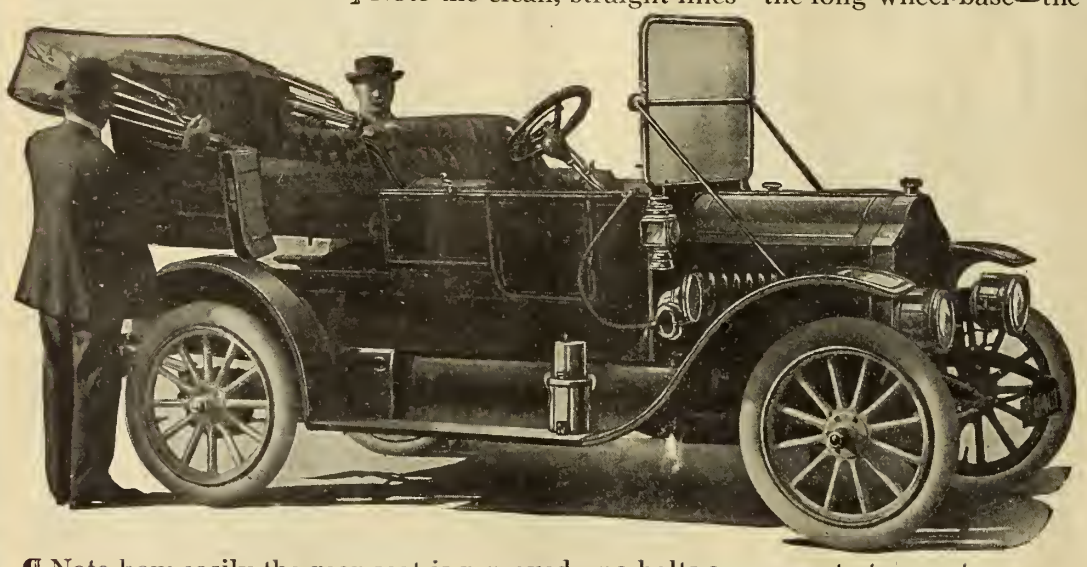
Two Cars In One
Each a Perfect Car

TheDay Utility Car



Price $1150 Top and Windshield $50 Extra

¶ Note the clean, straight lines—the long wheel-base—the graceful proportions.



¶ Note how easily the rear seat is removed—no bolts or screws to take out—simply a spring lock to release.

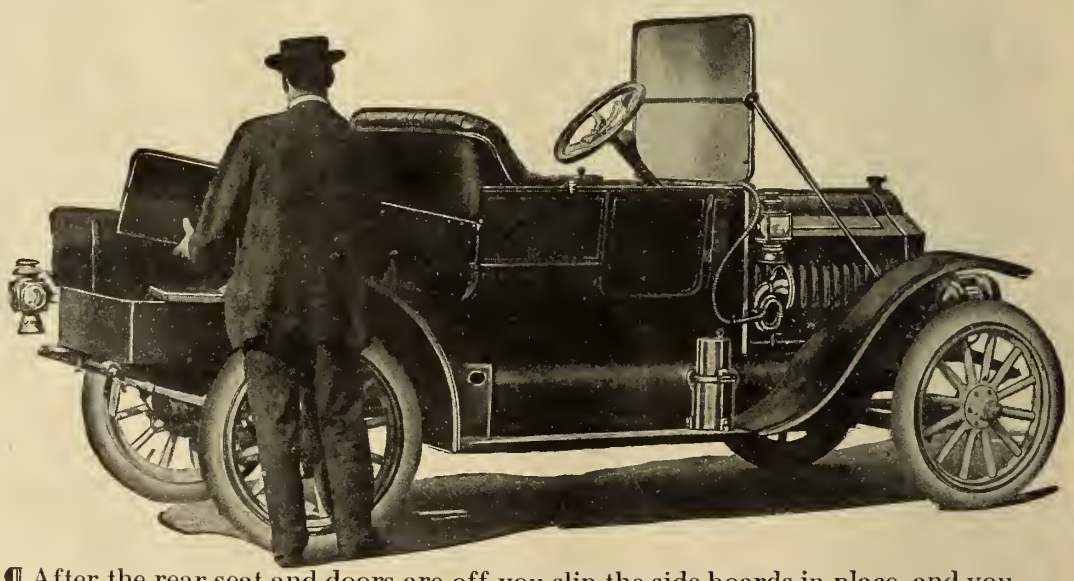
HERE, at last is the practical car for the farmer, the fruit grower, the merchant, the contractor—for any one who has light hauling to do and who wants to combine pleasure with utility and economy in the owning of an automobile.

For the first time in the history of automobile building the motor car is a money saver and not a money spender.

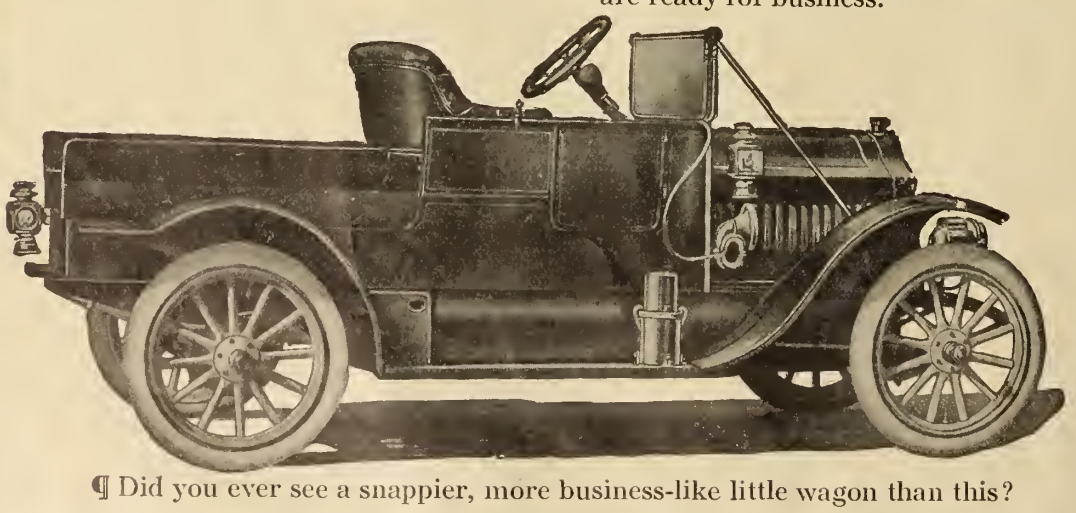
The Day Utility Car will do the work of two or three horses—at the same time it is never too tired after a day's work—or on Sunday—to take the family for a forty, fifty or a hundred-mile spin.

The pictures tell the whole story—the Day Utility Car is simply two cars in one—and each a perfect car.

The Day Utility Car is built for service. It is strong and sturdy in construction, with extra heavy weight in rear axle, wheels and frame where it is most needed. While it is not built for excessive speed, it is easily capable of from 35 to 40 miles an hour, which is ample speed for all legitimate purposes. The four-cylinder engine develops full 33-horsepower and is thoroughly dependable under all conditions, the power being ample even for emergency demands. The engine is quick and responsive and there is a feeling of reserve power that makes the driving a continual and genuine pleasure.



¶ After the rear seat and doors are off you slip the side boards in place, and you are ready for business.



¶ Did you ever see a snappier, more business-like little wagon than this?

The rear seat and door are instantly removable. There are no bolts or screws to take out. Simply an eccentric lock that is instantly released, yet holds the seat firmly in position and makes the body practically one piece, while being used for pleasure purposes. The space under the front seat is all open, giving the delivery body extreme roominess. Side boards that are provided are instantly slipped in place and add still more to the capacity of the body. At the same time they thoroughly protect the body from possible damages while being used for delivery purposes.

Get Your Order in Now for Early Spring Delivery—Write for the Catalog

We Want Live Agents of Financial Responsibility to Sell This Car in Territory Not Already Closed

THE DAY AUTOMOBILE COMPANY, Detroit, Mich.

A COMBINATION FARM

I have been conducting a poultry, garden and fruit farm in a small way for the past seven years and find it very profitable. Poultry has been my mainstay as a money producer. I raise nothing but standard bred poultry and market eggs is my specialty, though I sell quite a lot of fowls for breeding purposes and eggs for hatching. I never sell any fowls on the market except a few culls. I also find the sale of baby chicks very profitable, yet I find the easiest money in market eggs.

In January, 1911, I had on hand 40 hens and pullets of Buckeyes, White Wyandottes and S. C. White Leghorns. I find the Buckeyes to be year-'round layers; the White Wyandottes are good winter layers, while the Leghorns make the best summer layers and this way I get eggs every day in the year. I cull close each year, retaining only the best birds from both the utility and fanciers view.

From the 40 hens I hatched over 1000 chicks; sold quite a number from the incubator as baby chicks; raised about 600, had all the eggs we could use and sold $75 worth of eggs on the market and for hatching. During the year, 1911, I sold from the 40 hens, $240 worth of chickens and eggs. The feed consumed during the year was all bought at retail prices and cost $200. Thus giving me a profit of $40 cash and 300 head of fowls on hand January, 1912, most of which were pullets. My hens have more than paid their keep.

I yard all my breeders in yards 20x100 feet, with a colony house 6x8 feet, open front, and keep from 10 to 15 breeders in each. My young stock is raised in a brooder house until broiling size when they are moved to colony coops in orchard where they are raised until they are ready for the laying house. This is either the colony-style house or continuous plan with open front and facing the south.

I prefer to spread the droppings on the garden and orchard as soon as removed from the houses, as in this way none of the fertilizing values are lost. I find poultry droppings especially desirable for cabbage, beets, beans and peas, but not good for tomatoes as it is so rich it causes them to make too much vine.

I have used it successfully in producing fine cauliflowers, having heads to weigh five and six pounds each, and it makes enormous heads of cabbage. I sprinkle the manure thinly between rows and work it in with hoe and plow. Too much will cause vegetables to rot. I have had cabbage heads that weighed 25 pounds and beets that weighed 8 pounds. I find poultry droppings especially desirable for strawberries and it is good for all kinds of orchard fruits, but where much of it is used I would advise planting orchard to cowpeas and turning them under when they are in bloom.

All waste fruit and vegetables can be used for fowls, supplying them just what they need in the way of green food. All surplus turnips, small potatoes, heads of unmarketable cabbage and beets I put up for the fowls in winter when green food is scarce. For the laying flock in an orchard there is nothing better than to sow rye, wheat and oats mixed. This will give green pasture all winter when it is sowed early in fall and in the spring before it begins to sap the ground it can be turned under making a fine fertilizer for the trees.

When managed properly it is not hard to make a living and something besides from the above combination, yet more depends on the person behind the business than anything else, for it takes lots of hard work, good management and lots of staying qualities, grit, pluck, push and energy to make it successful. MRS. H. P. HINTON.

You Can Make Two Big Strikes During February—

One for Yourself and—One for a Friend

February is Bargain Time

In The Fruit-Grower's Subscription Department

This issue of The Fruit-Grower is one of the greatest numbers we have ever put out. In many respects, it breaks all previous records, and in order that our subscription department may also break records, we will make February a bargain time, and make it an object for every subscriber to renew his subscription. Here's Our Special Offer:

We Will Give Two Subscriptions for the Price of One All During February

Or, to put it another way: Every person who sends us $1 to renew his subscription for one year may also send the name of a friend, to whom The Fruit-Grower will be sent for one year, without any extra charge.

Thousands of subscriptions are expiring at this season of the year. More than three-fourths of those whose subscriptions expire are going to renew anyway, and we make it a special object for them to send their renewal in February, and get the benefit of this special offer.

Now, friends, here's the chance you have been looking for. You have some neighbors or friends who need the help of The Fruit-Grower. It will not cost you a cent extra to send The Fruit-Grower to them, if you send your dollar this month. You will help yourself, too, by sending your neighbor's subscription. An Indiana subscriber wrote us the other day that notwithstanding he sprayed his orchard thoroughly last season, his neighbors did not, and insects from their orchards seriously damaged his fruit. This man could well afford to subscribe for The Fruit-Grower for all his neighbors, because of the benefit to his own crop when they adopt approved methods in handling their orchards.

Don't hesitate. Get busy at once. Don't stop at sending one new subscription with your renewal—you can send as many as you want at this rate of 50 cents each, but they must be NEW subscriptions.

This offer is only good until the first Saturday in March, mind you. To take advantage of this special proposition, your letter must be mailed not later than Saturday, March 2, 1912. This is a bargain month, and the offer will not be made again this year.

EVERY SUBSCRIBER TO GET ANOTHER

That's the slogan for February. You know the fellows in your neighborhood who need The Fruit-Grower. Now, go and get their subscriptions, while this offer holds good. Nobody else will get the men you can reach with your influence.

If your subscription is already paid ahead, here is your chance to advance it still further at small cost.

Remember that no premiums go with this special offer—it is simply two subscriptions for the price of one, and at least one subscription sent with every remittance of $1 must be a NEW one.

If you want sample copies, ask for them—but hurry, and let the new subscriptions start with our January issue. We are saving some copies of January and February for these subscribers, and as long as our supply lasts the subscriptions will start with the first issue of the year.

The Fruit-Grower
Bargain Department
ST. JOSEPH, MISSOURI

February Bargain Coupon

The Fruit-Grower, St. Joseph, Mo.

I enclose remittance of $....., for which renew my subscription one year and send The Fruit-Grower one year to the following new subscribers. (Two or more names at 50 cents each.)

.....

.....

.....

Name of Sender.....

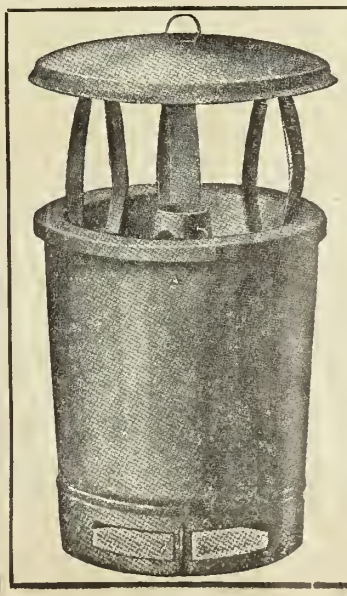
Town ..... State.....

Cumberland *and* Kansas Raspberry Plants
$5.50 Per 1,000—3 Year Old
Pomona Currant, 5c Each
J. T. Wallace, Neoga, Illinois

Notice to Farmers
Keep a bottle of German Distemper Remedy on hand at all times for Distemper, Coughs, Colds, Epizootic and Worms in horses and stock. Also a good tonic. Fifty cents per bottle at all druggists or direct prepaid. Booklets free.
German Distemper Remedy Co., Goshen, Indiana.

✟ ✟

The thing we must strive for in farming, if we are to make a success of it is quality. Nothing in fruit growing counts for more shining dollars than quality. It is the first demand of every consumer. Strive this year for better quality, both in your fruit and in your pack.



The Troutman Orchard and Ground Crop Heaters

Scientifically Perfect
Perfectly Practical
Practically Everlasting

The Round Crest Orchard Heater Company
CANON CITY, COLORADO

$1500.00 for One Crop of Fruit from 36 nine-year-old trees of the world-famous Stark Delicious apple planted on less than one acre of ground

A sensational record but the gospel truth. Read this amazing letter from the man who made the money—Mr. F. S. Burgess of Chelan County, Washington. Then ask us to send you a stack of other letters like it.

> "I have thirty-six Delicious trees nine years old. They began bearing the third year and have borne every year since, the largest crop being that of this year, 1910, averaging 15 boxes to the tree. The gross returns from these trees this year will not be less than $1,500.00. I have already sold 250 boxes for $3.25 per box and the balance will bring from $2.00 to $2.50 per box."

This splendid record is not an exceptional case. Hundreds of growers of Stark Delicious—"the Wonder Apple of Appledom"—have made almost unbelievable **profits.** And the list of these happy, contented, satisfied Stark Tree planters is growing by leaps and bounds. Every season sees thousands added to the list.

Join this "Profit Club" **this Spring.** Plant an orchard—a Stark Tree orchard—an orchard of Stark Delicious.

Prices Lowered for Spring 1912

We give our customers the benefit of our great growth and organization. Because our volume of business on Stark Delicious has been **tremendous** we offer, for Spring, trees of this world-famed variety at **10 cents per tree cheaper than last year.**

The Enormous Demand for Stark Delicious

has made it possible for us to grow this variety in greater quantity and **better quality** than ever before (more than 3,000,000 trees propagated for 1912 trade) and thus lower the cost of production. **You get the saving.**

Stark Delicious has made good in every apple growing section in the country. Every year on all markets it outsells **all other varieties** from $1.00 to $3.00 or more per bushel. $4.00 to $6.00 per bushel is its common price **every year.** This year it is selling on Chicago and New York markets at $5.00 to $8.00 per bushel. Think what these prices mean to the grower's profits—**your profits.**

Luther Burbank, Wizard of Horticulture, says: "Stark Delicious is correctly named—it is a gem. It is the best in quality of any apple I have so far tested."

Again Tops Wenatchee Association List

Every year it has been our policy to tell tree planters both the retail and wholesale price of Stark Delicious. The Wenatchee Fruit-Growers' Association is one of the strongest and best known fruit-growers selling organizations of the country.

Here are the prices at which their members' fruit was sold this past fall:

Stark Delicious	$2.75	Grimes Golden	1.35
Stark Black Ben	1.24	Winter Banana	1.50
Ben Davis	1.00	Stayman Winesap	1.41
Senator	1.35	Jonathan	1.44
Black Twig	1.26	Rome Beauty	1.44
White Winter Pearmain	1.32	Spitzenburg	1.80
Stark King David	1.40	Winesap	1.80

Don't Delay Ordering

As mammoth as our stock of Stark Delicious trees is, it is not going to supply the demand. There are bound to be some planters, who delay ordering till the last minute, who will be disappointed. Orders are piling in now every day that keeps our great force on the jump. You can't lose anything by ordering immediately. On the other hand you gain. Early ordering means perfect trees, carefully selected, carefully packed and delivered at your station the day you want them.

Don't YOU Pay Freight

Let us do it. We pay freight on orders of $10.00 net or more. We also box and pack free. The Stark Method of Packing is world-famous—it is so good that we guarantee safe arrival.

Liberal Discounts

Beside paying freight as above, with free boxing and packing, we also give most liberal discounts as well as splendid premiums. Our Free Books explain all these features fully. Send for your copies today. Use coupon.

8 Mammoth Nurseries in 6 Different States

It is a proven scientific fact that **no one soil or climate will grow all kinds of trees to the height of perfection,** and since the Stark standard of tree quality demands that **every tree** be as perfect as it can be grown, we have eight great nurseries in six different states.

Eighty-six years of tree-growing know-how is back of every Stark tree. Four generations of Stark men, scientists and expert horticulturists all of them, have devoted their lifetime to this one business. Better trees than Stark trees can not be grown.

Don't make the **fatal** mistake of planting trees of questionable quality. Plant Stark Trees, with an 86-year reputation for dependability behind them. Then you can never be disappointed.

Remember, These Are Exclusive Stark Features

—**Lower Prices for 1912.**
—Liberal Discounts.
—Freight paid on orders, $10 net or more.
—Free boxing—free packing.
—Guaranteed safe arrival of trees.
—Special Service Department Advice to Growers.
—Free Books.
—Exclusive varieties of prize-winning fruit.
—Three-quarters of a century reputation for square deal behind every Stark product.
—A million-dollar nursery behind every statement made and every Stark Tree sold.
—Fast daily refrigerator freight service.

Stark's Beautiful Condensed Year Book

"A Diamond Mine of Information"

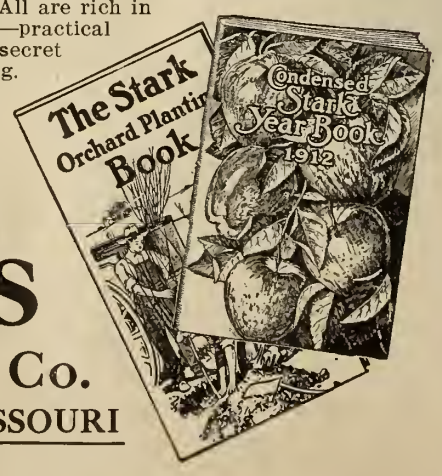
Here you will find the boiled-down facts gleaned in the busy lifetime of world-known horticulturists on the planting of fruit trees, small fruit, plants, vines and other nursery products. For experienced orchardists as well as the new beginners. Stark Bro's complete catalog also included. The best of its kind in the world. This wonderful book adds new luster to the three-quarters-of-a-century reputation for honest dealing which Stark Bro's have won.

Stark Orchard Planting Book

"Master Book of Master Minds"

Trustworthy information written by the great horticulturists of our Special Service Department—given free to the whole world. Not a catalog or piece of advertising, but a well of information; as the authors say:

"The contents is not the result of our own experience alone. It is a collection of the knowledge and experience of many men. Each has spent a large part of his life working with trees. Many have had scientific training. All are rich in that greatest of all knowledge—practical experience. It tells the real secret of success in orchard planting.



FREE BOOK COUPON

STARK BRO'S NURSERIES AND ORCHARDS CO.

210 STARK STATION, LOUISIANA, MISSOURI

Send me free books without obligation on my part.

NAME _____

ADDRESS _____

You might as well have these two great book treasures in your home. Your copies are here waiting for you to send your name and address for them. Use coupon. Or write a card or a letter today. Don't put it off—the editions are limited.

Stark Bro's

Nurseries and Orchards Co.

210 Stark Station LOUISIANA, MISSOURI

WESTERN
THE FRUIT-GROWER
AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Volume 23 ST. JOSEPH, MISSOURI, FEBRUARY, 1912 Number 2

TOMATOES UNDER GLASS

How Tomatoes are Raised For the Winter Trade at Emaus, Pennsylvania

Nearly mid-way between Allentown and Reading, two of the most prosperous cities in the Keystone state, near the head-waters of the Perkiomen river, lies the quaint old Moravian village, in fact, the oldest Moravian land mark in Pennsylvania, which, however, is not only noted for the religion of its early forefathers, but in whose midst sewer pipes have been manufactured and shipped to all parts of the world. Where silk has been woven in all the brilliant patterns imaginable and which are daily worn in all the fashionable circles in America, as well as in Europe.

This is the town's history in a nutshell, except that it has only opened its eyes lately upon a new industry, which is bound to bring a radical change of occupation, and many of those that are now standing behind seething hot furnaces or sitting from early morn until late at night under the glare of the electric lights, weaving silk into the thousand and one different forms, will find employment under thousands of square feet of glass, not even shivering from the bitter cold, as their work will be surrounded with an atmosphere of summer with the fragrance of vegetable life in abundance.

Pennsylvania has for a number of years had the pleasure to be known as the state where the finest "hot-house tomatoes" are grown and Emaus has been the pre-eminent spot, where tomatoes are grown to perfection in mid-winter.

Daniel B. Kroninger, a comparatively young man, with an experience of hot-house culture for thirteen years is today known in all the fashionable circles of our metropolitan cities as the grower of the finest tomatoes in the United States. Twelve years ago this young man entered a hot-house industry at Kennet Square, near Philadelphia, and having that instinct that belongs to all Pennsylvania Germans, "to learn what he sees, and to learn it well," he reaped from the three years' experience of the culture of tomatoes, a knowledge, second to none in the state.

With this knowledge at hand, he and his brother formed a partnership and erected the first hothouse in Lehigh County, near Allentown, where for seven years they raised tomatoes to perfection, receiving the highest market prices obtainable.

Finally he sold his interests to his brother and decided to make the west side of Emaus glitter with glass. Kroninger's hothouses are 192 feet long by 22 feet in width, and 13 feet in extreme height, while the sides are 5½ feet high. All the houses run parallel with each other in an east and west direction, having a sunny exposure and they get the benefit of every ray of sunshine that "Old Sol" can pour out.

The framework of the buildings is of the best cypress. Wooden gutters of white pine carry off rain or moisture from any source. Slim strong iron posts support the girders of the houses and reduce the shade cast on the plants to a minimum. The roofs are made of French glass, claimed to be stronger and harder than American. The panes are the largest that can be safely used, being 16x16 inches, closely lapped and can easily be replaced in case of breaks or cracks.

A ventilating system that is simple, and rapid in operation, regulates the artificial tmperature of the hothouses, which is maintained within certain limits, during any sort of weather, from the coldest to the rough and stormy days of mid-winter. A furnace under the front part of each double hothouse furnishes the heat for each house. The heat produced here is carried from the large boiler throughout the hothouses by line upon line of galvanized pipe. The heating system is known as closed expansion hot water tank system, and the temperature is constantly kept from 82 to 92 degrees Fahrenheit, while at nighttime it may be permitted to cool ten degrees.

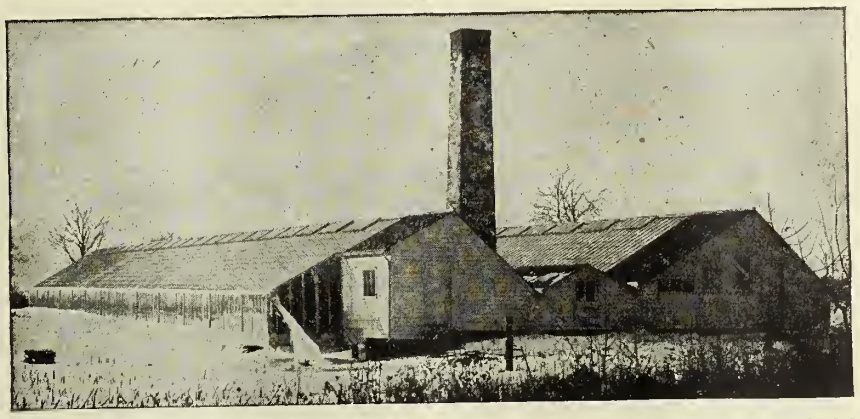
The winters are certainly cold at Emaus and the winds howl with bitter agony, and Mr. Kroninger has to keep his eyes constantly on the red-hot furnaces below the houses, lest the heat gets too low and his thousands of plants would freeze. The average amount of coal used is from three to four tons for every double house per week, taking 125 tons for a double house every season. During a cold night last season he shoveled more than a ton in each of his many furnaces, the night was not the coldest of the season, but the winds were so fierce, which requires much more coal.

The interior of the houses are divided into large parallel beds, separated by long alleys for the convenience of those who trim and train the vines, pluck the fruit, fertilize and water the soil.

The tomato plants are planted in long regular rows, two of the beds containing four rows each and a small bed of two rows. In one of the houses, the beds are upon platforms, while the adjoining wing has beds on the ground, whereby they obtain the direct rays of the sun.

The plants are carefully trained upward with little chance to creep, and are propped up from the beds with little sticks made of plaster lath, which are made in two sizes, one being a foot long, the other sixteen inches, with a notch inserted in the top of the lath, where the vines are allowed to rest.

Once a week all the side shoots are taken off, likewise the stems from which the fruit has been gathered. Only the central stem is left growing, to obtain all the blossoms and fruit at the top. So erect are the stocky plants and so full the foliage, that but for the fruit which hangs around in large clusters, a visitor might think himself in a tree nursery and not in a tomato garden.



ONE OF THE DOUBLE GREENHOUSES WHERE THE TOMATOES ARE GROWN

Mr. Kroninger is an adept in this work as is shown by his wisdom in the art of tomato culture. The timely aid he gives to the vines is always opportune. Happening to see a rag tied around a tomato stem, I asked him what that rag was doing there. Why, said he, that stem was entirely broken off, and one of my assistants and myself set the fracture in the same manner that a skillful surgeon sets a broken bone, and now, there is a perfect tomato ready to be plucked in the morning. That cluster above is still in flower which proves that our operation was a most successful one. Many a person would think, what is the use of fixing such a broken stem. But like the good shepherd, who watched his sheep by day and by night and who paid as much attention to the one that was lost as to the ones that were safe, so does Mr. Kroninger pay the utmost attention to the weaker plants, as the stronger ones are able to take care of themselves.

Each double hothouse contains over two thousand plants, therefore the yield is large. So rapid is the growth of the vine, that each is carefully trained once every week and every bunch is tied to the main stem with a double string, so the stem to which the cluster of tomatoes is attached will not break. A break causes them to wither before they have fully matured, and if they are not tied to the stems in this manner, the tomato will become full of cracks, making them useless, even for second grade fruit. Cracking disfigures the fruit and also checks their growth.

Mr. Kroninger sorts his fruit in first and second grades, but so careful has been the culture of the crop that under careful supervision not ten per cent of the fruit grown has to be shipped away as second grade, while culls cannot be found in his houses. The second grade of fruit is the fruit with imperfections, such as spots, pale color, cracks, etc.

All the plants are set in August and by the last week in October the first shipments are made, every morning the entire pickings, which amounts to hundreds of pounds are shipped to New York City, while occasional shipments go to Philadelphia, Boston, Washington and other large cities. New York, however, gets six-tenths of the entire product.

All the shiments are made in twelve-quart chip baskets. They are packed first with a layer of excelsior, then a thickness of twelve sheets of paper, on which a layer of tomatoes nicely wrapped in tissue paper are laid. Then another layer of excelsior and paper prepares the bed for the second tier, upon which a similar layer of excelsior with thick manilla paper provides for the top cover. Then they are securely tied and hauled to the express office and immediately shipped away to their destination.

All the tomatoes are picked early in the morning, for the tomatoes are then in their best state, while later in the day, when the temperature becomes higher, the fruit is softer and more apt to become spoiled by picking.

Only the Lorillard variety is grown, because this kind has proved to be the best tomato ever grown under glass, being the most successful forcing tomato, thriving best the whole year around under glass. It is of medium size, not too large, as the medium sized tomatoes have been found to be the best sellers, and they average from three to four tomatoes to the pound.

The price of the tomato varies according to the season. Before the holidays the average price is twenty cents per pound, when the market is flooded with California tomatoes, as during the fall quite a lot of California tomatoes reach the Eastern markets.

After the holidays, the California crop becomes exhausted and the Pennsylvania fruit is in greater demand, and the hothouse growers realize from thirty to forty cents per pound for first grade fruit, while second grade fruit is sold for from twenty to twenty-five cents per pound.

All the fertilizer he uses, is what he calls short horse or cow manure, and he changes the soil on beds annually. He has 1,500 young tomato plants ready for an emergency, so if any of his older plants should suddenly die, he would re-plant from the younger ones, and would be able to reap profitable results from the younger plants by the middle of April, and they would continue to bear until

The tomatoes are picked during the morning and immediately packed in baskets for shipping.

outdoor tomatoes would come in season.

Being always surrounded by this delicious fruit, it is no wonder that the children of Mr. Kroninger, happen to like tomatoes, and Victor Amos, the junior Kroninger, likes them well enough to pluck them from the stems and eat them in their natural state, as easily as his father relishes a watermelon. Not only does the little boy find the hothouse a pleasure place, but the little daughter of Mr. Kroninger who is only ten years old, has made a nursery out of the hothouse and spends the greater part of day under the glass roof.

The work connected with this large plant keeps a little army constantly busy throughout the entire day and night, as constant attention has to be given to the fires, the plants have to be kept in trim, and the soil has to be constantly watered.

H. WINSLOW FEGLEY.

Pennsylvania.

New York State Fruit Growers Association Annual Meeting.

Eleven years ago about one hundred earnest fruit growers met at Syracuse, N. Y., and formed this association, and its rapid growth is shown by a membership of thirteen hundred in 1911. This membership promises to pass the fifteen hundred mark in 1912 and every member feels that his annual dues of $2.00 is well invested. Besides the annual meeting, held each year the first week in January, there is held an Eastern meeting at Poughkeepsie in February, and a Summer field meeting, held at a different place each year, in August. Considerable business is done in co-operative buying of fertilizers and spraying materials and several very thorough crop reports are issued each season. Full reports of the proceedings of the meetings are printed and sent to each member and prizes are offered on fruit at the winter meetings, with entries free, but confined to members. At this meeting nearly $400 was offered in cash prizes and a large amount will also be awarded at the Eastern meeting in February.

The meetings of this association are well worth a fruit growers' time and expense in attending even if there was no program, as the mingling with others in the same line of work and the consequent interchange of thought that is bound to take place is of much more value to the live man than can be readily estimated. Full value can also be had by attentively following the program and the banquet itself is well worth the entire cost of the trip. Thus any fruit grower who attended this meeting if he was awake and alive to his opportunities could get three fold from his investment.

President Allis left the conventional beaten path for presidents' addresses and spoke his mind freely in regard to governmental policies that should interest the farmer and fruit grower, saying:

"I now come to the hardest question we have, and a question that should be avoided if possible in meetings of this kind, but after the betrayal of farmers and fruit growers of this and other northern states, it is up to us to let the president and other standpatters understand the time is past when the farmers can be bought and sold like sheep. First, is the absolute control the express companies have over both parties and the United States postal department. Second, the rank injustice of President Taft in his whirlwind trip to force the Payne-Aldrich bill through; the scandalous use of power in the Ballinger-Pinchot controversy; the veto of the free list; the retaining of that dead and decayed official, Secretary Wilson, as head of the United States Agricultural Department; unfair methods in forcing the reciprocity treaty on us without even an excuse for so doing. Wool is the next thing to be attacked, and will probably be made free, while manufactured woolens, with about an average of 100 per cent duty, will have but a slight cut.

"The president and congress are devoting too little time to the needs of the country, but are actively engaged in 'fixing fences' for the next campaign. This country needs an amendment to the constitution prohibiting the chief executive from succeeding himself. This might give us a president who would seek to promote the interests of the people rather than his own selfish ends."

He said that vital questions before the association at this time were the tariff as related to fruit growers; cold storage; a complete parcels post and a law to compel commission men to report sales.

In regard to cold storage he said: "Cold storage, that much abused business that according to the city papers, is responsible for high prices, is an absolute necessity for fruit as well as for all perishable foods. Cold storage is not responsible for high prices but is an equalizer of prices."

Mr. Taylor, in reporting for the committee on nomenclature plead for a more uniform system of nomenclature to avoid confusion.

The afternoon session was given up to plant diseases and insects and was mostly conducted as a question box. The Baldwin spot is not confined to that variety alone, but occurs on many other varieties. But few of the commercial varieties are attacked as severely as the Baldwin. Orchard heaters are being considered by some and a short talk was given on predicting frost from dew point readings taken in the evening.

Insects have been normally prevalent during the past season though the San Jose scale has appeared more abundantly in some sections than since 1905.

Prof. Blake of the New Jersey Experiment Station gave a very interesting talk on "Investigations With Peaches in New Jersey," illustrated with a very fine lot of lantern slides. New Jersey was a pioneer in commercial peach growing, but twice has the industry received a severe set-back in that state, first by yellows and later by the scale. The experiments carried on by the station are located in different parts of the state with soil and other conditions entirely different. The difference of a few miles in latitude, a different soil and elevation, cause the same varieties to bloom three weeks earlier and ripen about two weeks earlier in one orchard than in the other.

Senator H. M. Dunlap of Savoy, Ill., spoke on "Factors Essential to Success in Apple Growing." He said to select varieties with a view to quality, productiveness, market demands and adaptability to locality. If you are located, find the varieties that will do best in your section and plant them. If you are free to locate look about and select the location where, all things considered, will best produce the varieties that most interest you. Cultivation in most cases is best, but deep plowing in bearing orchards should be avoided. He uses the disc harrow early in the season and follows later with the smoothing harrow. Good fruit can be spoiled in the packing and one of the greatest factors in successful apple growing is the grading and packing of the fruit.

TOMATOES PACKED IN BASKETS AND READY FOR SHIPMENT

"Success and Failure in Co-Operation," was the subject of Mr. Lloyd S. Tenny of Hilton. Farmers must have a common ground and feel the need of co-operation. The great improvement before us is in methods of grading. This will not be possible without co-operation.

The four principles necessary to make co-operation successful are first, the recognition of the common need; second, the organization of an incorporated body, not dependent on a loosely formed agreement, valueless in case of trouble; third, the money paid in for capital stock must be on a non-profit sharing basis, the organization not run to make money on the actual investment, merely through the markets which it opens up; fourth, signed contracts made between the central organization and the individual members not allowing each merely to promise shipments. Any community which does not practice co-operation is backward to that extent. The farmer will make more money under the co-operative system, it is true, but the improvement will not stop there.

Better schools will be maintained and libraries and reading rooms will be established. The farm will be more attractive and the farmer boys will stay there and the city fellows will want to come there too.

While co-operation is largely for the purpose of obtaining the highest attainable price, it is also to overcome circumstances. In southern California farmers united to bring in water for irrigation purposes long before uniting for selling purposes. Failure may come from over-jealousy of the farmers or through poor management and care should be taken in the selection of business managers. These should not be dependent upon the profits of the association for compen-

SURPRISED DOCTOR.
Illustrating the Effect of Food.

The remarkable adaptability of Grape-Nuts food to stomachs so disordered that they will reject everything else, is illustrated by the case of a woman in Racine, Wis.

"Two years ago," she says, "I was attacked by a stomach trouble so serious that for a long time I could not take much of any sort of food. Even the various kinds prescribed by the doctor produced most acute pain.

"We then got some Grape-Nuts food, and you can imagine my surprise and delight when I found that I could eat it with a relish and without the slightest distress.

"When the doctor heard of it he told me to take several small portions each day, because he feared I would grow tired of it as I had of all other food.

"But to his surprise, (and that of everybody else), I did not tire of Grape-Nuts, and became better day by day, till, after some weeks, my stomach entirely recovered and I was able to eat anything my appetite craved.

"My nerves, which had become so weakened that I feared I would become insane, were also restored by the Grape-Nuts food in connection with Postum which has become our table beverage. I appreciate most gratefully and thankfully the good that your food preparations have done me, and shall be glad to answer any letters inquiring as to my experience." Name given by Postum Co., Battle Creek, Mich.

Read the little book, "The Road to Wellville," in pkgs. "There's a reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

ONE-SIXTH of the year's crop is said to be the cost of the depredations of insect pests and plant diseases. A good spray in season is the only remedy.

You will come nearer saving this one-sixth and putting it into your profits, if you use Devoe & Raynolds sprays.

Devoe Arsenate of Lead; sure death for all forms of leaf eating insects. Pure, full strength, comes in powder or paste.

Devoe & Raynolds Paris Green; for potato bugs and kindred pests. Pays big dividends on its cost.

Devoe Lime and Sulphur Solution; an effective fungicide; an invigorator and fertilizer.

They have all stood the test; perfect sprays—pure, strong, effective.

A small investment in prevention will be worth many dollars in bigger crops.

Order early of your dealer. If he doesn't keep "Devoe" write us.

Devoe & Raynolds Co.
171 W. Randolph Street
Chicago
New York Kansas City Denver

GREATER CASE 40

Backed by a 70-Year-Old Reputation

and $40,000,000 Capital

This car we regard as the crowning achievement of a company which for seventy years has stood at the head of manufacturers of the highest type of machinery. It is a quality product from first to last and, by all standards of comparison, the greatest value in an automobile on the market today. The Greater Case is great in size and magnificent in appearance. It has all the elegance and style and luxurious comfort of cars that cost a fortune. But the dominant factor in its supremacy is hidden under the hood.

—IT'S THE CASE ENGINE!

The Case is known far and wide as the car with the famous engine. This engine embodies advanced ideas found in no other make—ideas that have been worked out with consummate skill and infinite care and patience.

It took eighteen years to perfect the engine that makes the Case supreme.

These eighteen years, devoted to designing, experimenting, refining, improving and perfecting this wonderful engine, have brought forth what we believe to be the masterpiece of America.

An engine so simple, compact, silent, accessible and powerful that its equal does not exist.

"The Car With the Famous Engine"

Our Mighty Engine

These statements, coming as they do from one of the most conservative manufacturers in the world, are based on the actual performance of the engine. It is due to this extreme conservatism that we rate as a 40 horsepower, an engine that shows 52 horsepower on the brake test. This is the same type of engine that carried the Case "30" to victory and fame on race tracks, durability runs and hill climbing contests galore.

The Handsomest Car at Any Price

The Greater Case is big and roomy, with a straight line body and sweeping lines that give symmetry and grace. It is richly finished and upholstered, handsomely trimmed, luxuriously appointed, and up-to-the-minute in style.

Wherever seen, in country touring or on the city boulevards, its splendid lines and stunning style command universal admiration. No modern car at any price surpasses it in appearance.

And its perfect balance and long, strong springs, make it by far the easiest riding car.

The Car for Service

Case Cars are always ready to go. The engine always runs.

The Case Car is built throughout of the finest materials available in automobile construction, by a highly-skilled factory organization, in a plant whose mechanical equipment is unexcelled.

70 Years of Making Good

Back of Case Cars stands the 70-year reputation of a company whose products have always made good.

J. I. Case machinery was famous for quality when your grandfather was a boy.

The Case Eagle On Your Car

This emblem on an automobile has the same significance as the STERLING MARK on silver. It stands for highest quality and a guarantee that protects. It places at the disposal of the owner of a Case Car our

Nation-Wide Case Service

We have 10,000 Case Agents and 65 big Branch Houses scattered throughout the United States and Canada. All of our vast army of agents are equipped to promptly take care of Case Cars.

Wherever you carry the Case Eagle you may be assured of a welcome, hospitable treatment and fair dealing at the hands of the Case local agent. He will furnish you with information on the best roads, hotels, etc. No other automobile concern in the world can duplicate Case Service.

And for three generations that high standard of quality has steadily been maintained.

You want a car that will *last*—not one that will be down-and-out in a year. We are not competing with the cheap, "one-year" cars with which the market is flooded.

We are building cars for those who demand the utmost limit of durability and service and are glad to pay an honest *price* for full measure of honest *value*.

The Greater Case is a high-grade car at a medium price. Fore-door ventilation—36x4-inch tires—120-inch wheel base—three-quarter elliptic springs—11-inch clearance—**4½x5¼-inch cylinders**—Rayfield carburetor—dual ignition—Brown-Lipe transmission—Timken full-floating axles—cellular-type radiator—regulation trimmings—demountable rims—English mohair top with side curtain and dust hood.

Self-Starting Motor

High-grade windshield—12-inch acetylene gas head lamps—special design combination electric and oil side and tail lamps—storage battery for the electric lighting side and tail lamps—Prest-O-Lite tank for head lamps—one extra demountable rim—complete set of tools—jack and tire-repair kit—pump. These are some of the special features that belong to the Greater Case.

The Safe Way

to buy a car is to deal with a concern in whom you have absolute confidence. You know this company. You know the J. I. Case 70-year reputation for fair dealing and honest values.

We want you to know the Greater Case. Send the coupon for the catalog. See the car at the nearest Case Agency. Compare our quality and prices with others.

Ride in it—at our expense—as fast and as far as you wish. At the rate the orders are coming in, we will not be able to meet the 1912 demand for GREATER CASE 40 cars. Better act at once. Send the coupon today. If you want a lighter, less powerful car, investigate the well-known Case 30.

J. I. Case, T. M. Co., Inc., Dept. 52, Racine, Wis.

Please send me at once your latest catalog describing

"The Car With the Famous Engine"

Name .....

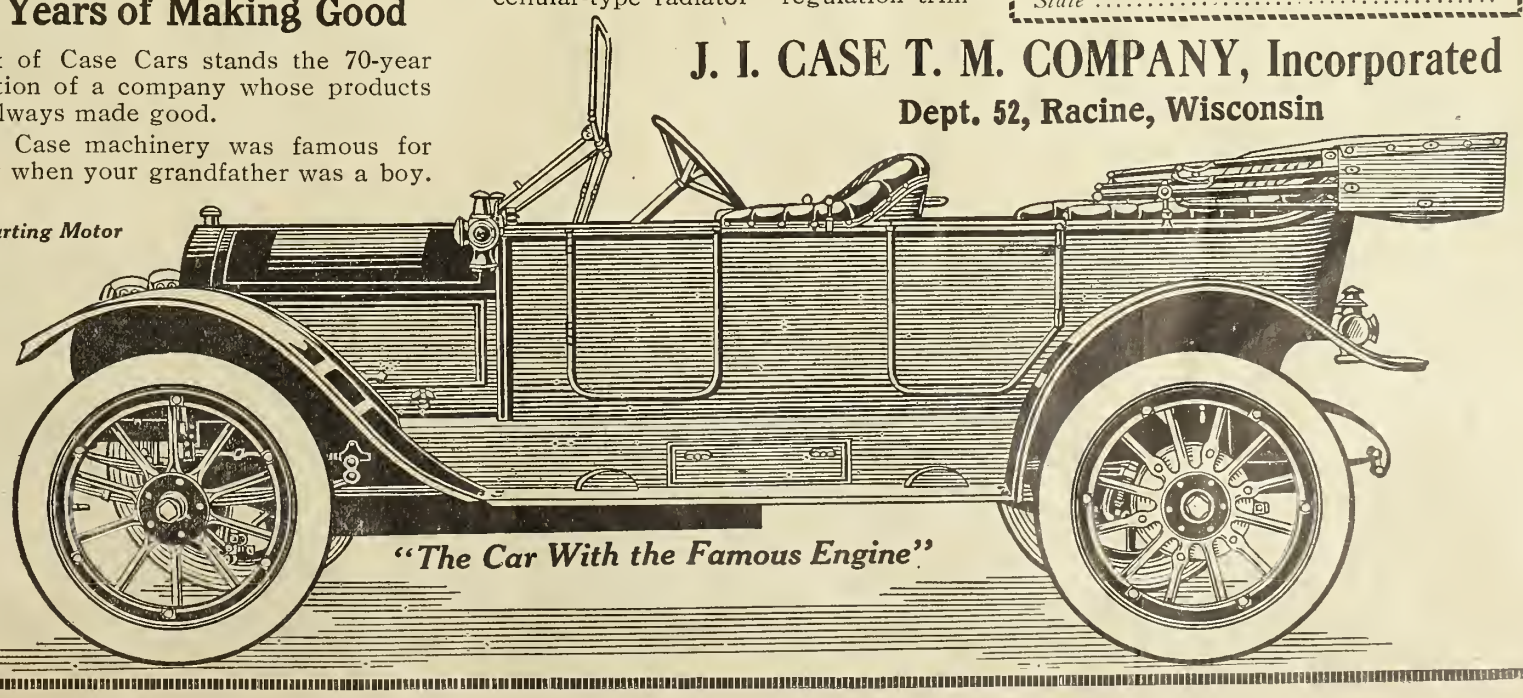
Town .....

State .....

J. I. CASE T. M. COMPANY, Incorporated

Dept. 52, Racine, Wisconsin

Self-Starting Motor



"The Car With the Famous Engine"

(8)

"Rex" SPRAYS SPRAY PUMPS ORCHARD HEATERS
LIME and SULPHUR, ARSENATE of LEAD
WRITE FOR OUR OFFER We Have Sales Agency for Bolton Heaters
Don't Delay. Write Today. Time is Important Now. THE REX CO., OMAHA, NEBR.

sation but should be allowed a liberal salary.

Mrs. Dunlap spoke on "A Balanced Ration for Man." She argued that if people knew the proper manner of living, their lives might be prolonged and said a National Bureau of Domestic Science was needed at Washington. She urged that parents teach their children the sacredness of parenthood and the nobility of labor.

Much interest was manifest in the prize speaking contest in which five students from the department of pomology at Cornell University took part.

W. H. Hook, of Waterville, spoke on "Progressive and Aggressive Fruit Growing." H. B. Knapp, of Port Byron, on "Better Packing and Grading of Eastern Fruit." F. E. Rogers, of Canandaigua, on "The Importance of Bookkeeping for the Farmer." E. C. Auchter, of South Greece, on "The Advisability of Growing Our Own Fruit Trees." E. A. Brown, of Elmira, on "The Importance of Better Grading of Apples in New York State."

No one was disappointed in this part of the program and all the boys did better than ninety per cent of the speakers usually heard from the platform.

H. B. Knapp was awarded first prize and F. E. Rogers came in for second honors. A very generous member of the association donated $10 for each of the other boys.

Commissioner of Agriculture, Raymond A. Pearson, spoke on "The New York State Exhibit at the Madison Square Garden Show; What It Was, and What It Taught." He outlined the exhibits of state resources at the land show, including horticulture, general farming, dairy husbandry and vegetable farming. The state's display included a minature train, the cars of which bore the products of field and orchard.

The back of the booth was fitted up as a country schoolhouse with its benches and a huge blackboard. On these benches were children and they were there to call the attention of visitors to the agricultural importance of New York.

A child would rise from his or her seat and going to the front of the booth would ring with vigor the old schoolbell. Then a child would go to the blackboard and write statistical facts regarding the state. For instance "New York produces more apples than any other state in the Union." Or "New York leads in the production of hay." Child after child would go to the board and write and the crowds that gathered would have to be dispersed by the police to make room for others.

He said the consuming public should be taught to eat more apples and advised an advertising propaganda to increase the consumption of apples and advised the grower and consumer to get closer together. He cited the work of the manufacturer of breakfast foods in making their goods popular, as a sample of what should be done for the apple.

"Pedigreed Fruit Trees," was the subject covered by Prof. Hedrick, of Geneva. He said there is far too little real, precise evidence on pedigreed nursery stock to settle the controversy wholly. The burden of proof is surely upon those who advocate the idea.

Dr. Frank H. Lattin of Albion, spoke on "My Experience in Reclaiming Old Apple Orchards." Dr. Lattin said his daily observations had confirmed the fact that the four great factors in the successful growing of apples were pruning, tillage, spraying and fertilization, and that success is in direct proportion to the extent and thoroughness in which they are carried out.

Tillage, fertilization, pruning and spraying are the chief factors which enter into the good care of an orchard. One or more of these may sometimes be omitted or poorly done without serious results. To some extent tillage may take the place of fertilization and vice versa. A thrifty orchard may resist the attacks of disease. Some years there are few insects or fungi so that spraying is not so much needed. A farmer frequently gets good results from some one of these factors and becomes so impressed with its importance that he makes a hobby of it, to the exclusion of all the others. But the most successful apple grower is the man who

Morrisania

A Tract of Ideal Fruit Land

In calling Morrisania an ideal location for a home and for growing fruits of highest quality, we have the indorsement of some of the highest horticultural authorities in America. In expressing their approval of Morrisania these men don't give their opinions merely—they tell of demonstrated facts. Morrisania is not an untried place, but it has been tested for all kinds of fruits and has made good. It means much, therefore, when experienced men write of Morrisania and its advantages.

Prof. Wendell Paddock, formerly horticulturist of the Colorado Experiment Station, now professor of horticulture in the University of Ohio, knows the fruit lands of the West thoroughly, and he told us of the advantages of Morrisania before we became interested there. He writes as follows:

"One in my position must be careful in giving indorsement to any fruit tract, but since I am familiar with Morrisania, I can see no harm in expressing the truth in regard to it. It is certainly a very fine tract of land, and for so large a body is one of the best I know of in Colorado. It is not only good orchard soil, but excellent for potatoes, and when the tract becomes developed I can see no reason why an orchard there should not bring as great a price per acre as those located at any other point in the state."

Dr. W. L. Howard, horticulturist of the Missouri Experiment Station, has visited all the orchard districts of America, and this is what he says of Morrisania:

"After having seen Morrisania, I can say it has not been misrepresented. In fact, when I read your prospectus, I was really impressed with your conservatism; you certainly might have claimed more than you did. You certainly have land that will produce fruits as well as other crops, and you seem to have an abundance of water."

Those who have bought at Morrisania are equally enthusiastic, after they have had opportunity to investigate everything most fully. W. D. Detwiler, formerly of Ottawa, Kan., was one of the first persons to buy at Morrisania, and he took charge of his tract in the spring of 1910, planting fruit trees at that time. Here is what he writes, after his experience:

"I like my land at Morrisania so well that I am anxious to secure more of it, for it is all you claim for it; in fact, you have been very conservative in describing Morrisania. The soil is exactly as represented, as well as other features, including water supply. We have tried various crops at Morrisania, and everything grows to perfection. Morrisania is certainly an ideal place for one looking for a home or for investment."

Dr. E. S. Springer, formerly of Chicago, now of Salt Lake City, Utah, bought at Morrisania in spring of 1910, and since then has been living in the West, and has investigated many land enterprises. He recently wrote as follows:

"The longer I have my tract at Morrisania the more I am convinced of how lucky I was in buying there. From reports which come to me I learn of how many persons are hoodwinked in buying land in many parts of the West. I am now a full-fledged Westerner, and realize how many ways there are of separating a man from his money in buying land. Thank goodness, I was more fortunate in my purchase when I decided to buy at Morrisania."

See Morrisania For Yourself

If you want a tract of high-grade fruit land, where there has been only one crop failure in twenty years, and where fruits and vegetables of all kinds grow to perfection, go see Morrisania.

If some member of your family needs the benefit of Colorado's health-giving climate, go see Morrisania, for no health resort in the state has a more ideal climate.

You owe it to yourself and to your family to visit Morrisania, if you think of changing your location. The place speaks for itself. Professor Paddock and Doctor Howard know good fruit lands; Mr. Detwiler and Doctor Springer and the others who have bought at Morrisania know the place pleases them—but you should see Morrisania for yourself. Go out this spring. Only a few ten-acre tracts remain to be sold. When they are gone, no more land will be available at Morrisania. You should make your selection as early as possible.

Write for beautifully illustrated booklet describing Morrisania, and ask all the questions you will about it.

Morrisania Land & Orchard Co. P. O. Box 1277 St. Joseph, Mo.

MAKE YOUR OWN DRAIN TILE

3, 4, 5, 6 and 8 inch tile made at a ridiculously low cost on our Farmers' Cement Tile Machine. Large capacity, hand or power, no tamping or the use of pallets. Our process takes care of the proper curing as well as the proper forming. The tile are troweled thoroughly, giving great strength. Machine and product recommended and used by U. S. Dept. of Agriculture, Agricultural Colleges and Experiment Stations, and by farmers all over the continent. We ship this machine to you on 10 days free trial.

Send for Free 36 Page Catalog, telling how to tile your farm at low cost. How to take levels and get grades, lay tile, etc.

FARMERS' CEMENT TILE MACHINE CO., Box 407 St. Johns, Mich.

keeps a proper balance between all four agencies.

The following officers were elected for 1912: President, Clark Allis, Medina; first vice president, A. C. King, Trumansburg; second vice president, Luther Collamer, Hilton; third vice president, George Miller, Byron; fourth vice president, George S. Clark, Milton; secretary-treasurer, E. C. Gillett, Penn Yan. Executive committee: Frank Bradley, Barker; L. L. Morrell, Kinderhook; Chas. G. Porter, Albion; W. Ray Teats, Williamson; Eugene Collamer, Hilton.

The exhibit of fruit was much larger and of better quality than has been shown previously and the box classes made especially strong gains. Eighty-three boxes were entered in the competitive class besides many that were on exhibition only. W. S. Teabor of Upper Red Hook, won the silver cup for best three boxes. These were fit to compete with the best from the Northwest. Frank S. Hayden of Wyoming, N. Y., won first for best five boxes.

The plate display was large and mostly of fine quality. The Geneva Experiment Station made a very fine showing of fruit grown on the station farm. Many varieties shown in different places were exhibited.

Insect and diseases were fully covered by the exhibits of the College of Agriculture and the State Experiment Station and many got advice here, applied more closely to their individual conditions than the general advice given in the meetings.

The departments of Plant Pathology and Farm Mechanics of Cornell University gave demonstrations several times daily. One of these showed the advantages of the Cornell Spraying Tower and how to spray in the wind, a stiff breeze being supplied by an electrically driven blower. Spraying against the wind is one of the points that Prof. Whetzel is emphasizing and in this demonstration he showed just how to do it and how much more effective it was than spraying with the wind. The other demonstration was the testing of spray nozzles with a device invented and built by Prof. Riley and called the Cornell Sprayograph. The crowd would call for the test of any nozzle at any desired pressure and the test would be made and passed out through the crowd. The covering capacity, fineness of spray and the ability of the nozzle to fill the middle ground covered by its spray was brought out very plainly and judging from the crowds that watched these demonstrations great interest was taken in this work.

The manufacturers of spraying apparatus, orchard tools, ditching machines, motor trucks and spraying materials were out in full force and some could not be accommodated for lack of room. The nurserymen were also out with exhibits of trees and plants and if they would fill all of their orders with goods as good as the samples shown planters would all be happy. Baskets and packing materials rounded out the exhibit with dynamite enough to make a lasting impression.

The banquet seemed, however, to be the cap sheaf of the whole meeting and it was a good natured crowd that broke up a little past midnight after partaking of a good dinner and an intellectual feast provided by those who responded to the clever introductions of the toastmaster, and the latter on several occasions came very near meeting his Waterloo. All the eight hundred and sixty diners as they passed out into the early hours of the morning gave one the impression that they were already looking forward to the next annual meeting.

New York. G. R. S.

This Beautiful, Instructive Book is FREE—to You

—If You Are Interested in Fruit Growing—and want to grow better fruit and more of it

NO OTHER BOOK ON FRUIT GROWING contains so much helpful information for either the amateur or professional fruit-grower. This book is wonderful because it contains a sure cure for making fruit raising absolutely successful. It knows. It tells you how to avoid drone trees and plants—the kind that eat up your money, take up your land, time and labor, and never make a cent of profit for you. This book will prove to be a revelation and an inspiration to thousands of those who are growing fruit, but who have not been as successful as they should. It cost thousands and thousands of dollars to work out the valuable information contained in this book. It has been a life work, a soul work, and if it helps you to make more money and your work more satisfactory and successful, then we shall feel well repaid. But you can't get the grand news of how to avoid failures with your orchard until you get your copy of this book and learn the facts.

Second Edition of

"PROGRESSIVE HORTICULTURE"

The warm reception and hearty approval of the first edition, together with the heavy demand, quickly exhausted the supply. This second edition has been entirely rewritten, revised and enlarged.

CONTENTS

Greater Profits in Fruit-Growing. The Best Trees Ever Grown. Record of Pedigree. Mechanical Facilities. Storage. Fumigation. Shipping. Ordering by Mail. Time of Shipment. Co-operation. What Great Authorities Say About Pedigreed Trees. How We Graft Scions and Insure Superior Trees. Consultation on Varieties of Apples. Summer Apples, Winter Apples, Crab Apples. Growing Peaches Successfully. Elberta Peach, Hottes. Japan Blood Dwarf Peaches. Miscellaneous Peaches. Pears. Cherries. Plums. Apricots. Quinces. Grapes. Raspberries. Winfield Raspberry. Blackberries. Strawberries. Miscellaneous Plants. Nut Trees. Miscellaneous Nuts. Currants. Gooseberries. Shade and Ornamental Trees. Evergreens. Ornamental Shrubs and Climbers. Roses. Catalpa Speciosa, Etc.

This book proves that

EVERY TREE HAS A PEDIGREE

if it is worth planting. A pedigree is a record of past production in both the quality and quantity of fruit which a tree has made, as well as the regularity of its crops—a record from which can be determined its prepotency to bear fruit.

Winfield Trees Produce Habitually Pedigreed Quality—Quantity

We have a perfect record of every tree from which we take scions for propagation purposes, showing the fruitfulness—the quality, quantity and regularity of cropping. From this we know absolutely that every tree we sell will be a money maker for you. There will be no drone trees. No trees that do not pay for their care and keep.

Just send your name and address today for a Free Copy of "Pedigreed Horticulture."

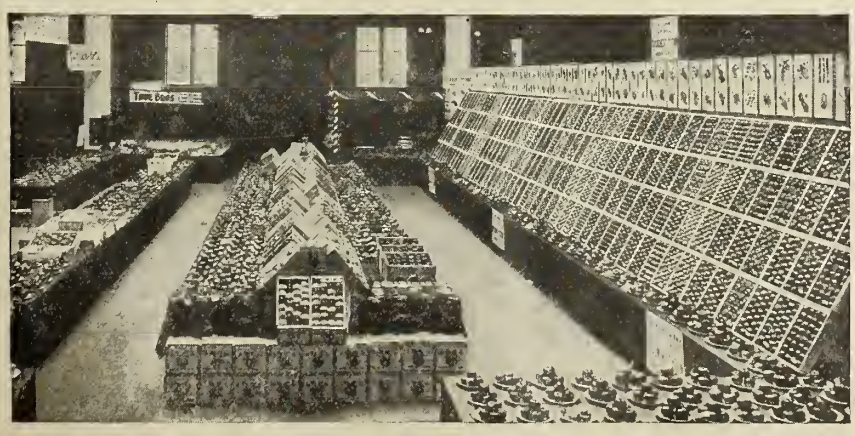
WINFIELD NURSERIES

WINFIELD NURSERY CO.
J. Moncrief, President
Winfield, Kansas

Originators of and the only nursery in the world growing fruit trees exclusively by the Pedigree Method.

Don't put off sending for your seedsman's catalogue. It is always best to get your seed order in early, and is more important this year than usual on account of the shortage in some lines of seeds.

Take advantage of our February subscription offer. Renew today.



A portion of the fruit exhibit at the meeting of the New York Fruit-Growers' Association, Jan. 3 to 5, 1912. The display made by Geneva Experiment Station at the right.

Why hesitate about

Tree Protectors

When you put out young fruit trees, put the COIL WIRE ON, and be done; have no more thought about rabbits. Used in all states. For descriptive circular, write

JOHN W. DAVIS, Jr.
Clarksville, - Missouri

In writing advertisers please mention The Fruit-Grower.

This Perfection Automatic Gate FREE for 30 Days Trial

Send no money, no contract. We pay freight. Strong Testimonials and Catalog for YOU.

Perfection Automatic Gate Co. Strasburg Virginia

In writing advertisers please mention The Fruit-Grower.

YOUR GRANDFATHER WAS A BOY

when "Peter Henderson Seeds" began to establish a reputation for high quality and dependability. "Sterling" on Silver, "18k" on Gold and "Henderson" on Seeds are the marks which stand for Best.

START RIGHT. The success of your garden depends on the reputation behind the Seeds. By the time poor seeds have proved themselves worthless it is usually too late in the season to start all over with good Seeds. Start right, and prevent disappointment.

What We Want to Send You

One copy "Everything for the Garden," a real dictionary of all things pertaining to it. Weight one pound, 204 pages, magnificently illustrated with over 800 photo-engravings and 5 plates in natural colors. The most beautiful and most complete catalogue you can imagine. Full of practical hints and instructions.

One copy "Garden Guide and Record," a book which should be in the hands of everyone, whether planting for pleasure or profit. Tells just "How and Why." Planting schedules, cultural directions, "Tricks of the Trade," and even cooking recipes which will be appreciated by every housekeeper.

One packet Ponderosa Tomato
One packet Big Boston Lettuce
One packet Scarlet Globe Radish
One packet Invincible Asters
One packet Mammoth Butterfly Pansies
One packet Giant Spencer Sweet Peas

[Packed in a Coupon Envelope, which will be accepted as 25 cents in cash toward payment on your next order amounting to $1.00 or over.]

All we ask is—tell us where you saw this advertisement and enclose 10 cents in stamps to only help pay cost of sending *all the above to you.*

PETER HENDERSON & CO. 35 & 37 CORTLANDT ST. NEW YORK CITY **EST 1847**

RAISING EARLY TOMATOES

My success with growing early tomatoes has been due to good methods in handling the plants and grading and packing the tomatoes rather than any special location of field or locality. However, for the greatest success and profits, the location of the fields and the locality often will have considerable effect.

The early tomato, no matter what variety, requires a rather light and not too rich a soil and a location which is not very subject to late frosts. However, with judicious management a crop of early tomatoes can be grown almost every year in any location with proper soil conditions. Of course the plants when set in the field must be tough, stocky and hardened to various degrees of heat and cold. I plant in the field at the earliest possible time, after the great danger of frost is past. The planting once started, it must be rushed through. In the game of earliness any delay often counts dollars to the farmer. I never hold back planting after the ground is warm because I somewhat fear a little frost, for I can make enough the years it does not come to afford to lose some now and then. Besides it is a good policy to always have some extra plants.

My experience is that much of the success of the grower depends on having the right kind of plants at the right time. The plants must, as before stated, be tough and well hardened and also must have a mass of short fibrous roots. Plants that are drawn and sappy will never have early tomatoes. They get badly checked when transplanted and are much easier injured by cut worms and other insects.

Any method of raising plants that produces good plants is all right. I have had equal results with seedlings raised in boxes as with those raised in hotbeds and cold frames. My plants are frequently transplanted and given plenty of air and sunshine. Cold frame plants can be hardened by leaving uncovered when nearly time for transplanting in the field.

Plants properly grown bear transplanting to the field with little check and can stand a surprising amount of cold. After planting in the field, if everything has been done rightly, I find little to do except keep them free from weeds till the time of picking the crop, but this means keeping the surface of the land well stirred. In reparing a piece of land for early tomatoes it is best to have the land plowed in the fall or winter or very early in the spring, and plenty of discing and harrowing to work it up well and keep everything in check. Then just at planting I always give the land a thorough stirring and continue till the plants get well started, then the task is about done.

The early tomato crop has become quite an important crop in Union and Johnson Counties, perhaps Union produces the most, but we ship to entirely different markets. Those raised in Union are almost all shipped to Chicago, while those raised in Johnson are nearly all shipped on the Big Four route to the eastern cities, and I am led to believe that we have a better market than that of Chicago.

We, here in the hills of Johnston County seldom bother ourselves about getting a good market, our greatest aim is to grow a large amount of fine specimens and pack them properly and ship them in good lots to the best market we are able to get by wire each day. We usually hit a high spot, and to say the least many of our growers are making good cold cash out of early tomatoes.

Illinois. R. B. RUSHING.

A New York Woman Poultry Raiser Tells Her Experiences.

At Allentown, Pa., during early January, a farm school was conducted for three days, and poultry was one of the chief features discussed. The management secured some of the best speakers on every subject discussed, and in selecting the speakers to handle the various poultry topics, they secured Mrs. George E. Monroe, of Dryden, N. Y., who devotes her entire time, either to her own poultry yards, or to the lecture platform telling others of her own experiences. This is what she had to say to the Pennsylvania poultry raisers:

"Poultry is a branch of farming whose product is in demand every day of the year. The variety to be selected should be one that is liked by the breeder, one that is popular in the local market, and by all means have pure-bred fowls. American markets demand a yellow skinned fowl, and the color of eggs, is different in different markets. Have pure breeds. A potato dealer sorts his potatoes. The apple grower does the same. So with the farmer, if he has a mixed flock, when he comes to sell dressed poultry he will have short ones, long ones, round ones, and flat ones. The same with the eggs. Pure bred, uniform flocks will produce uniform eggs. Breed for size of eggs as well as for numbers.

"It is said that a farmer by food cannot increase the quantity of butter fat from his cows. He must select breeds that produce a high proportion of butter fat. So with hens. Some have no ability to lay eggs and so we should breed from those that have the ability. The hen that lays, is a vigorous, hungry, happy bird, which until the last ray of sunshine is out seeking for food and is last to bed. She is the bird with the palest shanks and shortest toe-nails. You can go through your flock and pick out the layers by their shanks, because they have a long body, triangular in shape. You can also pick the layers by the way they moult. Up at Cornell, they dyed four sets of white birds four different colors. From records kept it was known just how many eggs each set laid. Those that moulted their feathers early and were clean feathered soon had a fair lay. The late moulting hens laid up to November, then stopped laying. It cannot be expected that a bird lay eggs and moult. Both are a big drain for her. The record showed that the late moulting hen made the profits. The easily moulting hens were shown to be loafers.

"As to feed, use your judgment and feed so that they come hungry to meals, but once a day give a hen all she wants to eat. A young bird needs heat. A chilled chicken means a dead chicken. After the little fellows have been raised, select for your layers. The best sellings of eggs come from matured birds. The laying hen is the bossy hen. Too often the farmer with a flock of a hundred birds, sends the best birds to market, keeping the runts and weaklings to breed from. When you see a thrifty bird making better use of its food, put a splash of paint on its wing and never let that bird go to market. If birds are hatched to lay in October, they will do best. A hen that is fed a mixed diet will never get too fat to lay. A hen cannot lay until she is fat. The yolk is the first part of the egg made and the hen must have a

COFFEE vs. COLLEGE
Student Had to Give Up Coffee.

Some people are apparently immune to coffee poisoning—if you are not, Nature will tell you so in the ailments she sends as warnings. And when you get a warning, heed it or you get hurt, sure. A young college student writes from New York:

"I had been told frequently that coffee was injurious to me, and if I had not been told, the almost constant headaches with which I began to suffer after using it for several years, the state of lethargic mentality which gradually came upon me to hinder me in my studies, the general lassitude and indisposition to any sort of effort which possessed me, ought to have been sufficient warning.

"But I disregarded them till my physician told me a few months ago that I must give up coffee or quit college. I could hesitate no longer, and at once abandoned coffee.

"On the advice of a friend I began to drink Postum, and rejoice to tell you that with the drug of coffee removed and the healthful properties of Postum in its place I was soon relieved of all my ailments.

"The headaches and nervousness disappeared entirely, strength came back to me, and my complexion which had been very, very bad, cleared up beautifully.

"Better than all, my mental faculties were toned up, and became more vigorous than ever, and I now feel that no course of study would be too difficult for me." Name given by Postum Co., Battle Creek, Mich.

"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

Wilkinson's Red Hot Heater

For Orchards, Vineyards, Gardens, Etc. Burns Wood, Coal, Coke, Charcoal, Etc. Agricultural Chemicals and Spray Materials. Note our low prices for February. Aresnate of Lead, $8.50 per hundred pound keg. Lime-Sulphur Solution, $8.00 per barrel. Flour Sulphur, $2.25 per hundred pounds. Copper Sulphate (Blue Vitriol 6c per pound. Paris Green, 16c to 18c per pound. All standard makes, guaranteed. Write for prices on pound lots.

ORCHARD SUPPLY CO.
412 N. MAIN ST., ST. LOUIS, MO.

New Radish Free

Send for Free Illustrated Catalogue of Seeds, Bee-Keepers' Supplies, Poultry Supplies, Spraying Materials and with the catalogue we will send a package of the famous White Tip Radish Seed, Absolutely Free.

Chesmore's Seed Store
410 Felix Street St. Joseph, Mo.

PRUNING Book by Professor Bailey. Tells everything about pruning. You need it. Price $1.50. The Fruit-Grower, St. Joseph, Mo.

Small Fruit Plants

in all the leading varieties, guaranteed true to name. Address

P. D. Berry, R. R. 3, Dayton, O.

surplus of fat before she can start to form the egg.

"A White Leghorn hen "Lady Cornell, which was under observation at Cornell University, laid 258 eggs in a year, weighing 29½ pounds. They sold for $7.45, at ordinary market price. The manurial value was 29 cents, while the food eaten cost 46 cents and labor was estimated at 75 cents. Deducting interest on the cost of the hen, there was a net profit of $5.28. As a ration use 200 pounds of wheat, 200 pounds of corn, 100 pounds each of heavy oats and buckwheat. For ground grain ration: 60 pounds each of wheat middlings and corn meal, 30 pounds of wheat bran, 10 pounds each of oil meal and alfalfa meal, 50 pounds of meat scraps and one pound of salt. Added to meals are water, green food, grit, charcoal and oyster shells. Use alfalfa which will cut feed bills in two.

"Buckwheat middlings have four times the food value of buckwheat. Oats make fine food and sprouted oats I consider excellent. Ten drops of formalin to a gallon of water will keep the sprouted oats sweet and prevent mold. There is no egg food in cabbage or beets, but it is an appetizer and helps to digest the grain food. Do not feed too much, because it is just as with a boy. He should not have pie or cake before his meals, so the hen should not have too much vegetables to dull her appetite. To make the shells for three eggs a week, a hen must have a pound and a half of lime. You must provide this in some available form or other and in abundance.

"This country spends millions annually on fertilizer, and it also wastes a lot. The droppings in the henhouse are most valuable. They should be taken up with an absorbent and taken out upon a growing crop. This element of the henhouse alone will pay for the labor on the hens. I prefer the treated to the raw rock as an absorhant. The number of times, to clean the house, is a personal matter. But do not take out on the fields at once in winter. Barrel and then in spring, you can distribute it through a grain drill. Do not use wood ashes on poultry manure. It releases the ammonia, the most valuable element in the manure.

"For your winter layers select the early pullets. Keep the late moulting hens, the homely, ragged looking hens, for laying eggs for breeding purposes. For utility purposes, I use birds hatched in March. For show purposes, I hatch birds in April. I do not set hens in same nest that they have been laying in, but make a nice, new, carefully inspected box so as to beware of lice. To make a good lice mixture I use 2½ pounds of plaster paris, put it in a tin pan, and over this I pour one-third of a pint of crude carbolic acid and two-thirds of a pint of gasoline. This soon will all be dried up, and it makes a fine lice powder. Sprinkle it over the hens in the nest."

H. WINSLOW FEGLEY.

One Man's Success With Poultry.

The other day I visited a poultry farm and was surprised to learn what one man can do with poultry on a few acres of land. Mr. O. C. Frantz, of the Rocky Ford Poultry Farm, Rocky Ford, Colorado, is the owner and proprietor of this farm. He was a poor boy of a family of fourteen children and started out into the world without a dollar. He was a clerk in a store for some time, and took up the chicken business as a side line. He had no capital to start with, as many who have established poultry plants, but began on a very small scale with one hen and fifteen hatching eggs. He secured a five acre tract one mile from town and here learned by experience how to manage the flock. In the several years he has been in the business he has bred up and increased his flock until at present he has several hundred beautiful Single Comb White Leghorns. I visited his plant in the winter and he showed me eggs by the hundred in the nests. He was getting $8 and $10 worth of eggs a day when many poultry keepers were not getting any. His profit last year from his poultry was in the neighborhood of $2,000 and this year he expects to clear up between $3,000 and $4,000.

Mr. Frantz is a great believer in advertising and by this method he has built up quite a business in the sale of day-old chicks, and breeding stock. While he sells a great number of eggs for hatching purposes, he is making a specialty of the baby chicks. He has shipped them to most every western state, and has recently built an incubator cellar, twelve by sixty-five feet, which has a capacity of thirty incubators of the 400 egg size. He frequently books an order for as high as 2,000 baby chicks from one man.

The laying and breeding stock are kept in open-air, curtain-front houses and the hens are given the range of the farm, where they can pick all the greens, bugs and insects necessary for egg production, health and vigor. He has recently finished a number of laying houses which he thinks will surpass anything he has ever used or seen, each house is 16x28 feet, 8 feet high in front, 5 feet in the rear, with a partition near the center; one half sun parlor and scratching room, the other end sleeping chamber. Each house affords room for 100 hens. The roosts are back far enough from the open front to prevent all possibility of a draft of air on the hens at night. He keeps the floor covered eight inches deep with straw in which he scatters the feed for the hens, and they must scratch for their living. This means exercise which develops and gives vigor to the hen, causing her to lay well.

Mr. Frantz's method of feeding for eggs is a simple one. He gives a dry mash of equal parts of bran, cornmeal, shorts and ground oats. To every 100 pounds of this mixture he gives five pounds of oil meal to which is added about 15 per cent of beef scraps. Green cut bone is fed twice a week. The whole grain ration is composed of one-half wheat, one-fourth cracked corn, one-fourth white oats.

In growing his young stock Mr. Frantz is very particular. He uses colony houses, and here is what he says about them: "Next to the open front curtain poultry houses for adult fowls is the colony house system for chicks. There used to be an idea that any old thing, box or barrel, would do for the little fellows, but the wise poultryman has exploded this idea long ago. If a new method will, at the expense of a few dollars, take 100 chicks to laying or selling period sixty days sooner, surely a small outlay of a few dollars is not worth considering in the game.

"Each house is built 6x10 feet; six feet in front and five feet in the rear, They are built on skids made like sled runners and are easily drawn by one horse. Such houses will accommodate at hatching time 150 chicks. Chicks double and triple in size very rapidly. In three weeks the sex in Leghorns can be easily distinguished, so I separate them and that leaves plenty of room for the growing pullets.

"What do I gain by such arrangement? First, plenty of room for the chicks. The air never gets bad or overheated, and whenever it rains or snows the little fellows can scamper around inside, and continue to grow same as if out doors. Second, I have fresh ground continually. When one spot gets foul, I hitch the black mare to the skids and in a few minutes the chicks have a fresh run. By this method I have pullets laying in four months and young cockerels weighing two pounds at nine weeks."

While Mr. Frantz has reached success and is now devoting all his time to the business, he says that he has done nothing more than any other sane person can do, if he gives the poultry a little intelligent care and thought. Mr. Frantz has lately purchased the five acres that adjoin him for $2,500 and intends to increase his business. He expects to have in a year or so at the least, 2,000 laying and breeding hens; he then will be prepared to hatch over 100,000 baby chicks each year. W. D. NEOLE.

Colorado.

One of the most delicious of the early sweet corns is the "Golden Bantam." Did you ever try it? Its grains are a golden yellow color, and it is unusually sweet and very early. A variety that is even earlier is the "Earliest Catawba," the grains of which are white slightly tinged with pink when ready to use.

The Cushman The World's Best Power Sprayer

Important to Orchardists

In the January issue of this paper we gave sweeping and undisputable evidence that the Cushman is the most efficient spraying equipment manufactured. It has a great number of very important features that that no other sprayer has because we have them patented and they are for the use of our customers only—who are going to be the big fellows who make fortunes out of the fruit business. We know positively that if you could compare the Cushman with any other sprayer, in your own orchard in actual spraying work, that no other manufacturer could give you one.

Get Your January "Fruit-Grower" and Read Our Story pages 4-5 again

Gold Medal Won at the National Horticultural Congress, 1910 We Also Won in 1909

Notice what the big experts say and what big successful orchardists who use it say. Prospects for a big crop this year are immense, but you'll not get half the money you ought to unless you GET A CUSHMAN AND SPRAY RIGHT

Send us your name and address and we will send you a Free Copy of Our Spraying Guide and Illustrated Catalog.

Tell us how many acres of bearing trees you have—ask for any information wanted—and we will quote you our Special Low Prices

Address all inquiries to

Cushman Power Sprayer Company
ST. JOSEPH, MO.
BRANCH, SPOKANE, WASH.

Post Toasties

A Treat So Sweet; Add Cream Then Eat.

Post Toasties

"The Memory Lingers"

Postum Cereal Company, Limited, Battle Creek, Mich.

HEMINGWAY'S LEAD ARSENATE

The brand which is used in all of the great Apple Growing Districts of the country—The Blue Ridge Slopes, The Ozarks, Western New York, Michigan and the famous valleys of the great Northwest.

Lead Arsenate of the Highest Standard of Manufacture, Both Chemically and Physically.

Hemingway's London Purple Company, Ld.

Write for Booklet and Prices

New York

Sixty-four Years!

Every packet of Henderson's seeds that is sold has behind it the experience of 64 years of successful seed growing and selling. The methods of seed testing and trials that were the best three generations ago, have been improved and bettered by us from year to year and are, today still the best. The initial cost of the seeds is really the smallest cost of your garden and it pays to be sure you have started right. Henderson's are Tested Seeds.

Special Offer

Our 1912 catalogue, Everything for the Garden, a book of 204 pages, over 800 illustrations, color plates, etc., will be mailed on receipt of 10 cents. In addition we will send our Garden Guide and Record and our collection of 6 Henderson's Specialties, in a coupon envelope which will be accepted as 25 cents on any order of one dollar or over.

Peter Henderson & Co.
35-7 Cortlandt St.
New York

THE FRUIT-GROWER
ST. JOSEPH. MISSOURI

Title Registered in U. S. Patent Office. Bro. Jonathan—Trade-Mark—Registered

Copyright, 1912, by The Fruit-Grower, St. Joseph, Mo.

Address all communications and make remittances payable to "The Fruit-Grower," Eighth and Charles Sts., St. Joseph, Mo.

WM. G. CAMPBELL, General Manager JAMES M. IRVINE, Managing Editor
E. H. FAVOR, Associate Editor

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....J. C. BILLINGSLEA.....First Nat'l Bank Bldg.
New York Office..... A. H. BILLINGSLEA.....No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS.....New York Life Bldg.
St. Louis Office.....A. D. McKINNEY.....Third Nat'l Bank Bldg.
Minneapolis Office..... ROY R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents Agate Line. $7.00 per inch. Fourteen Lines to an Inch.
Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
No advertising in class generally termed "Objectionable" accepted under any conditions. Editions mailed on first day of month. Forms close on 20th of preceding month, i. e., January forms close December 20th, etc.

An Advertisement in The Fruit-Grower will place you in touch with One Hundred Thousand of the Most Prosperous Farmers in America

SUBSCRIPTION RATES

Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c, or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list.

Remit Coin, Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 FEBRUARY, 1912 Number 2

How Commission Men Equalize Sales.

A Fruit-Grower subscriber living in southern Missouri, in a district which has no shipping association, writes us as follows:

"What's the use of growing high-grade strawberries, when the commission man puts your fruit on an equality with that of the man who ships inferior stuff? Here's what I found last season: I shipped some good strawberries to St. Louis; I have been in the business a long time and know how the fruit should be put up. My neighbor shipped some mighty poor berries at the same time. My returns were 90 cents a crate, net, while he received 85 cents net for his shipment, both consignments going forward the same day.

"Not being satisfied, I went to St. Louis and watched to see our respective shipments on market. I saw my berries sold to a man who shipped them farther north, price being $1.80 per crate, while my neighbor's berries went to peddlers and preserving plants, at 30 cents a crate. And yet returns on this consignment were the same as before, 90 cents per crate for my fruit, and 85 cents for his. Now, where is the advantage of shipping good fruit?"

The evil of which this correspondent complains is well known to everyone who has shipped any considerable quantity of fruit on consignment. The commission man probably thought he was acting honestly by the shippers, since he did not retain any of their money for his own use. But, in reality, his was the worst kind of robbery, for he defrauded the man who shipped sound fruit and deceived the man whose berries were almost worthless—and both suffered by the deception. It would probably have been better for the man whose berries were sold for 30 cents a crate if he had been compelled to put up money to pay express charges, for he would have learned that it doesn't pay to ship inferior fruit. And of course the man who marketed the sound fruit was injured and is justified in raising the question, "Does it pay?"

Commission men have been known to equalize sales in this way many times. They seem to fear to report to one grower that his fruit could not be sold, while a near-by grower received good returns. Of course, every sale should be reported just as it occurs, but in too many cases, as in this one, they "rob Peter to pay Paul," and doubtless satisfy their conscience because they do not profit by the transaction.

There is only one thing to do, as we see it—to organize a shipping association, which will see to it that every crate of fruit is inspected before shipment. Then all growers will get just what their fruit brings. Until then our correspondent should search for commission men with backbone, who will not only pay him the price his fruit brings, but who will tell the man who ships inferior stuff the truth about his berries when they reach market. It isn't expecting too much of commission men, we think, when we ask them to be not only honest, but fair. Indeed, they cannot be honest without being fair.

Advertising Fruits to Increase Consumption.

In his annual report to the members of the Ozark Fruit-Growers' Association, Manager P. A. Rodgers discussed a very important subject when he referred to the need of advertising their fruits, in seasons of large supply, to increase consumption.

Mr. Rodgers told of an experience he had in St. Louis two years ago, when a little advertising in the daily papers of that city cleaned up the peach market, which had been glutted with fruit previous to the advertising. He said that it is probable that within a few years the strawberry crop will be so large that the demand will need stimulating by judicious advertising in the markets where the associations' berries are on sale. He said that, as an illustration, the local newspapers of Iowa might be used to create a demand for strawberries; if this advertising is properly done there can be no doubt that much greater quantities of berries will be bought for canning and preserving.

Mr. Rodgers is unquestionably right in saying that the consumption of berries can be increased by advertising. The California orange growers who have advertised the "Sunkist" brand have certainly found that the advertising was profitable, for their appropriation for this purpose has been increased.

Mr. Rodgers and the members of the Ozark Fruit-Growers' Association should not make the mistake of advertising plain strawberries, however. Instead, they should adopt a trademark label, use it on every package sold by the association, and then when any advertising is done, let it push the sale of this particular brand of berries, rather than advertise strawberries in general. Unless this is done, somebody else with strawberries to sell will reap the benefit of the advertising.

There are great opportunities along this line. There is no reason why strawberries, or peaches, or apples, should not be advertised under a certain brand, just as Uneeda Biscuit is advertised by the National Biscuit Company. Such advertising will have two results:

First, the demand for strawberries in general will be stimulated by this publicity; and, second, consumers will be more likely to ask for the advertised brands, particularly if they know that a reliable association stands back of this brand and guarantees the quality of all fruit shipped.

There's a great difference in strawberries which have been shipped any considerable distance, and shipping associations should take advantage of this point in planning their advertising campaigns. And of course this applies equally well to shippers of other fruits.

How About Parcels Post?

Have you written your congressman and the members of the United States senate from your state, urging them to support a parcels post bill at this session of Congress? If not, will you not write them at once?

Now is the best time in the world to line them up on this subject. Ask your congressman how he stands on this subject. He comes up for re-election this year, and you have a right to know how he stands on the parcels post bill. There are those who oppose parcels post, thinking that if we have parcels post the country merchants will suffer for the benefit of mail-order houses. We don't believe any such thing, and we are for the bill. The most effective opposition against parcels post, however, comes from the express companies and their friends. The opposition of the express concerns is well veiled, but it is effective nevertheless.

Get busy with your congressman—and do it now.

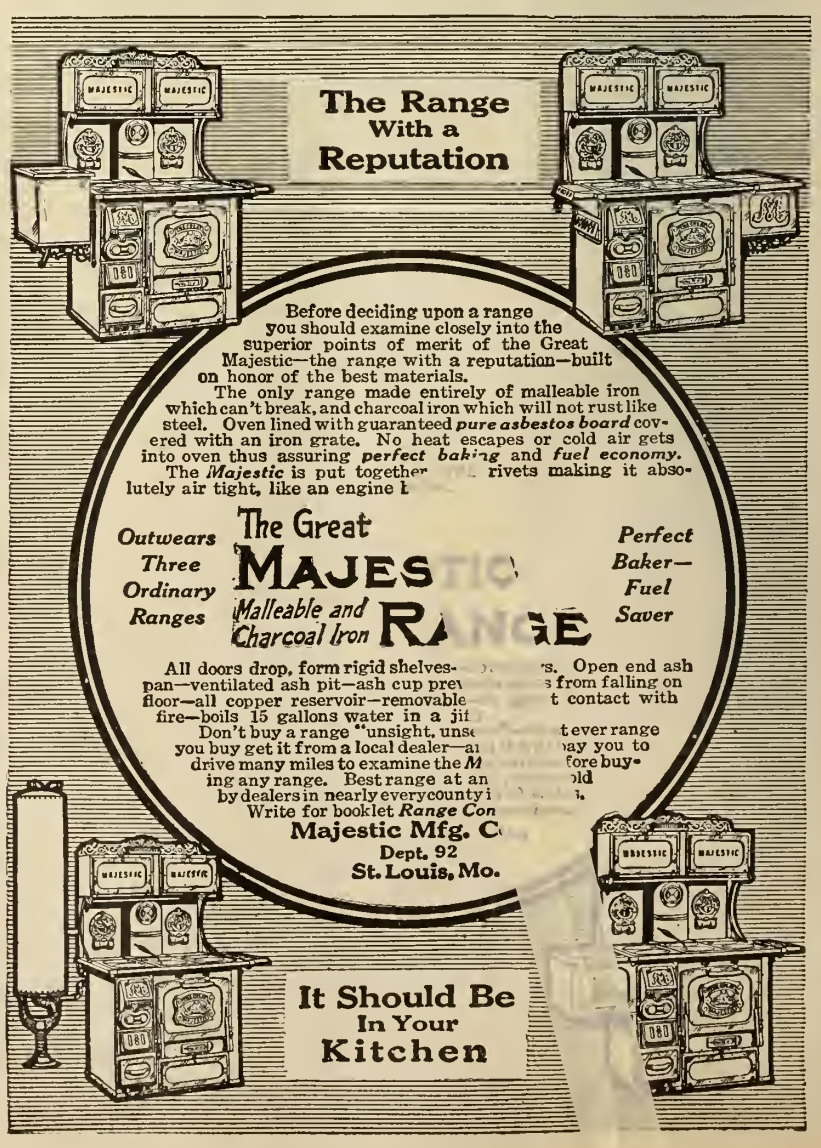
Resignation of John F. Moore.

At the annual meeting of the Grand Junction Fruit-Growers' Association, recently held, John F. Moore, for years manager of the association, tendered his resignation and it was accepted. In accepting his resignation the members of the association passed resolutions expressing their appreciation of the services of Mr. Moore, who served as manager of the association for fifteen years, and who is largely responsible for the enviable position the association occupies today. Mr. Moore has not announced his plans for the future but will likely continue to market fruits from the Western slope, for he has extensive orchard holdings there.

The resignation of Mr. Moore is not a surprise to those who know him. He has had a hard fight lately to keep all members of the association in good humor, and, as he expressed it, "a house divided against itself cannot stand," and he resigned as manager.

John F. Moore is one of the best-known men in the fruit trade in this country. It is not too much to say that he has done more than any other one man to push the sale of Colorado fruits. He has labored in season and out for the association of which he was manager, and much of the success of this organization is due to his efforts. The fight against him has been particularly strong the past season, but it is safe to say that Mr. Moore's work in selling the crop of fruit for 1911 will compare most favorably with the record of any other association in the country. We have had personal experience with this association under Mr. Moore's management, and believe that good service has been rendered at all times. Fruit-growers often expect too much of the managers of their associations, and fault-finding and knocking has been responsible for the undoing of many organizations of farmers. If prices are off the management is blamed; if cars are short, it's the fault of the management, and so on. It is said the devil chuckles gleefully when Christians fall out, and likewise it may be said that those who want to get farm produce at rock bottom prices rub their hands with ghoulish glee when members of a shipping association stir up a row in their organization.

Our information is that Frank R. Davis, who has been assistant manager of the Grand Junction Association, succeeds Mr. Moore as manager. Mr. Davis has had much experience at this work, has a strong board of directors back of him, and The Fruit-Grower wishes him much success in his new position, and trusts that the prosperity of the organization will increase as greatly under his management as it has under the management of Mr. Moore.



$25 in Gold for a Name

I will pay $25 for the best name for my new smudge pot—every reader of The Fruit-Grower should try for this prize.

This new smudge pot is the result of ten years' work. I am president and manager of one of the largest commercial orchards in the Middle West. I had to perfect a smudge pot that would meet all requirements and I succeeded. You fruit growers are welcome to the results of my experience and recent invention.

For simplicity, durability and utility, it beats them all. Made of galvanized iron—won't leak or rust—regulated fire heater—burns all oil—holds three gallons, it is the one absolutely successful smudge pot made.

But it has not yet been named.

Now, Listen!

Send me 35c and I will ship you the smudge pot. Test it. Try it every way. Then select a name—a good, short descriptive name. Then submit your suggestion.

The following will act as judges: George C. Richardson of the Richardson Frost Prevention Company; E. H. Favor of The Fruit-Grower and L. A. Goodman of the Pomological Society.

The Winner will be sent $25 in Gold and results will be published in The Fruit-Grower

RICHARDSON FROST PREVENTION CO.

DON'T FORGET—Send for Sample Today
We are now ready to fill all orders

By Geo. C. Richardson KANSAS CITY, MO.

FERTILIZER FROM SMOKE

A preliminary report on the much talked of investigation that the Department of Agriculture is making on the potash deposits of the United States will soon be issued by Secretary Wilson in the form of a report from Professor Whitney, Chief of the Bureau of Soils, who is making a thorough investigation of the fertilizer resources of the country by direction of Secretary Wilson through a special appropriation authorized by the last session of Congress by an amendment from the Agricultural Appropriation introduced by Representative Lever, of South Carolina.

The report states that enormous stores of potassium exist in the United States and that quantities of these deposits will soon be utilized on a commercial scale. It further makes the following interesting deductions and recommendations. "The much increased production and wider use of commerical fertilizers must accompany or closely follow the changes and readjustments now taking place in the United States. The United States has within its boundaries supplies of raw materials for a standard type of fertilizers. These supplies will be ample for a long or indefinite period. Official investigation, supervision, and control of natural supplies of raw materials are very desirable—to prevent undue wastage, to encourage legitimate manufacturing, and to conserve the interests of the public, especially the farmers and small investors.

The most promising sources of potash in the United States, the report states, are the beds of seaweed or kelp groves along the Pacific Coast. These groves are frequently very extensive, the most important of which lies along the southern coast from Point Sur to Magdalena Bay. The report states, however, that there are important deposits in other sections of the country and adds significantly that "conditions points to Salt Lake City and Ogden as the great fertilizer manufacturing centers of the future." "Hitherto the smelter interests have objected to converting their fumes into sulphuric acid on the two-fold ground that the people in their localities do not use fertilizer and if they did use them the production of acid would be far greater than the demand. But if the smelters of Utah were to follow the suggestion here offered, they could put high grade fertilizers on the market so cheaply that in a few years the agricultural interests of the surrounding territory would use their entire output, and an important industry would develop. Obviously, it would be a public work of the first national importance to develop such an industrial center midway in the territory between the Mississippi and Pacific Coast."

Prof. Whitney is evidently reserving more definite information which will reveal the locations of potash deposits in the country for a later report on the ground that the investigation has not progressed far enough for him to give definite information regarding these deposits, as the investigators are now engaged in field investigation and laboratory analysis.

The report states that potash beds may be found in the Humboldt Basin, Nevada, and the Suprise, Warner and Christmas Valleys of Oregon, and the Salton Basin, of California, but explaining "an enormous evaporation must have taken place to deposit any considerable quantity of potash from such natural waters as are now known entering the desert basins, and evaporation possibly greater than there is any reason to believe actually took place. There is no evidence that high concentration of potash existed in the earlier drainage, or that any selected action ever took place. The existence of potash beds in arid regions of this country cannot be predicted with any confidence."

The report, in conclusion, states that at present about $120,000 annually is spent in this country for commercial fertilizers, of which more than 80 per cent is spent in the South Atlantic states, and about 3 per cent west of the Mississippi river. The use of fertilizers in Texas, Mississippi, and the citrus fruit regions of California has been increasing rapidly, however, in the last few years. With the development of the use of fertilizers in the older sections of the country, and the certainty of extension into all the sections of the West, a vast industry must come into existence in the next few years of fundamental importance to the agricultural interests and to the material development of our people.

Northern Pacific Demonstration Train.

On Monday, January 8th, a completely equipped demonstration train leaves Moscow, to take in every station of importance along the Northern Pacific lines in Northern Idaho. One car containing the exhibit from the Department of Horticulture and Agronomy from the University of Idaho, and another car is devoted to live stock.

The exhibit from the Department of Horticulture in charge of Prof. W. H. Wicks, occupies one entire side of the car. The material is arranged in a progressive way and includes all phases concerning the production of the apple from selecting the location for planting an orchard to various kinds of by-products. At the front of the car is arranged various types of proper and improper kinds of trees for planting in Northern Idaho. In this collection is represented the piece root and whole root grafted and budded trees. Also irrigated and non-irrigated stock is well displayed. This nursery stock represents the Wagener, Rome Beauty and Jonathan, all recommended commercial varieties for this part of the state. With this subject of planting is displayed models of all recommended systems of planting. The next section of the space is devoted entirely to spraying and control of economic insects and fungi. Here is found mounted in chart form all kinds of spray material, spraying equipment and insect pests and diseases. Directions for making home-made sprays, and spraying calendars are well displayed. The last section of the space is devoted entirely to fruit packing. This display very forcibly sets forth all the commercial types of packing. The commercial varieties adapted to Northern Idaho are used in this work so one can see the best style of packing to use with these varieties.

During the time allotted to each stop for the discussion of horticulture the essential points in conducting commercial fruit growing in a successful manner are covered.

Subscription expired? Renew today.

In Your Garden

the initial cost of the seeds is the smallest part of the expense and yet it is really the most important item. In buying Henderson's seeds you know you are starting right. If your garden is not a success, you can eliminate at least one of the possible reasons. Sixty-four years of successful seed growing, testing and selling has given us an experience that should and does make Henderson's seeds the best that it is possible to buy. Henderson's are Tested Seeds.

Special Offer

Our 1912 catalogue, Everything for the Garden, a book of 204 pages, over 800 illustrations, color plates, etc., will be mailed on receipt of 10 cents. In addition we will send our Garden Guide and Record and our collection of 6 Henderson's Specialties, in a coupon envelope which will be accepted as 25 cents on any order of one dollar or over.

Peter Henderson & Co.
35-7 Cortlandt St.
New York

HOME CANNING INDUSTRY

By-products and side lines on the farm are subjects of growing interest these days; add to this the desire on the part of the owner of a small bit of ground to get as many dollars as possible from each acre, and you have sufficieut reason for the interest in the subject of small commercial canning plants on the farm.

It is not to the best interest of the farmer to sell his product in the raw state, and let some other fellow put it in condition for the table or the merchant's shelves, and incidentally, make the larger profit. The farmer should aim to produce as near as possible a finished product on the farm. Then he experiences the fascination of being a real manufacturer, so to speak, putting an article on the market bearing his own name. His canning plant gives employment to his wife and children who find it a welcome change from the regular routine of farm work.

We will quote the experience of a grower of tomatoes as told by himself in Farm and Fireside some months siuce, viz:

"I first became interested in this subject three years ago, when I grew two acres or tomatoes for a small local cannery, and came out on the wrong side of the balance sheet. The price they paid, 25 cents per bushel of 60 pounds (or something over $8 per ton), would not enable a man with a small acreage to make a living, to say nothing of keeping up the fertility of the soil.

"I decided that if I could can tomatoes myself, although it would mean much more work, it would enable us to make two or three times as much per acre. Besides, we could sell fresh vegetables only when the market was good, canning only the surplus, not only of tomatoes, but other vegetables as well.

"I have not done a large commercial business, only putting up a few thousand cans, a few of which I retailed to the consumers in a mining town, but most of which I wholesaled to retail grocers in Fairmont, only three miles away from my place.

"So much for my own experience. The question most readers will ask, I think, is: "Will home canning pay on the average farm?" Certainly it pays, more than anything I have ever attempted, except growing strawberries. As to how much it will pay, that depends on many contingencies: The locality, condition of the crops and markets, how you market, and last but by no means least, the man behind the business. I will give you some figures and you can work your own problem out yourself.

"A bushel of tomatoes should fill 18 cans; I have filled 20 or more from a bushel, but 18 is a fair average, take one season with another. Cans, cases, labels and all supplies cost me about 2½ cents per can. Under no circumstances should they cost more than 3 cents, including freight. I have six children between the ages of nine and seventeen. My family can easily put up 300 cans in one day. By employing neighbors' children to peel tomatoes, which will not cost much, we can easily put up 500 to 600 cans per day. So you see we are able, at little expense for labor, to put up many thousands of cans in a season, although we put up less than 3,000 the past season, not having the stuff to can.

"Suppose a man has good soil and intends to grow five acres of tomatoes for a cannery at the railroad. He will do well to get 200 bushels per acre, or 1,000 bushels in all, which he must pick and haul right to the factory at 25 cents per bushel, or only $250 gross. Now if he has an outfit, costing perhaps, $50, and a shed to work in, he and his family will fill with those same 1,000 bushels of tomatoes, 18,000 cans; or 1,500 dozen. At 90 cents per dozen they will bring $1,350 gross. The cans and supplies will cost about $450, while $10 to $15 will cover fuel and gasoline (for soldering furnace) and all incidentals, leaving, say, $850 as the return for the year's tomato crop—$600 more than the factory would give. Figure it yourself if $600 would be fair pay for the family's six or eight weeks' work.

"Will the canned product sell? Readily, and the longer you follow the business, the better the market, for if you take pains, you can produce even a better article than the large canning plants and people will call for your goods."

Order Your Seeds From Field-Cut Out the Risk

You ought to buy seeds the same way you would buy anything else—with full assurance beforehand that with proper care they will do just what you expect and pay for. You may not be used to doing this, but you *can* do it, *if you buy right the first time*—order from a seedsman whom you can trust, whose success in business is built on the success of his customers. That's *my* record—the only one I want to be judged by.

My Seed-Trial Grounds Are My "Conscience"

In my big trial grounds here at Shenandoah—the largest in the West—I spend hours and days testing seeds, so that I may always be *sure* that you are getting the reliable seeds I want you to have. All summer long I grow samples of the seeds I sell, in little plots alongside samples obtained from other leading seedsmen. That's why I can tell you how my seeds grow, and whether they're better than the other fellow's, or not so good—and if mine show up inferior, you bet **you** never get a chance to buy them!

Another important thing is my **germination tests.** I have a big special incubator—where I put samples of all the seeds I offer, keeping them moist and warm till they begin to sprout. Then I count the sprouted seeds to see how many out of each hundred have grown. If the average is high, all right; if not, the whole lot of seed goes to the dump, regardless of the price I paid for it.

My New Catalog Contains Garden and Farm Hints Galore

—good, sound, hard-shelled **facts**; the kind you get hammered into you by experience. I've been a farmer and market gardener ever since I was a little tad—I'm still at it—and what I've learned in these years of hard work I've put down here to help you.

My 1912 catalog is mighty **good-looking,** but it **reads better still** — and the seeds it describes are **best of all!** Honestly, you oughtn't to **try** to make garden, or turn a furrow till you've read it. Address me a postal and give it to the mail man today, and see how quick I get that book into your hands!

HENRY FIELD, PRESIDENT, Private Desk 15
Henry Field Seed Company **Shenandoah, Iowa**

Don't Kill the Birds.

To the Fruit-Grower:

How many farmer friends have taken time to study the question of how much benefit the birds are to us? Nature has certain laws to govern all things, and one of the most important of these to the farmer and to the rest of mankind, as well, is the preservation of our forests and orchards. It is to be deplored that of late years, so many of our insect-eating birds are being killed, thereby leaving an enormous army of insects to commit their outrageous depredations on field and forest alike. With nothing to stay the march of this silent army, and with the wonderful strides they are making on all vegetation, and with the awful slaughter of our best friends, the birds, this question is getting to be one that demands immediate attention.

We can prevent the ravages of insects a very little bit on a very small area, by spraying, but with all the surrounding country to breed and multiply in and the great rapidity with which they increase, it does not take long for them to gather force enough to sweep down upon us and destroy a large field in a single day.

It is a sad sight to see so many orchards that were planted out with great expectations and many fond hopes, that in the future they would bring us pleasure and profit, are now in the last stages of death and decay, all caused by the ravages of these hordes of insects. It is a pity that so many of our forest trees and valuable timber are annually sacrificed to this pest.

Early in the spring we plant our gardens and fields with the hope and expectation of reaping a bountiful harvest, but how often have our hopes and desires been shattered and our gardens and fields ruined, all because we thoughtlessly killed our natural protectors, the friendly little birds. Have you ever thought about how many detrimental insects one single bird will destroy in a year? Have you ever thought about how one single insect will increase and multiply, if not destroyed, in a very short time? Millions I should say; multiply this by the millions that the bird eats, aud you see at once how beneficial their protection is to us.

We cannot call back the lives of all our slain friends, that through their own natural instinct save our gardens and fields, but we can, if we will, use just a little forethought and judgement, spare the bird and spoil the insect. So please don't kill the poor little innocent birds.

Tennessee. E. A. ROGERS.

Ask your neighbors to subscribe to The Fruit-Grower.

Apple Seedlings

All Grades. Both Straight and Branched. Especially long on 2-16 to 3-16 inch Straight.

Apple Grafts

Piece and Whole Roots

Large General Stock. Ask for Prices

The Shenandoah Nurseries
D. S. Lake, Prop. **Shenandoah, Iowa**

Please Mention The Fruit-Grower whenever you correspond with our advertisers

OZARK FRUIT-GROWERS

The annual meeting of the Ozark Fruit-Growers' Association at Monett, Mo., Jan. 2nd and 3rd, was the best attended meeting the organization has ever held, and it is predicted that the results of the meeting will be more far reaching.

One step in advance was taken when the association went on record as favoring full quart boxes for strawberries. Heretofore two sizes of boxes have been used, and this has caused confusion, and now it is proposed to use the standard quart box exclusively. Some of the growers have boxes left over from last year, but these will be used this season for shipment to markets which do not discriminate against the short measure.

The practice of grading and packing strawberries in the shed, rather than by pickers in the field, will be followed by all members hereafter. It has been found that berries carefully graded and packed carry to market much better and bring better prices than where the fruit is shipped just as it is placed in the boxes by pickers.

Perhaps the most important matter discussed was the proposition to increase the commission collected by the association from the members for handling fruit shipments. For several years this commission has been 2 per cent, and it is now proposed to increase this commission to 3 per cent.

This change will be made upon the recommendation of Mr. P. A. Rodgers, general manager of the association, who told how lack of funds had handicapped the officers in their work. A commission of 3 per cent will afford enough revenue, perhaps, to do a lot of things that have been neglected heretofore. For instance, Mr. Rodgers said that if the association had a little money with which to advertise its fruits, the consumption could be greatly stimulated and glutted markets could be relieved of their surplus produce. He told of having been in St. Louis two seasons ago, when peaches were a drug on the market. Prices were low, and still the consumers would not buy. He suggested to the dealers that they advertise in the St. Louis daily papers, calling attention to the fact that peaches were plentiful and cheap, and that they were of fine quality; that there would be no local fruit to put up, and that the housewives who wanted peaches to can would do well to lay in their supply at once.

"The effect of this advertising was marvelous," said Mr. Rodgers. "As soon as it became known that peaches of high quality were on sale at reasonable prices, it seemed that everybody wanted to buy. The streets leading to the market house in St. Louis were blocked with men, women and children, carrying peaches in baskets of all kinds, and even in buckets. The market had been slow and dull previous to the advertising, and within a few days after the advertising campaign began, everything was cleaned up and still the people wanted more.

"Some of these days we will need to stimulate the consumption of strawberries in this way, and our association should have funds with which to advertise in markets where we are distributing our berries. With an increased income we can be in position to get better returns for our fruit, simply by increasing the demand for the same. Advertising will do the work, but we must be able to pay for it."

Secretary Stroud and Manager Rodgers were instructed to prepare a new contract with affiliated associations and at once submit same to local secretaries. Then at the meeting in March this new contract will come up for adoption. The two important changes proposed refer to the increase of commission from 2 to 3 per cent, and to the provision that the association must handle all fruits tendered for shipment. It is proposed to amend the latter provision so that the shippers must furnish good fruit, otherwiso tho association is not bound to receive it. The old contract was not fair to the association in this respect.

During the various sessions interesting subjects were discussed by different persons. F. W. Faurot of the Missouri Fruit Experiment Station made an excellent talk on the general subject of spraying. This subject was also touched upon in an excellent address by Prof. Ernest Walker of the Arkansas Experiment Station.

In this address Prof. Walker gave it as his opinion that weather conditions have not been more unfavorable in recent years, but that perhaps insects and fungi have so weakened fruit trees that they are not capable of resisting degrees of temperature which would not affect healthy trees. He made a plea for better care of orchards and fruit plantations. Not larger orchards, but better orchards, should be the watchword. That a large acreage is not necessary, he said, is proved by the experience of many men who are making good money on small areas. Prof. Walker told of a man living near Fayetteville, Ark., who has forty acres of land. Half this acreage is planted to orchard; he keeps a flock of thoroughbred chickens, and has a dairy herd of twenty cows. Two sons have graduated from the Arkansas Agricultural College and are now back on the farm. And all this on forty acres.

James M. Irvine, editor of The Fruit-Grower, congratulated the association upon the excellence of its strawberries and the splendid reputation which this fruit enjoys. He told of having visited a preserving plant at Canon City, Colo., the manager of which said that strawberries from the Ozark country were purchased in carlots, and used for making high-grade preserves. This gentleman said they were unsurpassed for this purpose, on account of their firmness and fine flavor. He, too, urged that better care be given small orchards, and hoped for the time when Missouri and Arkansas fruit-growers would not boast so much of the great number of acres they possessed, but of the quantity and quality of fruit produced. He marveled that the association had done such good work on an income of 2 per cent of net returns, and said that practically all the associations in the Western states charge 5 per cent commission.

At the election of officers P. A. Rodgers was again chosen as manager, Capt. Geo. T. Lincoln was re-elected president, Dr. E. L. Beal, first vice-president, and R. M. Hitt, second vice-president.

The members of the association all feel encouraged at the work already accomplished, and look forward to a good season for 1912. Conversation with some of the members developed that other fruits than strawberries, peaches and apples are to be grown and shipped in quantities. Around Lanagan, Mo., grapes and blackberries will be tried; other places will try raspberries and grapes. It is desired by this means to increase the length of the shipping season, and by having an acreage of different kinds of fruits there will be less danger of having a total crop failure.

Ten Thousand Acres of Orchards.

The Spokesman-Review says that County Assessor Wickham, of Hood River, Ore., has just completed a tabulation of the county's orchard land, which shows the total number of acres to be 10,354. The figures giving the number of acres of orchard land of different ages are as follows: One-year-old trees, 2,444 acres; 2-year-olds, 1,478; 3-year-olds, 1,564; 4-year-olds, 1,256; 5-year-olds, 941; 6-year-olds, 737; 7-year-olds, 514; 8-year-olds and over, 1,420. Using the minimum figures at which the tracts of the respective ages sell the valuation will be about $4,500,000.

Make your garden a little larger this year than you have formerly done. Get a home canning outfit and turn all your surplus vegetables into canned goods, and realize more real cash from your garden than you dreamed was possible.

Josef Hofmann Is Now Acknowledged the Greatest Pianist in the World

In that opinion practically all the leading musical critics now agree. It was this belief in Mr. Hofmann's powers and musical knowledge that led the Editor of THE LADIES' HOME JOURNAL, five years ago, to ask the great pianist to join the magazine's editorial staff and conduct a monthly department in which he would answer the questions of piano students.

For five years Mr. Hofmann has done this, and is doing it now. He has answered hundreds of questions during that time, placing his unquestioned knowledge of the piano at the free disposal of every piano student.

So that no matter in how small a community a girl who loves her piano may live or how far removed from a musical center she may be, the free advice of the greatest of living pianists is at her disposal. Read his department, for example, in the February LADIES' HOME JOURNAL.

For 15 Cents You Have a Copy

THE CURTIS PUBLISHING COMPANY

INDEPENDENCE SQUARE, PHILADELPHIA

Is College Worth While for Girls?

A college woman asked 4 questions of hundreds of college women who represent all ages, all sections of the country, all classes, most occupations, 62 institutions where women study, and 60 years of college education in America.

The questions were:

How did college affect your health?

How has your college education helped you?

How did your college education fail to help you?

In what way could the girls' college be bettered?

Perhaps this is the most careful and searching inquiry as to the absolute value of a college education by the only women qualified to speak—the women who tried it.

The results of these months of work are now being given in THE LADIES' HOME JOURNAL. One of the articles is in the February number.

For 15 Cents You Have It

THE CURTIS PUBLISHING COMPANY

INDEPENDENCE SQUARE, PHILADELPHIA

A POULTRY-FRUIT FARM

A Combination That Could Be Worked At a Profit on Almost Any Farm in Fruit Belt

The West Virginia Experiment Station has issued a bulletin, No. 135, entitled "West Virginia as a Poultry State," which might very well have been written especially for fruit farmers, for the recommendations contained in this bulletin are the best that could be made from the standpoint of the man who combines poultry raising with fruit culture.

"The success or failure of any poultry enterprise depends to a large extent upon the character of the soil upon which the poultry plant is located, for if the soil is too heavy and tenacious there is a tendency for disease germs to accumulate to such an extent that after a time the fowls become unthrifty and unprofitable," says this bulletin. "Soil contamination with its consequent deleterious effects can be avoided to a certain extent by employing colony houses so that the fowls can be moved to a fresh piece of ground each year.

"Practically all soils adapted to fruit culture are adapted to poultry, for the reason that both require well drained soils. The production of fruit and poultry, too, may be made to go hand in hand, the trees furnishing shade so necessary for the comfort of the fowls during summer, and the poultry in return picking up many a noxious insect which might destroy valuable fruit, and gradually enriching the soil of the orchard by their droppings. The work of producing fruit and poultry can be so arranged that the slack period in the care and management of the flock will come when one is busiest with the fruit. Thus practically a double income may be obtained from the same area of land, each branch of the work helping the other.

"About 89 per cent of all farmers raise chickens, and eggs may be said to be almost a universal food as well as one having a high nutritive value. The production of eggs is steadily growing, but the demand is growing faster than the supply, consequently the price of eggs is going up. In 1899 the farm price was 11.15 cents per dozen as an average for the United States, while in 1909 the average was 19.7 cents.

"What is to be the future of this great industry? Are the poultry products to be produced on enormous poultry plants where fowls are kept by the tens of thousands, or are the farm flocks to produce the great bulk of the eggs and market poultry as at present? There is only one answer to this question. We shall continue to produce the bulk of the poultry products upon the farm, and for these reasons:

"In the first place the principal item of expense in keeping fowls is for the feed. The farmer has cheap feed. The grain on the farm is cheaper than after transportation and commissions have been added to it. Therefore under all conditions and in all cases the farmer has the advantage of cheap feed. The farmer, too, has the decided advantage of cheap labor. The fowls on the farm are taken care of largely by the children, the boys and girls that are growing up on the farm, and so the farmer is not confronted with the labor problem. Then, too, the farmer's fowls have free range. They pick up a considerable portion of their food from waste grain, from table scraps, skim milk and from other things that otherwise would either go to waste or would not be utilized to such good advantage. And when the fowls are raised under free range conditions they have a tendency to be more vigorous and productive than where thousands of fowls are kept together and where the soil frequently becomes impregnated with disease germs which so reduce the vitality of the fowls that they are no longer profitable."

Since farms must supply poultry and eggs, the author of the bulletin, Prof. Horace Atwood, urges that more fowls be kept in West Virginia—and of course the same advice will apply in other states where conditions are similar. He continues:

"Not only should the farmers of West Virginia keep more fowls, but they should keep younger fowls. On the farm, fowls of all ages run together. There is no system about keeping track of the age of the birds. When a chicken is caught for market or for Sunday dinner, it is usually the first one that the farmer gets hold of. This is not the way to keep up a profitable farm flock. The younger the fowl, the more productive. The most profitable period in the history of a fowl is the first or pullet year, as one should get not only a high egg production, but also a considerable increase in live weight. In general an old hen is a poor layer. There should be some system by which a record of the age of the fowls can be kept. This can be done very easily, either by punching a hole in the web of the foot while the chick is still small, or by clipping off a toe when they are removed from the nest or incubator. In carrying out the latter method the toe nail is cut off where it joins the toe, the shears being held in a slanting direction so as to remove the cartilage or root of the nail. If the toe nail is properly clipped off it marks the chick for life, and then the farmer when culling over his flock just before they begin to moult in the fall, can select the oldest and leave the young and profitable ones.

Feed Better.

"Another thing that the West Virginia farmer should do is to feed his fowls more intelligently. On the average farm, corn is the stand-by. On many farms corn is practically the only material that is used. That is entirely wrong. For the purpose of producing eggs, quite a large amount of nitrogenous material is required. The egg itself is a highly nitrogenous body, the white being almost pure albumen. Corn is too carbonaceous. It contains too much starch and oil. There is not enough protein present in it. Corn should be used as the foundation of the ration, but it should not be used to excess. Balance the ration with some nitrogenous feeding stuff. If skim milk can be had, there is nothing better. Let it sour, and either use it to moisten the ground feed or place it in pans and let the fowls help themselves. If skim milk is not available, it will pay to buy beef scrap. This consists of the odds and ends at the packing house. These are boiled and pressed so as to remove the excess of grease, then dried and ground. The scrap can be bought for about $3 per hundred pounds. The fowls can either be allowed free access to it or it can be mixed in the ground feed using about 10 per cent by weight.

Build Better Poultry Houses.

"Not only should the farmers of West Virginia keep more and younger fowls and feed more intelligently; better houses should be provided. In this State it is not necessary to build expensive houses to keep out the cold, but the houses should be light, airy and dry in all kinds of weather, and the fowls should be free from draughts when on the perches at night. The houses should be kept clean and free from lice and mites. It is impossible to keep poultry profitably where lice and mites abound.

Keep Pure Bred Stock.

"For best results, too, pure bred stock should be kept. The eggs from a mixed flock of fowls are of various colors and shapes, and the market fowls lack uniformity. Eggs to sell for the highest price in the big markets should be fresh, clean, and of uniform color and size. Only eggs from pure bred stock can possibly meet these requirements. The same principle is

CONSIDER NOW

what it will cost and how much money you will save on your next season's fertilizer bill if you should buy your

Nitrate of Soda

and other Farm Chemicals and mix them yourself

Your own brand MIXED AT HOME will be better than any patent brand and is sure to have in it just what you want.

Book of formulas and full instructions for Home Mixing will be sent

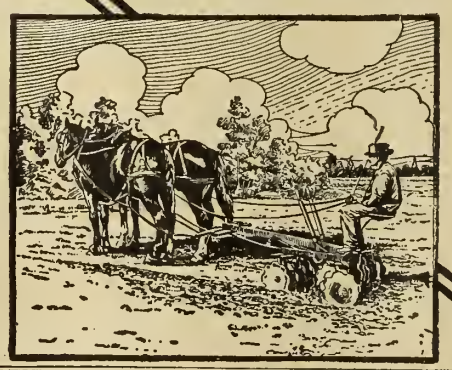
FREE OF COST

If you will send your name and address on Post Card

Dr. WILLIAM S. MYERS, Director of Chilean Propaganda
17 Madison Avenue, New York *NO BRANCH OFFICES*

ARE YOUR CROP YIELDS SATISFACTORY?

They are certainly not what they would be if you used Clark's Double Action "Cutaway" Harrow. It requires thorough cultivation to make the soil fertility available for your crops. "Thorough Cultivation," and "Clark's Double Action 'Cutaway' Harrow" are synonymous. The entire machine is made of steel and iron, except the pole, which is jointed so that there is no weight upon the horses' necks, and can be removed in one minute and used as a tongueless, as shown in cut. This is a big feature in moving from field to field, insuring safety to horses. The disks are of cutlery steel, shaped and *forged* in our own shops, where the only genuine "Cutaway" disks are made. The **Double "Cutaway"** does twice as much as an ordinary disk harrow and **better** at the **same cost.** The inflexible frame holds the gangs rigidly in their places, and compels them to cut high, hard ridges, carrying the soil into the hollows and leaving the ground level. With the flexible or tandem harrows the gangs conform to the surface and do not cut and level the hard, irregular places. Clark's stir every inch, leaving a finely pulverized seed bed. By setting the inner gangs straight on sharp turns, the Disk turns easily, leaving the ground even. No interlocking of gangs.



Modern farmers disk before they plow their land. It puts fine soil in the bottom of the furrow, where otherwise would lie loose clods that make a strata through which the suh-moisture can not rise. For this no other disk equals Clark's.

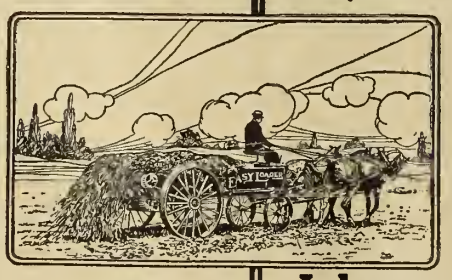
What Prof. Bailey Says:

"The Double Action 'Cutaway' Harrow has been satisfactory. I use it almost continuously on our hard clay land with good results."

If your dealer can't supply the genuine "Cutaway," write us. Satisfaction guaranteed. Twenty-five years' experience back of every sale. Prompt Shipments. Get our booklet "Intensive Cultivation." It's free. We make a special tool for every crop.

CUTAWAY HARROW CO.
968 Main St., Higganum, Conn.

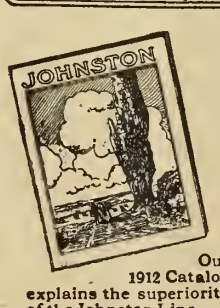
"Good manure and a good spreader will positively increase your crops."



Money in Manure

Every farmer realizes to a degree the value of his barn yard manure, but frequently one overlooks how he can greatly increase its value. Thorough spreading means increased yields — greater profits.

The "Easy Loader" is the perfection of Spreader construction. With its side sills of channel steel and cross sills of heavy oak, and every bolt, rod and plank of corresponding strength and quality, the "Easy Loader" easily ranks first among spreaders. Its ability to empty clean attracts wide attention among users of ordinary makes. No complicated parts to freeze or get out of order —just "Johnston Quality" throughout



Our 1912 Catalog explains the superiority of the Johnston Line.

Johnston Farm Machines

Include Grain Binders, Reapers, Rakes, Spring and Spike Tooth Harrows, Side-Delivery Rakes, Mowers, Tedders, Hay Loaders, Corn Binders, Disc and Orchard Harrows and Land Rollers

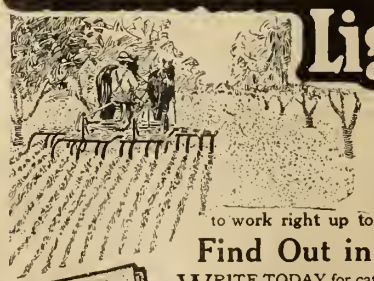
This name — JOHNSTON — has stood for QUALITY throughout the entire development of modern implements. It carries with it a guarantee of strength, endurance, capacity, simplicity, service—all summed up in the one word—Efficiency.

NOT IN THE TRUST

Write a postal today for our 1912 catalogue—free. It gives much interesting information. A copy is waiting for you.

JOHNSTON HARVESTER CO., Box 120 D Batavia, N. Y.

Find Out About the Forkner Light-Draft Harrow!



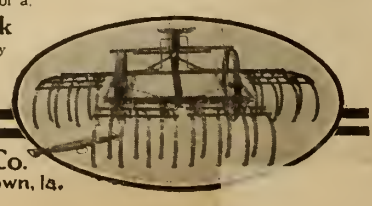
THIS low-priced harrow for orchards and vineyards —and general use—is a world-beater. Wonderfully light of draft — weight carried on wheels, not on horses' necks. Great worker—20 to 30 acres a day with one team—and every inch of soil cultivated thoroughly —lifted and turned in long wavy level. Best of all— it hangs low and has great extension—making it a snap to work right up to trees without horse or driver disturbing boughs or fruit.

Find Out in Your Orchard—At Our Risk!

WRITE TODAY for catalog and 30 day trial offer. Pick the machine suited to your soil and orchard and use it for a month—and send it back if you don't find it the finest cultivator made.

Send for This Free Book

"Modern Orchard Tillage"—written by highly successful orchardist—contains information that may be worth hundreds of dollars to you. Sent for the asking.



Light Draft Harrow Co.
907 E. Nevada St. Marshalltown, Ia.

true in the case of market poultry. In the same way that a well-bred steer is a more economical producer of beef than a scrub, so is a well-bred fowl of the meat breeds a more economical producer of poultry flesh than a mongrel.

The Production and Sale of Market Eggs.

"To start at the beginning, the hens should be provided with clean nests. A dirty egg is not only offensive in appearance, but as an egg shell is porous, the germs present in the filth gain access to the interior and the egg rots quickly. Keep the eggs clean.

"The temperature at which an egg is kept influences the rate of decay. At summer temperature germs develop rapidly in egg substance, while at a low temperature the growth is very slow. In cold storage houses the temperature of the eggs is kept as close to the freezing point of the eggs as possible, so as to restrict germ development. Keep the eggs cold.

"A fertile egg begins to develop into a chick even before it is laid, and this growth continues unless the egg is cooled below 68 degrees F. At 68 degrees F. the growth of the germ is barely perceptible, the germ soon dies and the egg rots, while at 103 degrees the growth of the chick is rapid. Hens lay as well when there is no cock kept with them. Hence sell all surplus cocks immediately after the breeding season. Produce infertile eggs.

"An egg is never more valuable for eating purposes than the day it is laid. As time passes it gradually deteriorates until finally it becomes rotten and worthless. Statistics collected by the Department of Agriculture indicate that of the marketed eggs in the United States 7.8 per cent are rotten and a total loss, and a much larger percentage stale and comparatively worthless. This loss is due largely to the time elapsing before the egg is delivered to the consumer. Deliver the eggs to the consumer promptly.

Co-operative Marketing of Eggs.

"Some of the advantages of the farm flock have been pointed out. What are the disadvantages as compared with the large poultry plant? It would seem that the principal disadvantage in the production of eggs or market poultry on the farm is in respect to marketing the products. A farmer with a few fowls cannot gain and cannot retain a first-class market for his eggs. Take for example a club or hotel. They require fresh eggs in October, November and December, just the same as they do in April, May and June. The farm flock is usually on a vacation in the fall and early winter unless early pullets are on hand to take up the work of egg production. Usually, too, the farmer does not produce eggs enough so as to get in touch with a first-class line of trade. This matter of marketing, however, could be easily remedied. Let the farmers in one community get together and appoint one of their number a selling agent, whose duty is to grade, candle, pack and sell the eggs produced by the members of the little co-operative association. Let the eggs be brought together at least three times per week in the warm season, and at least once per week during winter. With this arrangement the eggs from five, six, or a dozen farmers can be sold to just as good advantage as the eggs of a poultryman who makes egg-production his specialty. In those sections where cheese factories or creameries are in operation the cheese-maker or butter-maker frequently acts as the selling agent and the system possesses such merit that it is being rapidly and widely adopted.

Egg Production.

"For the average West Virginia farmer egg production is the most profitable branch of the poultry industry. A flock of hens kept upon a farm in a fairly intelligent manner should average to lay at least ten dozen eggs per hen per year. These are worth at least 20 cents per dozen or $2. The chief expense in keeping fowls is for the feed. This seldom, if ever, should cost more than $1 per hen per year, and if the farmer produces the feed it should cost considerable less. There remains then in excess of the cost for feed $1 per hen per year, which is practically clear profit. What other branch of agriculture can a West Virginia farmer engage in that will yield approximately 100 per cent per year on the money invested? There are certain things, however, that must be kept in mind and practiced before a profit of $1 or more per hen per year can be obtained.

Good Layers.

"The advice is generally given to select an egg breed for egg production, but on the average farm this advice cannot be carried out very well, as the principal egg breeds, Leghorns and Minorcas, are poor mothers and can scarcely be kept to good advantage unless incubators and brooders are employed in raising the chickens. Consequently a majority of farmers are forced to keep a general purpose breed. Of these the Barred Plymouth Rock, the Wyandottes, the Rhode Island Reds and the Orpingtons are all deservedly popular.

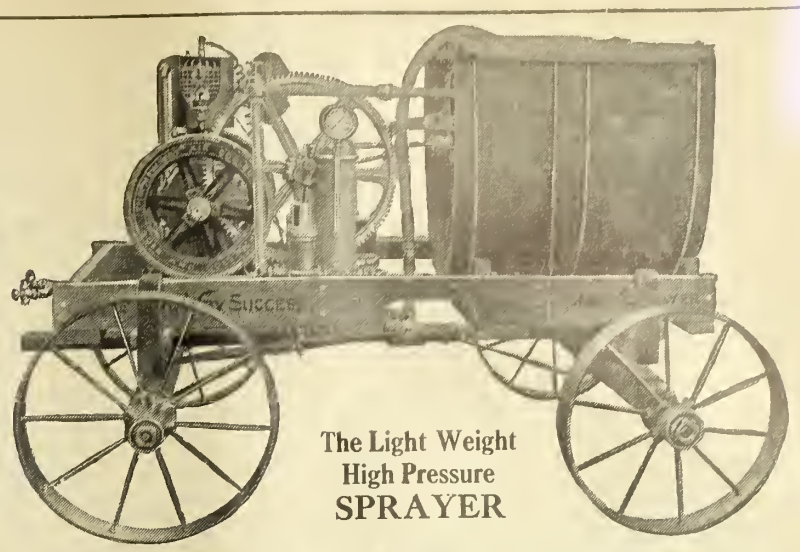
"Far too many flocks of mixed fowls or mongrels are kept. These are less profitable than the pure breeds on account of the greater uniformity of the eggs and market poultry produced by the pure bred fowls. Eggs uniform in color and size are worth 2 or 3 cents more per dozen in the big markets than the white and brown eggs mixed indiscriminately together. This premium paid for uniformity is in itself a good profit. The same principle holds true when market poultry is disposed of in any considerable quantity. Then, too, a farmer with a good flock of pure bred fowls can almost always sell some eggs for hatching at a considerable increase over the ordinary market price for eggs for eating purposes, and in the fall many of the surplus cockerels can be sold to good advantage for breeders.

Poultry Buildings.

"The hen that lays is the hen that pays, and a hen lays best when provided with a suitable house properly located. What is a good type of laying house for the West Virginia farmer? In my judgement the open front house in some form or other and modified to meet individual requirements and conditions is most likely to meet the conditions of cheapness, durability and efficiency.

"The open front house is characterized by having one end entirely open, or covered with wire netting so as to keep out stray animals. As usually constructed this house is 24 feet deep and 16 feet wide, and is 5 feet high in front and 6 feet in the rear. The roof is of unequal span, the peak being located two-thirds of the distance from the front to the rear, and having an elevation above the floor of 10½ feet.

"The perches are on a level with the front opening. In winter when the fowls have gone to roost the warm air resulting from their presence tends to collect in the upper portion of the house maintaining a comfortable temperature even in severe weather. Last winter with its zero temperatures



$1000 CARLOAD PRIZE

630 Boxes Apples at National Apple Show were sprayed with

THE "NEW-WAY" Gear Driven High Pressure Power Sprayer

YOU CAN DO AS WELL AS THIS

Wright & Co. Orchard, Watson, Illinois.

We have given our "NEW WAY" gear driven power sprayer a thorough trial this year. We carry four lines of hose up to 200 pounds pressure continuously, and spray 200 gallons of solution in 30 minutes.

I give you below the figures regarding our fruit crop:

APPLE CROP		PEAR CROP	
Acreage	180	Acreage	8
Yield in bbls.	5500	Yield in bbls.	500
Value	$22,000.00	Value	$2,000.00

I have 80 acres of Ben Davis, rest are York Imperials and Jonathans. I have shipped 15 carloads and have 3 carloads to go yet. My fruit is in the best possible condition, not a bit wormy, and I have the best orchard in Illinois.

Yours very truly, JOHN W. WALLS, Superintendent.

THE "NEW-WAY" SPRAYER MAKES IT POSSIBLE. YOU CAN DO IT TOO

Write for Sprayer Catalog No. 1S

THE "NEW-WAY" MOTOR COMPANY LANSING, MICHIGAN, U.S.A. 25 ASH STREET

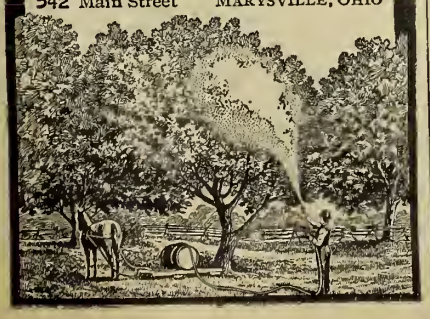
STANDARD Spray Pump $4.00

SPRAYS the tallest fruit tree from the ground. Does the work in half the time. Sprays whitewash and cattle "dip." Used with bucket, barrel or knapsack. Always ready. Made of brass. Nothing to wear out or make trouble.

Warranted for Five Years

Write for special offer or send $4.00. Expressage prepaid. Money refunded if not satisfactory.

The Standard Stamping Co.
542 Main Street MARYSVILLE, OHIO

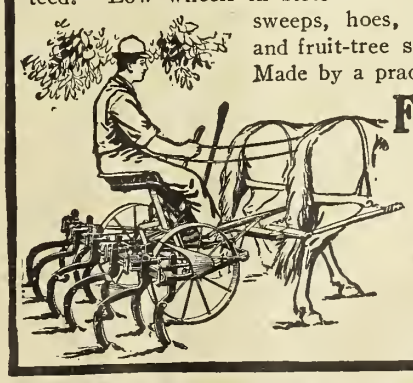


More fruit—Less work

The Planet Jr No 41 Orchard and Universal Cultivator in orchard, vineyard and hopyard has proved itself *by actual use* the greatest implement ever invented for the purpose.

Planet Jr No. 41

is in constant use by thousands of fruit growers throughout the world. Biggest time, labor, money saver—strong, easily operated; fully guaranteed. Low wheels in steel frame: steel tongue. Carries teeth, discs, sweeps, hoes, furrowers, plows, etc. Side hitch and fruit-tree shield. Cuts from 4 to 6½ feet wide. Made by a practical farmer and manufacturer.



FREE! A 64-page illustrated orchard and farm book!

It gives a fund of valuable orchard, farm, and garden information and shows 55 tools, including a variety of one and two-horse cultivators.

Send postal for it today!

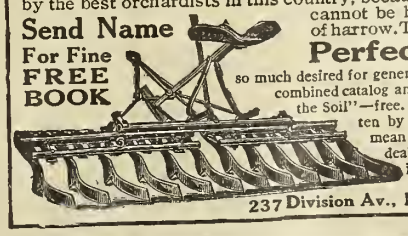
S L Allen & Co

Box 1107C Philadelphia Pa

This Low Priced, Light Draft, Riding Harrow, Keeps Down Weeds In Orchards

The "Acme" is an orchard tool because it is a perfect weed exterminator and surface mulcher, and there are no lumps or air spaces left beneath or on the surface after it is used. It will prepare the soil so that it will conserve all the moisture to benefit the growing trees or vines. The No. 25 Special Orchard Tool has been endorsed by the best orchardists in this country, because it has features that cannot be had on any other style of harrow. The Acme produces the Perfect Seed Bed so much desired for general crops. Let us send you our combined catalog and booklet, "Preparation of the Soil"—free. This booklet has been written by practical farmers and will mean a bigger profit. Ask your dealer about the "Acme." It is an all right tool.

Send Name For Fine FREE BOOK



ACME
Cuts, Turns, Crushes Levels and Smoothes In One Operation

Duane H. Nash, Inc.,
237 Division Av., Millington, New Jersey

MIDWEST RASPBERRY BEST BY TEST

Greatest Black Raspberry of the Age

ILLUSTRATED CATALOG FREE ON REQUEST

PERU NURSERY, Box 404, Peru, Neb.

the combs of S. C. White Leghorn hens were not frozen even when the front of the house remained constantly open. In poultry houses having a shed roof the warm air constantly flows away from the fowls, when they are on the perches, thus making the shed roof type of house somewhat colder for the fowls at night.

"In order to keep the house cool during the warm season two doors are provided in the rear wall of each section of the building, opening underneath the nest boxes. When these doors are open, as in summer, the wind has unobstructed passage through the house and the fowls when on the perches remain comfortable even on very sultry nights.

"This house has been in use two years and seems to be well adapted to West Virginia conditions. It should face the south or southeast, and if a windbreak is provided opposite the open side so much the better.

"One of the advantages of this house is that the fowls have always plenty of fresh air and consequently remain healthier than where they are compelled to breathe impure air too often found in poultry houses. The free circulation of air, too, prevents any condensation of moisture on the walls of the building during frosty weather, and the litter on the floor constantly remains crisp and dry. Fowls remain healthier in a cold dry house than in a warm damp one.

Feeding for Egg Production.

"It should be understood at the outset that the food that laying hens receive is only one of the factors which may affect the production of eggs. We all know that fowls, in order to lay well, should be of the right age, neither too old nor yet too young; they should be kept neither too cold nor yet too hot; and that they should be healthy and free from lice and mites or other external or internal parasites. We know that some breeds lay better than others, and that some individuals and strains lay better than certain other individuals and strains of the same breed. We know that overcrowding, overfeeding on certain foods, too scanty feeding, lack of exercise, and unsanitary quarters have a tendency to decrease the egg production. We know that when fowls are frightened or frequently disturbed or placed amidst strange or unusual surroundings that the egg production is materially restricted; also that a lack of constitutional vigor tends to prevent a heaping up of the egg basket.

"Sometimes it would seem that, relatively, too much attention is given to the subject of feeding and too little to the other factors which may have as great or even a greater effect upon the egg yield, but it must be admitted that the food that fowls receive is usually under definite control, while some of the other factors are matters of heredity, environment or the weather, which can be controlled only indirectly or not at all.

"Egg production depends upon the activity of the ovaries, and this activity in turn, at least to a large extent, depends upon the physical vigor of the individual. Heavy egg production, then, is principally a problem of how to maintain laying hens in a high state of health, and the question before us today is how to feed in order to accomplish this purpose, but it should not be forgotten that constitutional vigor is as much a matter of fresh air, exercise and inherited stamina as it is a matter of food.

"A hen requires food in order to furnish energy to carry on the various activities of the body and to keep the body warm; to build up the tissues and organs and keep them in repair and to supply material from which eggs can be elaborated.

"In feeding laying hens, then, there are three classes of nutrients which we must keep in mind in order that the fowl may be nourished properly: protein to build up and keep in repair the various organs and muscular system of the fowl and furnish material for the formation particularly, of the white of the egg; carbohydrates and fat to furnish heat and energy and to supply a considerable amount of fat which enters into the composition of the yolk of the egg, and finally ash constituents for the formation of the bones, egg shells, and to enter more or less into the structure of all the various organs and tissues of the body. Nor should we neglect to mention water as more than one-half of the weight of the fowl, or an egg, consists of this material.

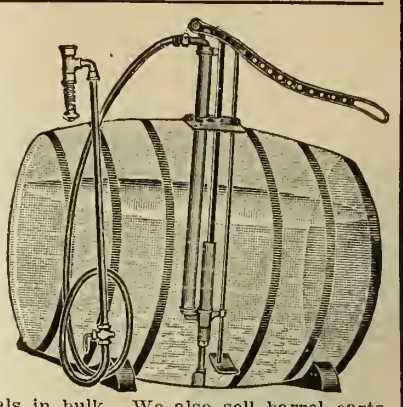
Composition of Fowl and Egg.

"In this connection it is of interest to examine into the relative proportion in which nitrogenous and carbonaceous matter enter into the composition of the body of a fowl, and into the composition of an egg, for a knowledge of this proportion gives us an insight into the reason why certain grains or by-products give poor results when fed alone or in certain combinations, but which give good results when mixed together or fed in certain other combinations. Now, according to analysis, the body of a hen contains, in round numbers, 55 per cent water, 3.8 per cent ash constituents, 21 per cent protein and 17 per cent fat, and a fresh egg contains 65 per cent water, 12 per cent ash, 11 per cent protein and 9 per cent fat. If we now multiply the percentage of fat in both instances by two and one-fourth so as to reduce the fat to the same thermal equivalent as a carbohydrate, and then divide the products thus obtained by the respective percentages of protein in the body of a hen and in an egg, we find, speaking generally, and in round numbers, that there is one part of protein to two parts of carbohydrates expressed as though present in the form of a carbohydrate, or in other words, the nutritive ratio of the body of a hen and of an egg is as 1 to 2.

"If we now examine the composition of one of the grains commonly used in feeding poultry, namely corn, we find that instead of one part of protein to two parts of carbonaceous material, as in a fowl or in an egg, there is only one part of protein to ten parts of carbohydrates. Now, inasmuch as protein and carbonaceous materials enter into the composition of an egg in quite definite proportions it can be seen readily if a laying hen were fed wholly on corn there would be relatively too much carbonaceous material as compared with the protein, for the building up of the egg, this excess being about eight parts of carbonaceous materials for every part of protein changed into egg substance. It is true that some of this carbonaceous material would be used to keep the fowl warm and to furnish muscular energy, but there would be too much even for this purpose except during extremely cold weather, and this excess accumulating would in time make the fowl too fat, with a consequent loss of vigor. The outcome, then, would be,

Our Sprayers Will Satisfy You *and* Save You Money

Therefore we have no fear to quote prices. We will sell you this sprayer outfit, consisting of pump, hose and couplings, stop-cock extension rod and vermorel nozzle for **$8.25**



If you are in the market for a sprayer of any kind, you should write us for description and prices. We can supply you with sprayers for household use at 29c; whitewash sprayers at $1.50; air pump sprayers at $1.70; compressed air sprayers at $3.35; barrel sprayers at $5.85 and up; or our big, high-pressure, power-sprayer, driven by gasoline engine at $224.50. The spray pump, here shown, is in use by hundreds of orchard men and farmers. It cannot clog, and is the best sprayer of its kind used. Write us for complete information about this sprayer, "How to Spray, When to Spray, What to Spray," with prices of chemicals in bulk. We also sell barrel carts and oil heaters at wholesale prices. Get our list Free, and save money. All sprayers shipped direct from Kansas City. Satisfaction or money back.

Jones, Post & Co., 1088 Liberty Street, Kansas City, Mo.

The Bidwell Automatic Sprayer

combines efficiency with economy of labor and materials. Strong, high-grade, brass and copper, portable, with pressure gauge. **Same pump for both air and liquid.** One pumping discharges entire contents. Produces a finer spray and uses less materials, and is equipped with our

Winkle Mist Nozzle

the celebrated power sprayer nozzle which distributes the spray more evenly than any other nozzle on the market—and cannot clog. Try Winkle Mist Nozzles on your power sprayer.

Write for free catalog and booklet on spraying.

Agents Wanted **Tyler Manufacturing Co. 74 Cortland St., Rochester, N. Y.** Sample 75¢

Elkhart Vehicles and Harness

have a world-wide reputation for high quality and our prices have made them famous.

THIRTY-NINE YEARS'

experience selling to the consumer means success.

We ship for examination, **guaranteeing** safe delivery, satisfaction and to save you money.

Catalog shows all styles of pleasure vehicles and harness, pony vehicles and harness, spring wagons, delivery wagons and harness.

May we send you large catalog?

We also make the "Pratt-Forty" Automobile.

Elkhart Carriage & Harness Mfg. Company
Elkhart, Indiana

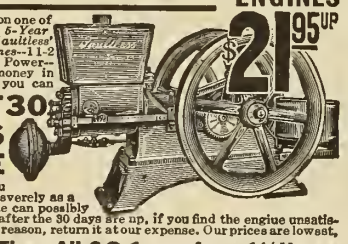
Save $25

FIVE-YEAR GUARANTEED GASOLINE ENGINES

We will send you one of our high-grade *5-Year Guaranteed 'Faultless' Gasoline Engines*—1 1-2 to 12 Horse Power—without any money in advance, and you can

USE IT 30 DAYS FREE

at our risk. You can test it as severely as a Gasoline Engine can possibly be tested, and after the 30 days are up, if you find the engine unsatisfactory for any reason, return it at our expense. Our prices are lowest.



We Beat Them All Think of It, only $21.95 for a 1½ Horse Power Engine

Correspondingly low prices for 2 1-2, 4 1-2, 6, 8 and 12 horse power engines. Anyone can run them. Simply constructed. No complicated parts. Operate as perfectly, wear as long and develop as much power as any engines made, regardless of name, make or price. Possess every good feature of every high grade engine and many features controlled alone by us. To illustrate: Four-cycle; water jacketed; hopper cooled; make and break ignition, speed control lever; governor controls fuel supply; uses fuel according to load; simple, positive mixing device. If interested write and say: "*Send me your big, free Gasoline Engine Catalogue*," and see for yourself all about our wonderful 30-day free trial without any money in advance offer, our **5-Year Guarantee** The big, fine pictures of great iron-clad all our Gasoline Engines and our marvelously low prices. Write today.

Farm Implements

For All Purposes For All Sections

Latest Improved Standard Makes. Fully Guaranteed. Sent on Free Trial. Half your dealer's price. Walking plows, $2.00 up; Sulky plows, $24.50 up; Disc Harrows, $13.00 up; Cultivators, $2.60 up; Grain Drills, $10.35 up; Corn planters, $8.10 up; Mowers, $33.00 up; Feed cutters, $2.25 up; Feed grinders, $8.70 up, and every other kind of farm implement at proportionately low prices. If interested, write and say: "*Send me your big, Free Farm Implement Catalogue*," and see our wonderful low prices and great liberal free trial offer.

JOHN M. SMYTH MOSE CO. 150-243W. Madison St. Chicago

Pull Stumps! Make Money!

Get this Milne Unbreakable All-Steel Combination Stump Puller. Self or Stump Anchored. Pulls stumps, green trees and hedges *quick, easy.* Raise *crops* next year on land now full of *stumps* Pull *trees* faster than able to *cut* them. Pull 1 to 5 acres without moving Milne Double, Triple and Quadruple attachment. Also Rotary Power Attachment for sawing, grinding, washing, etc.

MILNE Combination All Steel Stump Puller

MILNE MFG. CO. 788 Ninth St., Monmouth, Ill.

Postal brings Catalog

CIDER PRESSES

THE ORIGINAL MT. GILEAD HYDRAULIC PRESS produces more cider from less apples than any other and is a

BIG MONEY MAKER

Sizes 10 to 400 barrels daily, hand or power. Presses for all purposes, also cider evaporators, apple-butter cookers, vinegar generators, etc. Catalog free. We are manufacturers, not jobbers.

HYDRAULIC PRESS MFG. CO.,
(Oldest and largest manufacturers of cider presses in the world.)
51 Lincoln Avenue, Mount Gilead, Ohio

Split Hickory Vehicle 1912 Big FREE BOOK is Ready

Write a postal—Phelps pays the postage to you.

H. C. Phelps Pres.

Phelps

2 Year Guarantee

—Shows You the Biggest Selection of Buggies in America —Saves You Big Money

PHELPS' shows you more styles this year in his big book than ever before. And every buggy price saves you big money—has sold 150,000 farmers. Let him show you in photographs how a good buggy should be made—and what made of. Phelps knows. They're all highest grade—over 125 styles—every kind—auto seat Buggies, Surreys, Runabouts, etc.,—all sold direct to user on 30 Days' Free Road Test—2 Years Guarantee. Don't you want the book? A Postal gets it. H. C. Phelps, Prest.

Split Hickory Vehicles On 30 Days FREE Road Test

THE OHIO CARRIAGE MFG. COMPANY Station 46, Columbus, O.
Largest Factory in the World Selling Vehicles Direct.

Harvey Bolster Springs

Get more money for your vegetables, fruit, eggs, milk and live stock by delivering them in first class condition.

HARVEY BOLSTER SPRINGS make your wagon a spring wagon—make it last longer and prevent damage to produce in hauling to market. They are the *Standard Springs of America* and are sold under our positive guarantee to give satisfaction. Ask for special proposition.

HARVEY SPRING CO., 736 17th St., Racine, Wis.

GUARANTEED

Spray Trees Now

While You've Time To Do a Thorough Job. Don't Put Off 'Till Busy Spring. Use

Target Brand Scale Destroyer

A miscible oil that destroys San Jose Scale and all other scales. It spreads on contact with the tree, thus covering every part, even those missed by the direct spray.

Endorsed by every experiment station where tested. Sold by good dealers everywhere. Send for interesting booklets.

HORTICULTURAL CHEMICAL COMPANY
135 South Fourth Street. Philadelphia.

In writing advertisers please n

when feeding nothing but whole corn, that few eggs would be laid, because only a small amount of protein would be available for the formation of the eggs, and the excess of fatty matters would tend to clog the system, with a consequent reduction in the vigor of the fowl. It may be observed here properly that a hen must be moderately fat in order to lay. A ration consisting simply of corn would be deficient, too, in mineral matter or ash, for the formation of the egg shell and for other purposes.

"In order that the nutritive materials of the food can be used economically for the various purposes of the animal body it is customary to mix the feeding stuffs together in such a way that there is a just proportion or balance between the various nutrients. A ration thus compounded is said to be balanced, while a ration which contains a relatively large amount of carbonaceous materials is called a wide ration, and one which contains a relatively large amount of protein is called a narrow ration. The nutritive ratio of a ration is the proportion of digestible protein to digestible carbonaceous materials, and is found by multiplying the amount of fat by two and one-fourth, adding the product to the digestible carbohydrates and dividing the sum by the amount of digestible protein.

"As compared with the combination of an egg, most of the grains commonly employed as poultry foods are too low in protein and ash, and care should be taken to supply these deficiencies by the use of beef scrap, ground fresh meat and bone or other materials of somewhat similar composition. Feeding stuffs which are rich in protein usually cost more than those rich in carbohydrates and fat, and if there is a lack of the latter constituents some of the protein may be used to furnish heat and energy, instead of carbohydrates. This would be expensive, to say nothing about the effect upon the health of the fowls of feeding a ration that is too narrow. There should be a just balance or proportion between these classes of compounds for best results, but our knowledge of the feeding of poultry is not thorough enough so that definite and exact advice can be given as to the relative proportion in which these classes of nutrients should be present for best results.

Importance of Ash Constituents.

"In feeding for egg production it is necessary not only to have the proportion of protein to carbohydrates approximately correct, but it is also essential to have the ash constituents of the ration sufficient in amount. There is nearly eight times as much ash in the dry substance of an egg as there is in corn or wheat, and this deficiency must be made good in some way. Wheat bran, oil meal, beef scrap and clover or alfalfa hay are all high in ash and can be used with profit in a ration for laying hens, and in most cases these feeding stuffs high in ash should be supplemented by the use of cracked oyster shells, limestone grit or granulated bone fed ad libitum.

Animal Versus Vegetable Protein.

"Most of the earlier experiments performed to study the relative value of protein from animal and vegetable sources seemed to show that the protein of animal origin is more valuable than vegetable protein for growth and egg production, but it has been found that the apparent superiority of animal protein is due largely, if not entirely, to the fact that it is usually associated with a larger percentage of ash in the ration. As soon as the difference in ash content is overcome then protein from the two sources seems to have practically the same value. Professor Wheeler, of the Geneva Station, in speaking of his investigation says: "The experiments all point in one direction: toward the superiority of rations containing animal food over those made up of grain. In no case has the reverse of this proven true, and in nearly all the trials the difference has been most noticeable. When the lack of mineral matter in all grain ration, as compared with one containing animal meal, is supplied by bone ash, the difference disappears or favors the grain ration, so far as chicks and laying hens are concerned. That is, it is the small amount of ash in the grain ration which makes this ration inferior to one containing animal meal, rather than a difference in the protein. Something to supplement the ash-poor grains they must have, and it is simpler to give it in the natural form, combined with valuable protein and fats, than to burn out the organic matter and give the ash only."

"Whatever may be the explanation, then, the fact remains that beef scrap, meat meal, ground meat and bone, or similar products of animal origin are practically indispensable. Sour skim milk, too, is a very valuable addition to a ration for laying hens whenever it is available.

The Importance of Green Food.

"In some experiments carried on at the West Virginia Station several years ago it was found that a liberal, as compared with a scanty supply of green food, increased the egg production by two dozen eggs per hen per year. For use in winter mangels or large stock beets are one of the most popular of green food materials, on account of their feeding value, and ease with which they may be grown. Cabbage is sometimes used, and clover or alfalfa hay are excellent substitutes. The hay may be cut into short lengths, steamed and fed in the mash, or the material may be fed in the dry state, as the hens quickly learn to pick off the leaves, heads and more tender portions. Because hens readily eat the leaves and heads of clover and alfalfa hay is not a good reason for assuming, however, that foods rich in fibre are especially valuable for poultry. On the contrary, experiments indicate that of two rations otherwise equal the one lower in fibre is the better. In fact oats, barley, and buckwheat, all of which are relatively rich in fibre, usually occupy a secondary place in poultry feeding.

Dry Mash as Compared With Moistened Mash.

"The dry mash system of feeding consists, as it is well known, of keeping a mixture of dry ground grain in feed hoppers so as to be accessible to the fowls. The whole grain that is fed is usually scattered in the litter, so as to induce the fowls to take a certain amount of exercise. At the Maine Station, where this system of feeding has been carried out with success for several years, the practice is to scatter four quarts of corn per hundred fowls in the litter early in the morning; at 10 o'clock they are fed in the same way two quarts of wheat and two quarts of oats. This is all the regular feeding that is done. The dry meal mixture that is constantly available to the fowls is composed of 200 pounds wheat bran and 100 pounds each of cornmeal, middlings, gluten meal, or brewers' grains, linseed meal and beef scrap.

"Experimental evidence is lacking to enable one to say whether this system of feeding hens is as good or better than the old system of feeding a moistened mash. That the old system of feeding, although it takes more time and requires somewhat more judgment on the part of the feeder, is a very satisfactory method to follow cannot be questioned.

"I have before me the report of the egg-laying competion of 1907-8, held at the Agricultural College, Roseworthy, South Australia. In this competition seventy-five pens of fowls were entered. Each pen consisted of six females and one male. They were fed as follows: At 7 a. m. they received a mash of bran and pollard (middlings), one and one-half parts of pollard to one part of bran, mixed during the cold weather with soup to which cut vegetables and green stuff was added, together with a handful of salt. The mixture was fed hot, and in a crumbly condition. The quantity fed to each pen varied according to the appetite of the occupants. At noon green food was supplied during the cold weather, but when the warm weather set in this was withheld, as

Don't overlook the importance of the insecticide you use. If your selection is right, your spraying will get results—it will pay. Start right. Select a brand you can depend upon—one that quickly kills chewing insects, such as the curculio, moths, borers, beetles, root-worms, canker worms, potato bugs, etc.

HIGH QUALITY — SPRAYS THAT PAYS KEY BRAND — LOW COST

ARSENATE OF LEAD

is so convenient, so effective, that once you use it, you will continue. Always uniform; mixes easily; remains in suspension in solution readily; acts quickly; sticks like paint to plants; does not injure foliage or fruit. Paste Form in any amount from one pound can to 600 pound barrel; Powder Form from one pound can to 100 pound keg. Always shipped in Hard Wood or Steel Containers. Absolutely superior to any other Arsenate of Lead and costs less. Accept no substitute. Write us for circulars and prices.
Agents and wholesale distributors wanted.

Interstate Chemical Co. 17 Bayview Ave., Jersey City, N. J.

Sulphur, Nitrate of Soda
Blue Vitriol

If you make your own Lime and Sulphur Solution, write us for prices on sulphur. We carry large stock in barrels and sacks. Ours is the best and cheapest brand for making solution. Goes into solution readily and stays in solution. We also carry large stock of best Nitrate of Soda in 200-pound sacks, ready for shipment. You can save money and get prompt service by dealing with us.

Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

ANSBAHCER'S

"Triangle" Brand

Arsenate of Lead Paste

Steel Kegs keep the Paste in perfect condition for years; easily opened and closed. A perfect package for preserving the perfect quality of "TRIANGLE" BRAND; Purity, Fineness, Safety and Killing Speed. Dealers in all Districts and

A. B. Ansbacher & Company
NEW YORK CITY

Sixty Years of Producing Perfect Products

Know Your Spray SOLUTION

The Secret of Spraying Success is in the Right Solution

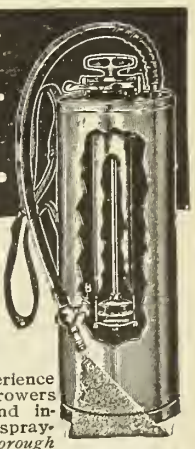
The TAYLOR "LI-SUL-SPRAYOMETER" shows you the exact gravity and strength of your Lime and Sulphur washes—the most efficient and least dangerous of all spraying solutions.

N. Y. Pattern—Two Sprayometers and Test Jar in case.....$2.00
Penna. Pattern—Sprayometer and Test Jar in case.....$1.25

If your dealer cannot supply you, write us. Send for circular of formulas and general information on Spraying. Ask about the "TYCOS" Frost Alarm and other Thermometers for Orchardists.

Taylor Instrument Companies
57 AMES ST., ROCHESTER, N. Y.

Spray Quicker and Easier



Get the Free Book That Tells How

PROFIT by the experience of 300,000 fruit growers and gardeners and increase your profits by spraying in the *new* and *thorough* way. Brown's Auto Sprayers and new patented nozzles work quicker, easier, give better results with great saving of solution. Don't use slow, wasteful sprayers. Let us send you our complete Spraying Guide, showing *improved* methods. It will prove of real money value to you.

Brown's Auto Sprays

are made in 40 styles and sizes,—endorsed by experiment stations. Sold on guarantee of satisfaction or money back.

Auto Spray No. 1, capacity 4 gallons—is most powerful, most efficient hand sprayer made. Fitted with Auto Pop Nozzle it throws any kind of fine spray or heavy stream with force enough to turn leaves and *saturate* entire tree or plant. Prevents blight and disease, destroys all bugs.

Power Sprayers for all orchard and vineyard work. Traction or engine power as desired. The most thorough, simple, economical outfit for every purpose.

Brown's Non-Clog Atomic Nozzle

for large sprayers is the greatest time and money-saving invention in years—positively will not clog—adjustable from mistlike spray to powerful stream—absolutely self cleaning. A proven money maker. Write for free book and low prices. We want you to have our tested and proved spraying guide whether you buy or not. Send postal now.

The E. C. BROWN CO.
29 Jay St., Rochester, N. Y.

4 BUGGY WHEELS FREIGHT PAID STEEL TIRES $8.75
With Rubber Tires, $18.45. Your Wheels Rerubbered, $10.30. I make wheels ¾ to 4 in. tread. Tops, $6.50, Shafts, $2.10; Repair Wheels, $5.95; Axles $2.25; Wagon Umbrella free. Buy direct. Ask for Catalog Q
SPLIT HICKORY WHEEL CO., 530 F St., Cincinnati, Ohio.

SEEDS Large package Giant Pansies and fine Illustrated Catalog FREE
SPECIAL OFFER: 10 varieties Floral Gems and 10 sorts Spencer Sweet Peas, 6c.
Burbank's
A. C. ANDERSON, Box 9, Columbus, Nebr.

it soon dried up in the heat. Chaffed alfalfa, during the hot period, was mixed with the mash in the proportion of one-third by bulk. At 4:30 p. m. grain was fed to the birds in straw litter. During the winter maize and peas were used, but the principal grain was wheat. The grain in the scratching litter provided constant exercise and occupation for the birds. No green cut bone, spices, or other forcing foods were used, and the diet was well balanced, though simple in character. During the year there were consumed 331 bushels of wheat, 537 bushels of pollard or middlings, 430 bushels of bran, 950 bushels of meat meal. The amount of corn and peas fed is not given, but the amount fed was relatively small judging from the cost of these materials.

"When fed in this way the banner pen, White Leghorns, laid during the year 1,531 eggs, or an average of 255 eggs per bird. The next highest pen, also White Leghorns, averaged 254 eggs per bird. Of the seventy-five competing pens thirty-four were White Leghorns, and it is of interest to observe, in respect to the influence of strain upon prolificacy, that, although the two foremost pens of White Leghorns led all of the other breeds by a considerable margin, yet there was a pen of White Leghorns in the sixty-eighth place with a record of only 141 eggs per fowl.

"It is very doubtful whether an average of 255 eggs per bird in a pen containing six females could have been made through the use of the hopper system of feeding. I understand that our Department of Agriculture at Washington is making a study of this matter, and it is probable that at our next meeting we may have some definite information about this important subject.

"In conclusion let me call your attention to the fact that the feeding of laying hens is a problem of a different nature than the fattening, for example, of a bunch of steers. In one case the food is digested, assimilated, and used to build up the bodily structures, and the principal things required are good feeding stuffs and a good digestive system. In the case of laying hens, however, not only must the digestive system be able to digest a large amount of relatively rich food, but the reproductive organs must be kept vigorously active, and in a most perfect condition, and this ideally perfect condition is not entirely a matter of food or methods of feeding."

Missouri Horticultural Society.

The fifty-fourth annual meeting of the Missouri State Horticultrual Society was held at Columbia, Mo.. on January 9th to 12th, under the auspices of the Missouri State Board of Horticulture. One feature presented at this meeting was an apple show that was the largest ever brought together by the Missouri Society.

All sessions were held in the lecture room of the Horticultural building of the University, and considering the arctic weather which prevailed throughout the state, together with the delayed trains, the attendance was all that could be expected. In addition to the horticultural society, Columbia, the University city, entertained at the same time all of the farmers of the state, having turned the entire agricultural college over to farmers, for the annual Farmers' Week Short Course. Over a thousand farmers attended the lectures, which covered every phase of agricultural work. In addition, a large number of ladies were present and who thoroughly enjoyed and profited by the lectures and demonstrations in cooking and home economics which were conducted by the Domestic Science Department of the University.

Among the interesting papers which were presented at the meeting of the Horticultural Society was a description of his method of "Renewing the Apple Orchard by Top-Grafting the Trees," by Mr. J. F. Riddell, Manager of the Darby Fruit Farm, of Amoret, Mo. In his description Mr. Riddell explained how top-working would enable the orchardist to change his trees of unprofitable varieties into other sorts that are better suited to the conditions. The work which was described was based entirely on his own personal experience in the large orchard of which he has the care. This paper was well received and was well worth braving the inconvenience of below-zero weather to listen to.

Judge W. R. Wilkinson, a fruit-grower and member of the Missouri State Board of Horticulture read a paper on peach growing in Missouri in which he told how a peach orchard could be managed at a profit.

Mr. John Bland, of Lebanon, Mo., told of the "Principles and Practice of Heating Orchards," basing his remarks on his experience in his own orchard. From a study of the weather records for a period of years Mr. Bland said that the danger point for fruit was 29 degrees, and that it was a waste of fuel and labor to burn the orchard heaters when the temperature ranged above that temperature. He emphasized the fact that a great many Missouri growers have been wasting their fuel at a temperature of 31 degrees. Mr. Bland also pointed out the necessity of a better thermometer for orchard heating, saying that in his experience he needed a thermometer which was graduated from 18 to 38 degrees, but with a tube sufficiently long so that there would be room for small fractions of the degrees on the scale. The average thermometer is graduated with a scale reading from near the zero mark to almost the boiling point, while in the special orchard heating thermometer, such as he is having made for his own use, the scale will read from 18 to 38 degrees, with fractional divisions of the scale indicating at least the quarters of degrees.

His orchard has been equipped with orchard heaters, not the usual kinds found on the market, but common two-gallon galvanized iron pails covered with a square piece of tin. This sort of a pot he says is very satisfactory.

Following this paper Mr. R. M. Hitt, Koshkonong, Mo., told of his experience during the past spring. He was able to save a crop of peaches from damage by a temperature of 26 degrees by means of heaters. The gross income from the crop of 955 eight-year-old trees was $4,751 and the expense of heating and caring for the orchard during the summer amounted to $814.

Mr. S. W. Moore, Galliopolis Ferry, W. Va., made some very timely and effective remarks on orcharding on rough land, emphasizing the fact that it is important to store water in the soil for the use of the trees during the dry portion of the summer. This storage of water can be effected by maintaining cultivation. This serves other purposes also. It liberates the plant food that is in the soil; develops the plants that are wanted and eliminates those which are not needed.

But clean cultivation alone will not satisfy, as it is only a part of the orchard practice. In addition to it cover crops must be grown, to be turned under the following spring. In his section cowpeas make the best crop, as they add nitrogen to the soil in addition to humus. Winter clover is also a good crop and likewise rye. But these must be plowed under in the spring before they begin to grow very tall, otherwise the benefit which they do becomes an injury.

On hill lands mulches and cover crops are highly important to prevent

"Columbian Tanks"

Quality Satisfaction

If you intend to Smudge, get Our Prices on

STORAGE AND WAGON TANKS

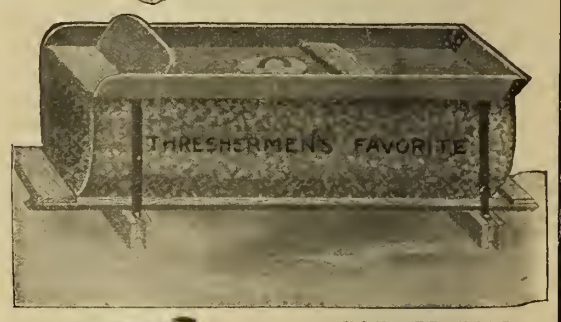
We have equipped thousands of orchards with Tanks, and know just what is required.

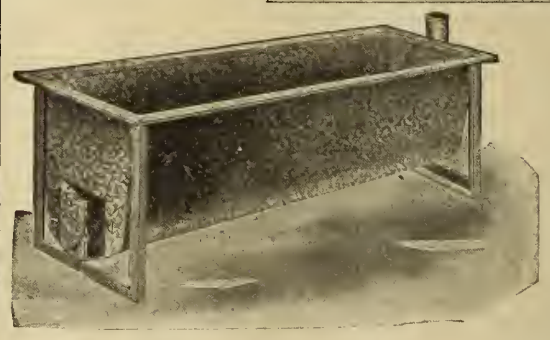
We make Storage Tanks of heavy galvanized steel; all sizes, 100 to 50,000 gallons.

Oil and Water Wagon Tanks

Made in all sizes and shapes, 5 to 20 barrels.

Equipped with 2-inch valves for drawing off the oil.





COLUMBIAN Combination Feed Cooker and Scalding Vat

Made of No. 20 gauge galvanized steel and equipped with two chain hooks on each side.

In writing for prices state size or capacity of tanks desired.

Our Free Catalogue, "TANKS FOR THE WORLD," will be mailed upon request.

COLUMBIAN STEEL TANK COMPANY
KANSAS CITY, MISSOURI

The Peerless Power Sprayer

Proven best by expert test.

In design, construction and economy of operation, the **PEERLESS SPRAYING OUTFIT** is without a peer among Power Sprayers. Equipped with our patent pressure regulator, insuring steadiness of pressure, and our New Design Rotary Agitator, insuring adequate agitation of Spraying Mixture. We also manufacture Automatic Power Sprayers and Hand-Power Sprayers, for growers who do not need a large outfit. Write for descriptive catalogue.

AMERICAN SPRAYER COMPANY
MINNEAPOLIS, MINNESOTA

RIGHT NOW

Is the Time to Send for Our Price List on

Fruit Trees

Varieties True. No Disease.

WE PAY THE FREIGHT

For Price List Address

NEW HAVEN NURSERIES
Box 125 New Haven, Mo.

the soil from washing. Where a permanent mulch must be maintained it must be clipped regularly. Red clover makes a splendid mulch crop, and is clipped just as soon as it begins to show the flowering heads. When this is done the clover will stool out and make a thick stand, almost a turf. Blue grass makes a splendid mulch but needs to be clipped frequently, and the clippings must not be removed but allowed to remain where they fall. Where a mulch is maintained a space needs to be cleaned away for three feet around the trees to keep mice from making it their winter harbor and girdling the tree.

Mr. Moore emphasized the importance of keeping borers removed from trees. He goes over his trees twice each summer and follows each search with an application of soft soap applied with a scrubbing brush. This removes the old scales of bark, softens it and seems to invigorate the trees. He said also that the Downy Woodpecker was an aid, as it would find many borers that are left, and that it paid to encourage these birds. He said further that the successful fruit grower must see his trees every day just as the successful live stock man must see his cattle.

Other lectures of interest to the fruit growers in attendance were conducted by the professors of the horticultural department as a part of the Short Course. These consisted of "Importance of Co-Operation Among Fruit Growers," by Prof. W. H. Chandler; "Selecting Varieties of Fruit to Plant," by Prof. J. C. Whitten; "Practical Demonstration in Pruning the Peach," by Prof. W. H. Chandler; "Orchard Insects," illustrated with lantern slides, by Prof. Leonard Haseman; "Mixing and Applying Spray Materials," by Prof. Chandler; "Planting the Home Grounds," by Prof. H. F. Major; "Planting Fruit Trees," by Prof. Whitten; "Planting School Grounds," by Prof. Major; "Shaping and Planting Trees and Shrubs," by Prof. Major; "Cultivation and Management of Orchard Soils," by Prof. Whitten; "Profits and Failures in the Use of Orchard Fertilizers," by Prof. Chandler, and concluded with a lecture on "Special Methods of Inducing Fruitfulness in Fruit Trees," by Prof. Whitten.

At one of the evening sessions, Governor Herbert Hadley, of Missouri and Dr. Kenyon L. Butterfield, president of the Massachusetts Agricultural College and member of the Country Life Commission were the speakers. In spite of the snowstorm and the below-zero temperature that prevailed, the University auditorium was filled. Nearly fifteen hundred visitors and students were present and listened to these very able speakers. The address of Governor Hadley, in which he spoke of the importance of Agriculture, was very warmly received. Dr. Butterfield emphasized the fact that the farmer must not only make a living for himself, but he must grow enough in addition to feed the masses who dwell in the cities. He must turn his attention to better farming. The three tests of this, Dr. Butterfield said were the full realization of the duty the farmer bears to the country, to better business methods and to better living. The work that is being done by the Grange was highly complimented and the extension of its membership was urged.

How I Grew Tomatoes This Year.

On March 2nd I planted two ounces of Livingston's Magnus, two ounces of Livingston's Buckeye State and one-half ounce of Globe tomato seed. The beds were heated by fire, and nearly all the plants were up in eight days. The plants were transplanted when four weeks old into other hotbeds and set three by three inches. Between May 5th and 11th they were thoroughly soaked with water from a sprayer tank though a hose. The plants were shoveled with a ball of earth to each into a wagon and hauled to the field and planted.

The ground had a growth of rye plowed under and allowed to rot for a few days, then well harrowed and laid off both ways with a two-horse plow, four by five feet. A handful of commercial fertilizer was put in each hill; the plants were placed on it and hilled with a hoe. As soon as the plants were set the cultivators were run through both ways. This started a growth and helped to keep the plants from wilting. While the plants were still small enough for a wagon to pass over them, stakes were hauled and scattered through the field, by driving astride every fifth row. Men followed with axes and sledge hammers and drove one stake on the south side of each plant.

I always drive stakes on the south side of the plants, as by so doing the stake shades the plant during the hottest portion of the day, and protects it from being injured by the intense heat. As soon as the stakes are set it is necessary to go over the field again, as so much tramping around by the mules and men packs the soil.

When the plants have grown to be 14 to 16 inches high they are tied up. This is done by passing a string around the plant just below the last leaf stem, which gives it a good strong hold. The string is then drawn up to the stake at an angle of about forty-five degrees and knotted on both sides of the stake. This kind of tying is necessary to keep the string and plant from slipping down. But before tying the plant, all lateral branches are removed from it, leaving only one straight stem. During the past season each plant in our field was tied four times and were trimmed six times, they were cultivated twenty times and hoed twice. Then, in addition to the fertilizer that was applied in the hill when the plants were set, strips through the field were sown with nitrate of soda, potash and phosphate.

The staking of these tomato plants was very essential, as it kept the fruit off of the ground, making it cleaner, of much better quality and with much less rot in rainy weather. The trimming is of equal importance, as it makes the fruit larger and better.

I shipped about 1,000 bushels, which were sold on the Chicago market at from 60 cents to $3 per bushel. There were 300 bushels on the vines when the price dropped below the paying point. The crop was nearly all shipped to Chicago, and there consumed by the hotels and family trade, as fancy stock. After all accidents in the beds by frost, fire, cut-worms, damping-off and all other accidents, I had 7,000 plants set in the field, and of these 2,000 were killed by blight.

In setting the plants a space is left around the field for a roadway. In this a wagon is driven to gather the baskets of tomatoes as the fruit is picked. These are emptied into flat boxes, called "carriers," each holding one and one-half pecks, and which can be stacked one on top of another and hauled to the packing shed. Here they are placed on tables, assorted into two grades, "extra" and "second." They are then passed on to the packers who pack them into four-basket cases, holding about one-third of a bushel. The cases are stamped with the name of the commission man, the grower, the grade and the variety. The fruit is then ready to be hauled to the station, loaded directly from the wagon into the car and go to market. If the weather is unusually hot, refrigerator cars are used. From my crop this past summer I received $461.50 for my crop of tomatoes, and of this amount seventy-five per cent was clear profit. T. E. GOODRICH.

Illinois.

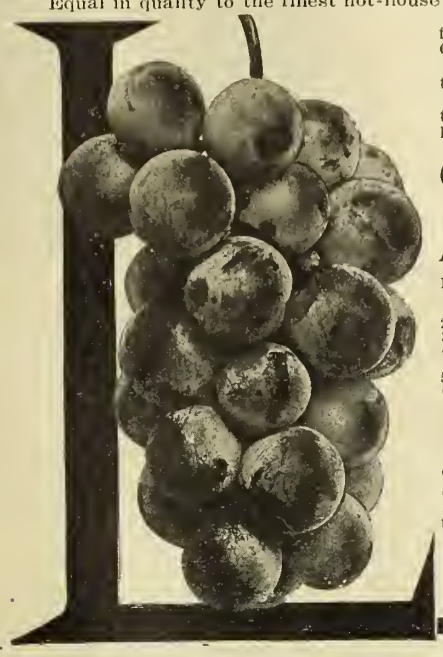
Plant the Quality Grape

CATAWBA-CONCORD

THE GRAPE FOR EVERYBODY EVERYWHERE

The Catawba-Concord is a cross between the Catawba and the ever-popular Concord, so scientifically made that the result is a grape possessing the merits of both varieties, with the defects of neither.

Equal in quality to the finest hot-house grapes—as easily grown as the Concord.



Unlike the Catawba, it can be grown successfully in practically any location, for its foliage is not subject to downy mildew, nor its fruit to black-rot. Unlike the Catawba, it ripens early; in fact, slightly earlier than the Concord.

Its bright wine-red color, its unequalled keeping and shipping qualities make it the best market grape ever introduced.

No grape is more prolific, none has successfully withstood more severe tests than this has been subjected to for ten years past. I proved its superiority on every count before offering a single vine for sale. Awarded first prize wherever shown, including a

Certificate of Merit from the American Institute of the City of New York

Awarded because of these exceptional qualities:—

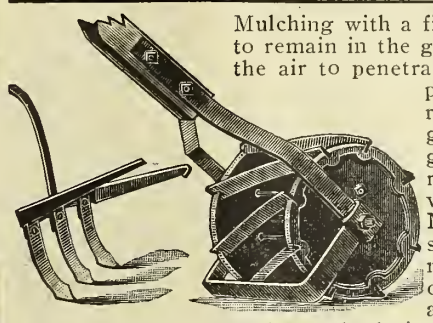
1. High quality—equaling the Catawba in tenderness of pulp, sweet luscious flavor and aroma, with added sweetness and juiciness.
2. Rich sparkling light red, with abundant bloom.
3. Bunch large and compact—just like the Catawba.
4. Berry medium to large and nearly round—exactly like the Concord.
5. Season early; a little in advance of Concord.
6. Skin thin and tough; much like Catawba but thinner.
7. Berry adheres firmly to bunch; hence
8. A superior shipper and keeper.
9. Exempt from both black-rot and brown-rot; and all other diseases.
10. Vine of extreme vigor—a stronger grower than the Concord—and of ironclad hardihood.
11. A heavy annual yielder—as prolific as Concord.
12. Foliage similar to Concord and of like freedom from mildew.
13. Entirely without foxiness in odor or flavor.

Send for large, 80-page, illustrated catalog

Gives full details of this remarkable grape; also of the best Raspberries, Blackberries, Strawberries, Currants, Gooseberries, Garden Roots, Hardy Perennial Plants, Shrubs, Evergreen Trees, Hedge Plants, Vines, Roses, etc., and tells how to plant and grow them. **Free to Everybody.** Write today.

J. T. LOVETT BOX 144 LITTLE SILVER, N.J.

Garden Soil Mulch



Mulching with a fine soil mulch causes the moisture to remain in the ground beneath the mulch. Allows the air to penetrate to the roots of the growing plants. Assists the earth the more readily to throw off the poisonous gases into the air, prevents the growth of weeds, causes a more rapid growth and a better flavored vegetable. **The Barker Weeder Mulcher and Cultivator** makes this soil mulch perfectly and of any necessary depth. Does it all at one operation. Easy running, even a child can operate it. Is indispensable to the market gardener, the fruit grower, the florist. Is sufficient for all kinds of Home Garden work. Write us for descriptive circular and our special "Factory to User" offer.

THE BARKER MFG. CO., David City, Nebr.

SCARFF'S 1912 BARGAINS IN SMALL FRUIT PLANTS

"At it 25 years." Have grown from 1 acre to 1,100. We do not claim to know it all. We do know enough to start you right in fruit growing. Success depends upon good plants of the right variety. We grow the right kinds and make no extra charge for them. We strive for the best in everything. We actually paid

$350 for 10 ears of SEED CORN

We have issued and send free, to anyone interested in good Corn, a booklet telling how we planted the 10 prize ears of Corn, its yield, and other instructive facts. It is nicely illustrated from actual photographs.

Send for Free Catalogue

Every reader of this paper should have a copy. It is a concise business catalogue of Plants, Fruit Trees, Ornamental Shrubs, Vines, Seed Corn, Oats, Potatoes, Alfalfa, Timothy, Clover, etc. Planters should get our prices and terms.

We give our 1912 customers a start of the $350.00 Corn FREE

W. N. SCARFF, NEW CARLISLE, OHIO.

A Bright New Book of 178 Pages for 1912

Telling the Plain Truth about BURPEE-QUALITY SEEDS, is mailed Free of Cost to Gardeners everywhere upon Application to

W. ATLEE BURPEE & CO., Burpee Buildings, Philadelphia

GLENWOOD COUNTY NURSERY

We have for Spring Delivery: Apple, Crab Apple; Pear, Cherry, Plum, Peach, Apricot and Quince Trees. Grape Vines, Berry Plants, Rhubarb, Asparagus; Roses, Flowering Shrubs; Catalpa Speciosa, Black Locust.

J. W. HINSHAW, Prop. EUREKA, KANSAS

The Martha PEACH

Every fruit grower should have Martha Peach trees. No larger peach on record. Specimens have weighed 17½ ounces. We also have good supply of Apple, Pear, Cherry, other varieties of Peach, Asparagus Roots, Ornamental Trees and Shrubs.

ARTHUR L. NORTON

Nurseryman and Fruit-Grower, Clarksville, Mo.

Trees By the Millions. A complete line at wholesale prices. Large supply of peach trees and Privet Hedging.

THE WESTMINSTER NURSERY, Westminster, Md.

A DAY AT NEW HAVEN

One of Missouri's Oldest Nursery Companies Entertains a Fruit-Grower Representative

The propagation of plants is one of the most interesting processes in horticultural work. It is more fascinating really than that of growing the trees in the orchard, and when one follows the business of propagating plants, and becomes well established in the nursery business, it is rare indeed that he ever abandons the work.

There was a time when the idea prevailed that there was some sort of mystery about the propagation of plants, and that the nurseryman resorted to "secret" methods for the purpose of combining root and scion and forming a new tree. But with the advancement of time, and the better dissemination of knowledge, together with the disbelief in many of the old-time superstitions, almost every one has learned how to make a whip graft, cleft graft or how to inarch two branches of a tree. It is all extremely simple, and the former "mystery" was due largely to the prevailing ignorance of the public, and the ability of the propagators to hoodwink the buyers.

But to be a successful propagator and a successful nurseryman are two nature to form the finest kind of roots."

The success of this firm has come from clean business dealings. Mr. Julian Bagby, the senior member and founder of the firm is widely known and loved among orchardists and fellow nurserymen, and his two sons, R. J. and John L. are conducting the business which was so well established by their father, while the third generation is being trained in college as well as practical nursery work for the continuation of the business.

Mr. R. J. Bagby conducted me through the extensive storage and packing house and pointed out the important features of their way of handling the little trees. He showed me the great stacks of trees, all carefully tucked away in well made piles, with their roots packed in damp moss or straw, and in a dark, frost proof building. Many orders, early arrivals, had already been filled but not shipped on account of the very cold weather. These were piled and packed with utmost care, and each order was marked with a conspicuous label, so that there would be no pos-

THE STORAGE AND PACKING HOUSES OF THE NEW HAVEN NURSERIES IN THE GRIP OF WINTER

different things. Many persons are successful propagators who would be failures as nurserymen, but there are no successful nurserymen who are not successful propagators. It is true there are many tree dealers in the country, who wouldn't know a peach tree from a lemon, but they are not nurserymen any more than a shoe dealer is a shoemaker. A nurseryman makes his grafts and grows his trees, but a tree dealer buys the trees after the nurseryman has grown them.

But I am getting away from what I started out to say. I recently spent a day at the New Haven Nurseries of New Haven, Missouri, an institution owned and operated by Messrs. J. Bagby & Sons. This nursery has been in operation for three generations, and "Bagby Grown" trees are known throughout all the land, and represent the highest grade of nursery trees. Many of the orchards that are the big money makers have had their origin at the hands of the New Haven Nurseries, and many of the fine orchards that are being planted today are from stock that is "Bagby Grown."

Some of the finest yearling and two-year-old trees that I have ever seen were in the Bagby packing house during my visit. Big, thrifty, clean trees with a wonderful root growth. I asked Mr. Bagby how it came about that he obtained such a fine root system on his trees and he said "It is our soil. We have the finest soil in the world for growing nursery stock. It is the loess soil, found no place else but on the hills bordering the Missouri River across the state. This soil is especially adapted to tree growth. It is fine grained, loose, very deep and fertile and is of the right sibility of getting it mixed with some other order when the shipping time arrived, and yet so that it could be packed and shipped with the utmost haste and economy.

One of the interesting features of the storehouse was the grafting room. Here were a dozen or more men and boys busy throughout the day grafting the apple trees for the spring planting. Only one variety of scions is permitted to enter the grafting room at a time, it being only one of the means taken to prevent a mixing of two or more kinds. Then, as Mr. Bagby said, "You will notice that we do our work somewhat different from what many nurserymen do. Each of our men is a specialist and has only one operation to do. One group of men trim the roots, that is, cut off the little fibrous roots from the seedling, leaving it a nice clean, smooth root for the next operation. When properly prepared the roots are passed to another group of workmen who cut them into sections of the proper length. A third group prepare the tongue on the stock, while other men have prepared the scions in a similar manner. Then the prepared scions and roots are passed to still other men who match and put them together, whereupon they are passed on down the line to the wrappers. Here the union is wrapped with waxed knitting cotton, tied into bundles of fifty or a hundred and made ready for the callus-pit.

When all of the scions of a given variety are worked up they are packed away in a cool moist place and allowed to remain until spring. By planting time the cut surfaces will have become "callused," and practically healed over. This demonstrat-

Pick Strawberries From Your Own Garden Until After Snow Flies

Just think of supplying your table from June to November with strawberries from your own garden! This any gardener—amateur or professional—can do with our wonderful "Americus." It bears all winter in the South. In the North, it bears from August to November the first year, and from June to November the second year. They are enormously productive, having borne for us in Oswego County, New York, at the rate of 10,000 quarts per acre!

I Know of Nothing So Profitable to Grow

We cannot supply the demand at 25 cents a quart wholesale—a price at which one acre would net $2,000! Anybody can grow this hardy variety, as they require no more skill than ordinary berries. Why don't you set out some of our "Americus" this spring, and next fall and the year following have fine berries for your table and to sell when prices are highest?

Prices of strong, well rooted plants, $2.50 per dozen; $20 per 100, postpaid. Order before the supply is exhausted. You should have our book, "Farmer on the Strawberry." Price 50 cents, or free with orders for $10 worth of plants.

We have 12 varieties of strawberries and all kinds of other Berry Plants, Grapes, Currants, Asparagus, Roses, Shrubs, Fruit Trees, Seed Potatoes, etc.

Write for beautifully illustrated free catalog. Do it now.

L. J. FARMER, "The Strawberry Man"

BOX 230 PULASKI, N. Y.

Bigger Crops of Better Strawberries Grow from Thomas Pure-Bred Plants

Because for 21 years I have devoted myself, body, brain and conscience, to upbreeding and improving the strawberry. I started right. I selected Anna—the most naturally perfect soil and climate for strawberry culture—as the home of Thomas Pure-Bred Plants. Every year I have produced new and more productive strains. I have found that some plants show a strong tendency toward betterment. Proper breeding has enabled me to produce plants which for bearing qualities, vitality and stamina cannot be equalled. Thomas Pure-Bred Plants have many advantages over plants grown North, South, East or West of Anna. Our soil and climate give the needed rest and dormant season to a degree that does not exist elsewhere. The unexcelled bearing qualities of my plants are proved by record crops in 40 states out of the 46 states in the Union

Thomas Pure-Bred Strawberry Plants are the best bred, best grown, best dug, best packed strawberry plants that money can buy,

yet they cost no more than "average quality" plants. I've devoted my life to the study and breeding of the strawberry plant. This one thing I do. I have 200 acres. I positively know that I can increase your yield. I care not how many berries you are getting per acre—if you use my plants, you can get more.

Read What Some of My Customers Say:

Lonisiana.
We are very much pleased with our strawberry plants we bought from you and find they bear nicely.
J. G. HIRSCH & BRO.

Illinois.
I have been getting plants from you for the past four years and have always found them first class and true to name.
H. W. SHACKELFORD.

Arkansas.
My 27,000 plants are doing fine, much better than my neighbors', who used native plants. E. E. WILLIAMS.

Missouri.
The plants I ordered arrived in a good condition. All plants I have ever ordered from you have been true to name and I have been pleased with them.
G. M. WITHERS.

My personal guarantee that every plant is true to label and free from disease is backed by my 21 years' experience and reputation right in my own home county.

I will help you select the varieties best suited to your soil and climate. I can prove to you that whether grown for home use or for the market, Thomas Pure-Bred Plants will bring you the largest return for your money, time and labor. The leading features of my system are explained in

My Great Strawberry Book

Send for it to-day. I'll send it, all charges paid. It's valuable alike to beginners and large growers. It tells how to buy, plant, cultivate, market. 48 pages, 65 engravings. Write to-day.

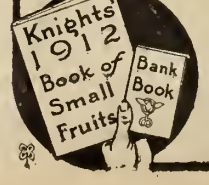
W. W. THOMAS The Strawberry Plant Man
136 Main St., Anna, Illinois

Make Every Acre Net $200 Each Year

An acre of berries will bring more net profit than ten acres of corn or wheat—WITH LESS WORK—five acres, more income than the salary of the average state senator. With ten acres you should live well and put $2,000 a year in the bank.

YOU CAN'T GET INTO A BETTER BUSINESS

Berry growing is a solid, permanent business. Berries have grown to be a necessity—city people are eating more and more. Prices are double what they were ten years ago.



Learn the facts about the great Gibson Strawberry and the Giant Himalaya Blackberry. Knight's Book on Small Fruits tells you all about these and many other profitable varieties. Don't make any definite plans for your 1912 planting until you have seen one of these books. They are free for the asking as long as they last.

David Knight & Son, Box 100, Sawyer, Mich.

ed that there is a great deal of activity taking place within the tissue of a tree, even though it is apparently dormant.

The soil in which the grafts are to be planted is well prepared in the fall, so that it will be possible to work it early in the spring. When planting time comes an implement passes over the field making a deep narrow slot or groove into which the grafts are placed. Then follows another implement that firms the soil about the grafts, and the work of planting is completed. Cultivation is the next thing and this is done very thoroughly to keep down the weeds, liberate the plant food in the soil, conserve the moisture and perform all of the various functions that will promote a strong, vigorous growth in the little trees.

Apples and peaches are the great specialty of the New Haven Nurseries, although they grow a small block of cherries and miscellaneous trees, but every one of their two million trees is grown under their personal supervision, on their own land at New Haven. This insures less liability of mixing varieties and better trees than would likely be obtained if the trees were "farmed out" and grown under contract by disinterested persons in other parts of the country. It has enabled them to build up their enviable reputation as nurserymen and to make

EXPERT WORKMEN MAKING APPLE GRAFTS

the name of Bagby practically a guarantee of a fine tree, true to name and of practically perfect fruiting habit.

This nursery employs no traveling salesmen, doing business direct with their customers. Most of their orders are sold direct to the orchard planter, although great quantities of their trees of recent years have been wholesaled to other nurserymen or tree dealers in all sections of the country from New York to California and Michigan to the Gulf. By eliminating the agent they come in personal contact with the planter and reduce to a minimum the cause for complaints. But of these Mr. Bagby says they have but few, for by growing trees which have no superiors, using buds and scions from bearing trees instead of the nursery rows, then growing and shipping the stock in the most careful manner, and dealing direct with the planter, there are practically no complaints ever made.

One-Year Trees vs. Two-Year-Old Trees for Planting.

In ordering nursery stock, two questions confront the grower; what varieties shall I plant and shall I purchase one-year-old trees or two-year-old trees? It is the purpose of this article to briefly consider the latter question.

The tendency in the past has been to plant the older trees. The desire for large trees or trees that will make a showing as soon as set out may be partly to blame for this state of affairs, or growers may be too anxious to have their trees come into bearing early. Very little time, if any, is gained in setting out two-year-old trees. But even if this point be granted, the arguments still favor the setting out of one-year nursery stock.

In the first place the grower will not have to pay as much for a one-year tree as for a two-year-old tree, the difference in price amounting, in some cases, to ten or fifteen cents per tree, retail price. The extra labor and cost of setting out larger trees is an item worthy of consideration. The roots of trees should not be bent or crowded into the holes prepared for them, but should retain their natural position. If the root system is in proper proportion to the top, the advantage of setting out one-year trees is evident, for more labor will be required in setting out two-year-old trees. As a matter of fact the tops of both one- and two-year trees are out of proportion to the roots so that both need to be trimmed, but more time and labor will be required to properly trim the older trees, for more wood will need to be cut. Unless the planter can nerve himself to do this work right, the chances of obtaining a good stand are in favor if the younger trees, because they have a better root system for their size.

However, when it comes to setting out a commercial orchard, a small item of original expense should not be alone sufficient to influence the orchardist one way or another. He should be willing to spend a little more, if need be, in the first instance to insure his trees getting a proper start. In this case the reverse is true. The best argument in favor of the younger and cheaper tree is that it can be trained to suit the needs and ideals of the grower. This important factor should not be overlooked. It takes a long time to replace a mature tree which breaks down beneath a heavy load of fruit or before a heavy wind, as the result of improper training. Every precaution should be taken to see that the trees are started right, that they develop strong branches and be free from bad crotches. A one-year whip of a tree can be trained to suit the will of the planter, whereas two-year-old trees are so far advanced that defects in regard to form cannot be overcome, though perhaps they may be modified to some extent by careful pruning. The advantage of one-year over two-year stock in the matter of training should be sufficient to induce planters to set out the former. Strength and form of tree should not be sacrificed for a possible chance of gaining one year in time of bearing. A gain of one year will never replace loss of a tree that had no chance of being properly trained.

C. STARRING,
Assistant Horticulturist, Idaho Experiment Station.

About the pruning. Have you started to do yours? Now is the time to get busy at it. If pruning is delayed until warm weather comes, the pruning is most certain to be left undone, as the dormant spraying will need to start at that time.

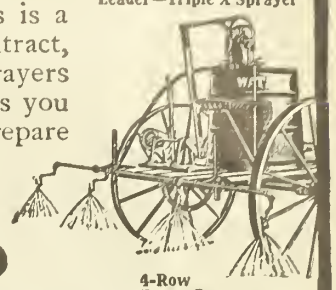
Don't fail to order your garden seeds now. The seed shortage that prevails will be felt by those who wait until the last minute before ordering their seeds

SPRAY

Ask Us to Send You Spraying Calendar and Directions — FREE.

Leader—Triple X Sprayer

No matter whether yours is a large or a small spraying contract, our book on Spraying and Sprayers will be a great help to you. It tells you what spray mixtures to use, how to prepare mixtures, when to spray and how to spray to secure best results.



4-Row Potato Sprayer

A Sprayer to Suit Your Needs

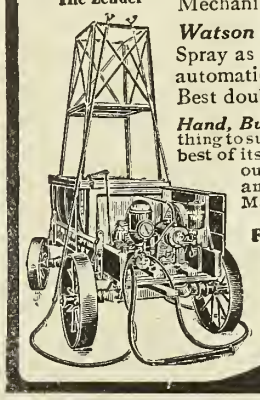
Our line includes everything from the small hand sprayer up to our famous power orchard spraying rigs.

Empire King

Our Leader Orchard Sprayers are typical modern machines for large spraying operations. Combination mounted outfits consisting of gasoline engine, spray tank, pump, platforms, spraying appliances, all complete and ready for work. Power ample to keep ten nozzles going, each with 200 lbs. pressure. Improved liquid agitators and strainer cleaners. High class gasoline engine can be used separately to furnish power for all kinds of farm work.

The Empire King, the old reliable barrel spraying outfit. A great sprayer for general purpose work, sole reliance of thousands for spraying fruit, vegetables, shrubbery and small trees. Mechanical agitation of liquid, automatic strainer cleaners.

The Leader

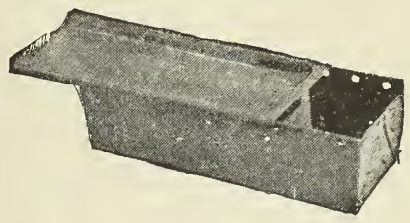


Watson 4-Row Potato Sprayer, for wide or narrow rows. Spray as fast as you can drive. Power always strong, automatic agitation of liquid and cleaning of strainers. Best double cylinder pumps, brass working parts.

Hand, Bucket and Knapsack Sprayers. Something to suit every requirement, every one the best of its kind. Be sure to write and get our Sprayer's Book before buying anything in the Sprayer line. Mailed free. Address

FIELD FORCE PUMP CO
58 11th Street
Elmira, N. Y.

FIELD FORCE PUMP CO. The Leader "OSPRAYMO" LINE OF SPRAYERS ELMIRA, N.Y.



MILLIONS OF DOLLARS

were lost by the Orange and Lemon Growers of California last Christmas night, because they were not equipped with proper heating devices. In some districts temperatures of 18 above were recorded, and a 14-hour burn was necessary. Every user of

The Hamilton Reservoir HEATER

made good against these terrific conditions and the valuable lesson was learned at a tremendous cost that none but a large heater with **Reservoir Capacity** and with the **REGULATED FIRE** provides full protection for such conditions.

The growers of California no longer want inefficient, small heaters, as they will not do for a 14-hour burn against 12 to 14 degrees of frost.

Mr. Fruit-Grower, you had better profit by their experiences when buying your heaters, and get the most powerful equipment and one that holds several gallons of oil. Write us for the facts about this great Frost Fight and the only heater that gave every user full satisfaction. The big six-gallon heater proved the big winning factor. Write us for information.

The Hamilton Orchard Heater Co.
Grand Junction, Colorado

PRUNING IN COLORADO

How the Orchardists of Grand Valley Shape Up Their Trees—A Comparison

It is not my purpose in this article to put forth anything new regarding the training of a young orchard, or to repeat again the principles of pruning. I shall endeavor to show what is actually being done in pruning bearing orchards in the Grand Valley and show the different ideas of pruning as they have been adopted and discarded. I shall also show the tendency of the growers regarding the amount of cutting, and perhaps make some remarks as to what the results have been, and the possibilities.

It is a well-known fact that there are many systems of pruning, and as many ideas concerning each system. The reason for this is that pruning is not an exact science. The rules laid down by schools and experts must always be elastic enough to fit the varying conditions, and are usually capable of being interpreted rightly in different ways or misinterpreted altogether.

Figure 1—A fourteen-year-old Ben Davis tree in the orchard of G. I. Hill, one year after it had been cut back, and before it had been pruned

Consequently, we have a large body of intelligent fruit growers, working to attain the same end, to produce on their trees the maximum amount of first-class fruit each year, but working in different ways. The controversies that arise are largely relative to the amount of cutting that should he done, and some other unimportant points.

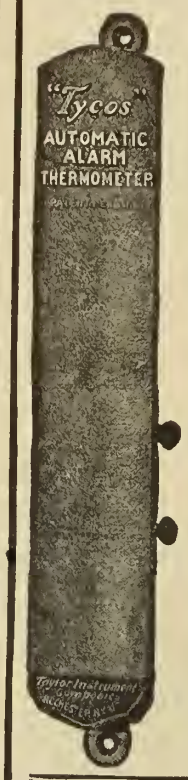
The first few years pruning consists in shaping and building the tree, and the pruning that follows through the years of fruitfulness consists mainly in keeping it in condition and conserving its producing power. Bearing trees should be pruned to keep them invigorated and rejuvenated, to keep the fruit bearing wood properly distributed through the tree, to keep them stocky enough to support their fruit, to keep the whole tree accessible to sun and air, to keep it within reach of the spraying machine and picking ladders, and out of reach of the tools of cultivation.

In the shaping and building of trees and more particularly apple trees, there has been a steady advance in ideas. The tree with one central leader and the main side branches distributed around the leader gave way to an open headed tree. In the first open headed trees grown, the main leader was cut out when the tree was started and all side leaders left to grow. Consequently we had a tree, very little, if any better than the central leader. We have old trees today which have as many as fourteen, or more, main branches coming from the body of the tree. From the community headed tree with eight, or any number of main branches, there came a tree with from five to seven main branches. Up to a few years ago this was the best tree in every respect yet grown, but it had many things against it. In any community headed tree it was found that the main branches were apt to bear down under even a normal weight of fruit, and split off from the body of the tree. The greater number of main branches leading directly away from the main trunk, the weaker they were found to be. Consequently, the number of main laterals was reduced from three to five. The least number were taken which would give a well balanced tree.

So today, there exists an ideal in the minds of the great majority of the growers, which consists of a tree with three main lateral branches distributed evenly around the trunk, with a difference of height, on the trunk, of from eight to twelve inches. These branches lead away at an angle to permit the tools of cultivation to come up to the body of the tree. They branch again ten to twelve inches

Protection Against Frost

Don't Let Frost Get Your Crops and Fruits



Be sure to start the "smudge" in time to avoid all danger, but don't have the unnecessary expense, labor and inconvenience of running your heating or "smudging" device when there is no need of it. With a **"Tycos" Automatic Alarm Thermometer** you can sleep with assurance that you will be warned of approaching danger, and at the same time you are not diminishing your profits by the expense of "smudging" days and nights when unnecessary.

A "Tycos" Automatic Alarm Thermometer

"TAYLOR THERMOMETERS TELL THE TRUTH" "Tycos" IS THEIR "STERLING" MARK

Tells with Certainty when the Temperature has reached the Danger Point

You take no risks when you have a **"Tycos"** installed. It works with any system of heating or "smudging," and guarantees absolute protection against frost slipping up on you unawares. It is so simple that any one can install it, yet strong and durable, being protected by heavy metal weatherproof case.

It rings a bell, located wherever desired, at the instant the temperature where the thermometer is situated reaches the point of danger. It does away with any uncertainties of whether or not you should have your "smudge" going. It informs you emphatically, day or night, of approach of frost. It pays for itself in the saving of unnecessary "smudging" every year, and may save its cost many, many times, by giving you the alarm at the sneaking up of unexpected frost.

When you buy any kind of a thermometer always look for the name **"Tycos"**—there's a **"Tycos"** Thermometer for every purpose. The name is your protection and our guarantee. Write for booklet, "Incubator Facts." "'Tycos' Tips for Butter Makers," "The Thermometer Book," etc.

The **"Tycos" Alarm Thermometer** may be installed in Single Thermometer Alarms, or Annunciator Connection Systems. If your dealer can't supply you, write us.

Send post card today for free booklet giving diagrams of the **"Tycos"** Alarm systems. It explains and makes simple the **"Tycos"** method. Do it now.

Taylor Instrument Companies

107 Ames St. Rochester, N. Y.

"Where THE Thermometers come from."

RHODES DOUBLE CUT PRUNING SHEAR

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

Dept. A

RHODES MFG. CO., GRAND RAPIDS, MICH.

STRAWBERRY PLANTS THAT GROW

LET ME SEND YOU MY FREE BOOKLET

"STRAWBERRY PLANTS THAT GROW"

Describing a full list of varieties with prices. Also INSTRUCTIONS FOR PLANTING AND CULTURE of STRAWBERRY, RASPBERRY, BLACKBERRY, CURRANT, GOOSEBERRY and GRAPE PLANTS; also ASPARAGUS and RHUBARB ROOTS.

All Stock Warranted First Class and True to Name or MONEY REFUNDED.

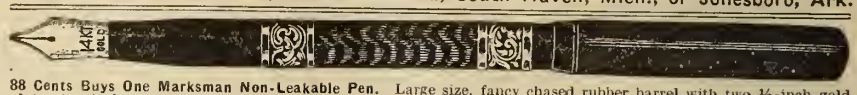
C. E. WHITTEN'S NURSERIES, BOX 9, BRIDGMAN, MICHIGAN.

BERRY BOXES

FRUIT BOXES BASKETS AND CRATES

The package advertises and sells the fruit. Let us send you catalog showing the superiority of packages we are manufacturing. 26 years at it, we know the requirements, and we want you to know our prices. We make mixed shipments. Join your neighbors in carload lot shipments, and save freight. Prompt shipments at all times. Address nearest office.

The Pierce-Williams Co., 542 William St., South Haven, Mich., or Jonesboro, Ark.



88 Cents Buys One Marksman Non-Leakable Pen. Large size, fancy chased rubber barrel with two ½-inch gold plated bands fitted with large gold plated velvet point pen. Packed complete with filler. Reliable agents wanted.

C. L. MASTERS, BOX 10, ASHLAND, OHIO

SEED CATALOG FREE

Burrell's Improved Kleckley Sweet Watermelon

The finest watermelon grown. Best quality, surest to produce a crop. It should be in every garden. Catalog lists this and all kinds of Garden Seeds. It's free.

BEST SEEDS, READ WHY

D. V. Burrell's Seeds are Best. Because I plant the best stock seeds skill can select and money can buy. If there is a special strain of Tomato, earlier and better than the rest; if there is a Cantaloupe of better flavor, a better shipper and more resistant to unfavorable climatic conditions which cause rust or other unfavorable results; if there is an earlier Cucumber that is prolific and a good shipper and more profitable to grow; if there is a special strain of Onion for any desirable purpose; if there is a Wax Bean, a Cabbage, a Pepper, or any other variety of vegetable which has been proven better than the rest, I spare no expense necessary to get or produce this seed for my customers. I want you to produce the most profitable crops in your community and then do me the favor to say: "You can get the Best Seeds from D. V. Burrell, Seed Grower, Rocky Ford, Colorado, and they cost but little more than ordinary seeds." This is why thousands of the most successful planters of the United States plant these seeds each year and grow Money Making Market Gardens or Home Gardens which are a source of pleasure and supply a well furnished table. I want you to plant my seeds this year. Catalog free.

SEED CATALOG FREE

D. V. BURRELL'S SEEDS ARE BEST

Burrell's Rust Resistant Rocky Ford Cantaloupe

will produce fine melons where ordinary varieties rust and are a failure. Best sort for market growers. I grow 2000 acres of seeds.

D. V. BURRELL, SEED GROWER, Drawer 23 Rocky Ford, Colorado

ALFALFA CLOVER SEED

Northern grown, "Full of Life," tests 98% purity, 95% germination. Write for samples and prices and New Beautifully Illustrated Catalog which tells about the best varieties of "Full of Life" Seeds. Plants, Bulbs, Shrubs, etc.

H. W. BUCKBEE, Rockford Seed Farms, R. F. D. 37 ROCKFORD, ILLINOIS

It Pays to Clear Land

WITH

DU PONT **Red Cross Dynamite**

The upper view shows how groups of big stumps are blasted out clean at one time, with all dirt off the roots and stumps shattered into kindling wood. At the same time the subsoil is thoroughly broken up, creating a fine home for the new crop. Lower view shows a celery crop worth $800 per acre ten months after stumps were blasted out.

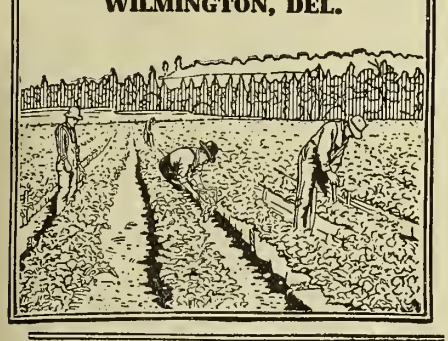
Booklet Free

To learn how progressive farmers are using dynamite for removing stumps and boulders, planting and cultivating fruit trees, regenerating barren soil, ditching, draining, excavating, and road-making, write now for Free Booklet—"Farming with Dynamite, No. 36"

DU PONT POWDER CO.

PIONEER POWDER MAKERS OF AMERICA

WILMINGTON, DEL.



SMASHED PRICES ON 100 CARS OF RUBBER ROOFING

½ PLY Guaranteed 7 Yrs.	75c Per Roll	1 PLY Guaranteed 9 Yrs.	93c Per Roll	2 PLY $1.19 Guaranteed 12 Yrs. Per Roll	3 PLY $1.47 Guaranteed 15 Yrs. Per Roll

Way under regular mill price we juet bought 100 cars of rubber roofing and as long as it lasts you can have it at our wonder cut pricee. *This is No. 1 rubber roofing, as good as any rubber roofing*, regardless of brand or price. Suitable for old roofs, new roofs and over old shingles. Anyone can lay it. No special tools needed. No coating or painting. Fire proof, water proof. Strong and flexible. *Guaranteed 7 to 15 years*, but will last a life time. Made of best long fibre wool felt. Saturated with non-sweating, non-evaporating, non running, non-cracking special compound. Both sides are heavily COATED WITH PERPETUAL COATING PRESERVATIVE Never dries or brittles. Fume, gas, vapor and steam proof. Absolutely non-tainting. Rolls are 32 in. wide, contain 108 sq. ft. and will cover 100 sq. ft. Nails, directions for laying, cement for cementing laps sent with each roll.

Write for Free Roofing & Fencing Catalog --see our cut prices on Tarred felt, asbestos roofing, gravel surface roofing, crushed slate roofing, metal roofing, metal ceilings, metal lath, roofing felt, sheathing, plaster board and every article kindred to the roofing trade.

Order From This Offer for at these prices the 100 square feet will go quick. Send a deposit of 1-5 the amount of order—if the order is $5.00, send $1.00 deposit. If $10.00, send $2.00 and so on. State quantity wanted, figuring one roll will cover 100 sq. ft., and we will send the roofing C. O. D. by freight, subject to examination. The balance and freight charges you pay the agent after you find the roofing perfectly satisfactory, the equal of any rubber roofing you ever saw at double our price and a more wonderful bargain in roofing paper than you ever imagined possible. Otherwise have the agent return it at our expense and we will instantly refund your deposit.

Wire Fencing on 60 Days Trial Also we lead in lowest prices on wire fencing—all kinds—farm fencing 11 1-2c a rod, poultry fencing—50 ft. at 65c, lawn fencing 5 3-4c a ft., gates $1.79, and barb wire and fencing accessories at correspondingly low prices. All our roofing, fencing, etc. is illustrated, described and priced in our **Great Special Roofing and Fencing Catalog** which we will gladly send you free upon request. *Write for it today.*

JOHN M. SMYTH MOSE CO. 150-243W. Madison St. **Chicago**

Strawberry Plants

That Will GROW. Strawberry, Raspberry and Blackberry Plants, all heavy rooted and grown by myself. Satisfaction guaranteed or your money refunded. Price list free. **P. J. Myers' Nurseries, R. 7, Bridgman, Mich.**

FALL BEARING STRAWBERRIES. You can have Strawberries from August until November from Pan-American, Superb and Productive plants. Circulars free. For sale by **SAMUEL COOPER, Delevan, N. Y.**

away from the trunk, and branch again, until a sturdy, stocky framework is built. After the tree was [illegible] up, approaching the ideal as nearly as possible, the effort of the pruner was to keep it in condition to bear the maximum amount of first-class fruit each year.

In the early history of fruit growing in the Grand Valley, the pruning of bearing trees consisted in cutting out water sprouts, and broken or dead limbs. The position was taken that after the tree had been shaped, in its tender years, it should be left to produce what fruit it might have the strength to bear, nature should not be interfered with. As the trees grew older it was found they were not stocky enough to support the weight of fruit they bore, and an effort was made to thin out the bearing wood, and induce them to bear less fruit, of a better quality, larger, and higher colored fruit.

Off-years, following years of great production, discouraged a consistent following up of this system, and each productive year found the trees in poorer condition to bear. As a result of off-years, and the attendant uncertainty, the necessary pruning was in many cases wholly neglected. However, thinning out the bearing wood was found to force the growth toward the top of the tree, resulting in long bare branches, with a brush of bearing wood on the end. Then came top cutting, cutting back the long leaders. This was at first rather timidly experimented with until it was found to make the tree stocky and force growth down into the tree. As good results have been shown it has become a general practice to cut back the long leaders periodically. The amount of cutting varies with the condition and age of the tree. Trees from eighteen to twenty years old have had as much as eight feet cut off in one season, with beneficial results. This is rather hard cutting, and it has been suggested that when cutting of this kind is necessary, it should be extended over a number of years. As soon as new shoots begin to grow lower down, and the body of the tree begins to thicken with fruit bearing wood, the second cutting should follow.

Two or three feet is considered a reasonably heavy cutting, together with the necessary thinning lower down in the tree. In cutting back a limb, it is customary to cut it back to a strong shoot, but this is sometimes modified, and a stub cut made with the idea of cutting the stub back to a new shoot the following year. This is usually avoided whenever possible. As a result of cutting back, the tree springs into new growth immediately. Pruning the year following, consists in cutting the surplus of new growth, and training the growth that is saved. The new wood left the first year after top cutting, is ready for bearing the second year. The second year after top cutting, is mainly a thinning out process, with some cutting back of new growth through the trees, in an effort to start fruiting.

In figure 1 is shown a fourteen-year-old Ben Davis tree after a medium heavy cutting back. A large per cent of the growth through the body of the tree, is new growth, directly the result of last years' pruning. The growth shows the vitality and vigor of the tree.

In figure 2 is shown the same tree after receiving its annual pruning this year. The tree was started as a central leader tree and has come down through the evolutionary ideas in pruning. It has a six inch cut in the center, which is healing nicely, and several other large wounds, showing that heavy cutting has been necessary in order to keep it in the right shape and condition. This is an average of the yearly pruning that is considered necessary. The tree is not without its faults of structure and framework but it is stocky and sturdy enough to support any load of fruit that it is capable of bearing and is now in condition to bear at least fifteen boxes of fruit. The center is open to sun and air, and there is very little crowding or interfering. The bearing wood is well distributed through the tree, growing down to within a few inches of the main crotches. It may be necessary later in the life of the tree to cut out some of the old framework, as new wood begins to crowd it and take its place, but the shape and general structure will be preserved throughout the life of the tree.

In figure 3 is shown a twelve-year-old Bartlett Pear tree, and in figure 4 is shown the same tree after having been pruned. In examining figure 3 closely there can be seen evidences of the previous year's pruning. (The weak limbs leading out to the right of the figure were evidently cut back to throw them up and make them stocky. The weight of fruit has evidently borne them down and in order to keep them out of the way of cultivation it has been necessary to cut them back.) In comparing the two

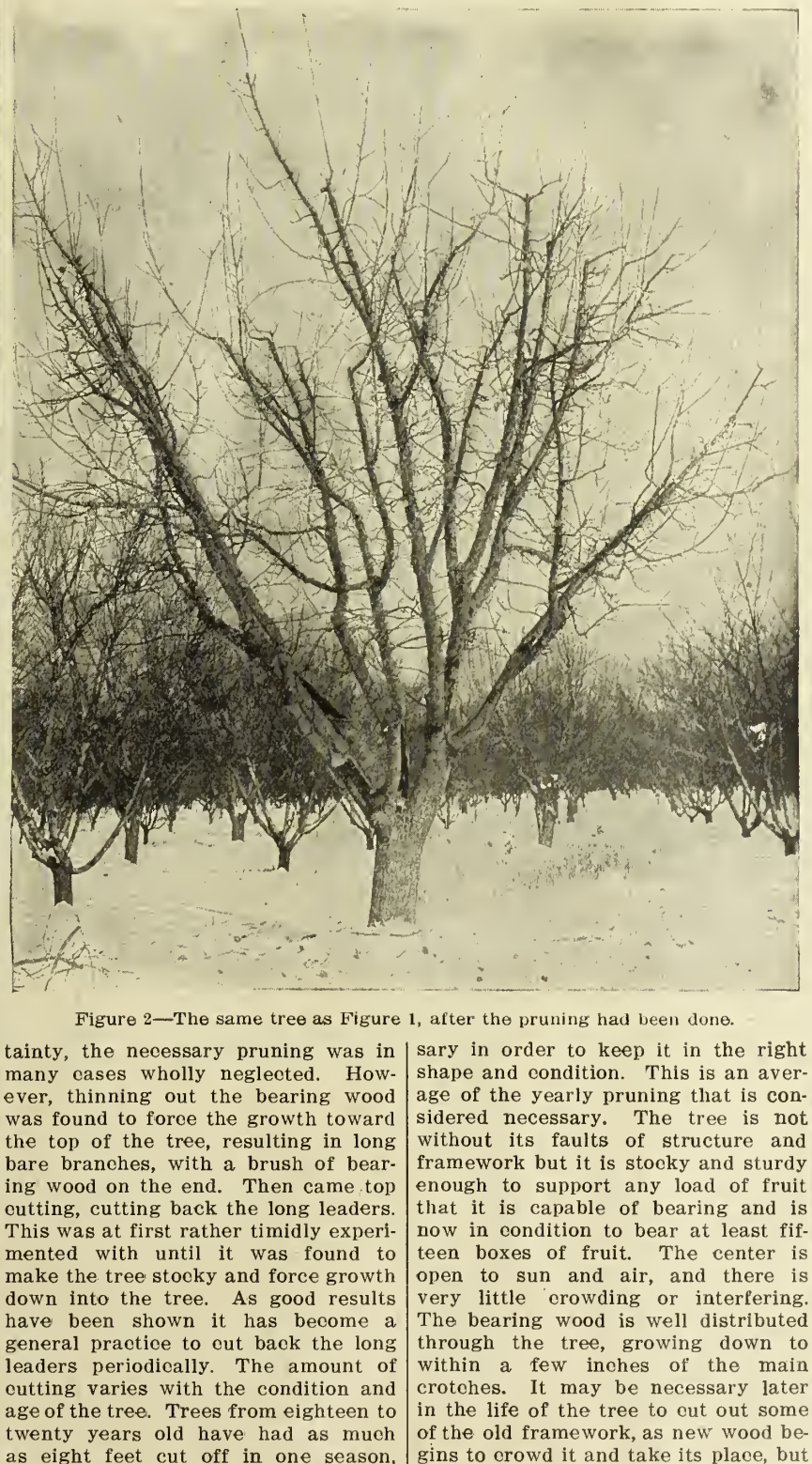
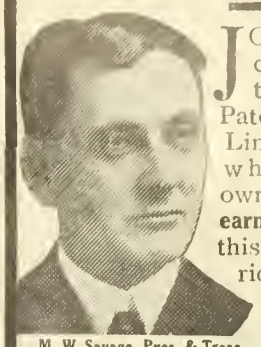


Figure 2—The same tree as Figure 1, after the pruning had been done.

Make Your Money Work For You



M. W. Savage, Pres. & Treas.

JOIN us in completing the Dan Patch Electric Line and **keep** what your own money **earns;** get in on this chance of rich reward for the small investors **who control their own dividends.**

Dan Patch Electric Railroad

is an example of what the people can do when they work together! A line running finely-equipped trains daily—with a big and growing freight and passenger business—the first electric road to tap the wealth of the great and growing Northwest.

This Electric Line is the greatest achievement of my business life—I consider. I have made a large investment in it—that's **my** faith in the Dan Patch Railroad! And 6000 others have joined me, until now we have a road that has 40 miles in operation—and 30 more soon to run—a wonderful proof of what can be done by the People when they **pull together** without interference of the "money-kings."

I offer you $600 in voting stock absolutely free with an easy monthly investment in preferred stock

The Dan Patch Electric Line is in successful operation from Minneapolis to Northfield—about 40 miles, but I want to push on and complete it to Rochester, and I want you to join us. Be a stockholder—let your money work for you. But first

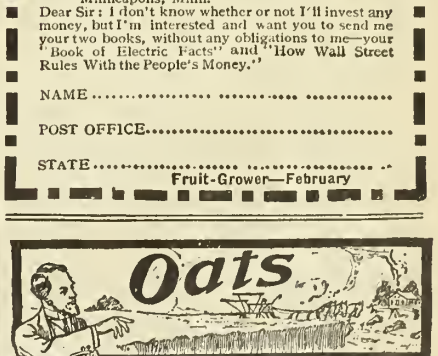
Write for my Free Books

One gives you all the facts about electric railroads and the Dan Patch Line; tells **how** it works, and **where** it's working—all about it; solid substantial facts. The other book will give you some new and startling ideas about Wall Street and how it **gets rich on your money.**

Don't delay—it will cost you **nothing** to get this information. Send for the books today and get all the details about **me**—and the Dan Patch Line and all the "REASONS WHY."

You should invest—whether much or little—and lay a firm foundation for **independence** of panics and Wall Street, and the men who run the "System." Write me now—today, on this coupon, or a postal.

M. W. Savage, President
Minneapolis, Minn.



M. W. SAVAGE, Pres. Dan Patch Electric R. R.
Minneapolis, Minn.
Dear Sir: I don't know whether or not I'll invest any money, but I'm interested and want you to send me your two books, without any obligations to me—your "Book of Electric Facts" and "How Wall Street Rules With the People's Money."

NAME .....

POST OFFICE .....

STATE .....

Fruit-Grower—February

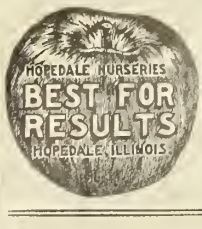
Twenty odd years ago, Salzer's White Bonanza Oats won the world's prize of $500.00 offered by the American Agriculturist for the heaviest yielding oats.

Our new Rejuvenated White Bonanza Oats gave during 1910 and 1911 sworn-to yields ranging from 80 to 259 bushels per acre. Does well everywhere, not so particular as to soils and climes.

For 10c Stamps We Mail

A package of our Famous Oats, together with a lot of other rare farm seed samples, as also our Mammoth Catalogue, if you ask for same.

JOHN A. SALZER SEED CO., 2088. 8th St., LaCrosse, Wis.



We have no "Patent Right" on honesty, nor do we claim to be the only honest nurserymen. Many nurserymen are not careful enough to pack the sorts called for. Our 48 page descriptive catalog explains our methods of propagating and doing business. It has a chapter on **spraying** and much practical cultural information. It is **Free.** Send for it today. Hopedale Nurseries, Dept. M, Hopedale, Illinois.

FREE Our handsome Seed Catalogue. Send your address on a postal today, or for a 2c stamp and the names of two neighbors, actual seed buyers, catalog and packet Early June TOMATO Seeds earliest variety grown, if sent before March 15. Address COLE'S SEED STORE, Pella, Iowa. **Seeds**

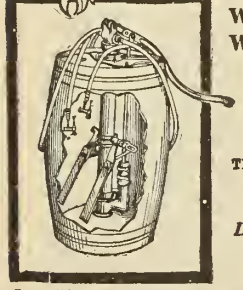
Guarantee Your Fruit Crop by Spraying

It is practically impossible to raise perfect fruit without spraying thoroughly. To spray properly you need the best spray pump made—one of the many

GOULDS
Reliable
SPRAYERS

Every part is made to give long service and designed to give the best possible results in all spray work. Every requirement is met by the complete line shown in our book,

"How to Spray, When to Spray, Which Sprayer to Use"



Send for a Copy. It contains valuable spray formulas.

THE GOULDS MFG. CO.
40 W. Fall Street
Seneca Falls, N.Y.

Largest Manufacturers of Pumps for Every Service

In writing advertisers please mention The Fruit-Grower.

CORN SAVER BEETS

Double Hog Profits

Save one-half of your corn by feeding beets to your hogs and double your profits. These beets grow 40 to 80 tons per acre. Illustration shows one beet, weight 28 lbs. Plant 10 lbs. to acre. Healthy feed for milch cows, extra rich in sugar. Write for Free Book that also tells about our exceptionally fine New Shallu, Milo Maize and Kaffir corn.

All seeds at remarkably low prices this season. But they may go up—order **NOW.**

GRISWOLD SEED CO., 137 South 10th St., Lincoln, Neb.

We'll Help You to Get Bigger Crops of Fruit

Rupert's Guaranteed Trees—grown in the heart of York State's fruit belt—give big results because they are *grown right* from the start. We grow everything we sell. Freight charges paid on orders of $7.50 or over. Our "Big Four" leaders: PEARS—Bartlett, Seckel, Clapp's Favorite. CHERRIES—Montmorency, Black Tartarian, Windsor. PLUMS—Monarch, Wickson, Climax. PEACHES—Budded from bearing trees.

Rupert's Tree Book tells about our trees, our guarantee, and why we sell at wholesale prices. It is free—what is your address?

W. P. RUPERT & SON, Fruit Ave., Seneca, N. Y.

In writing advertisers please mention The Fruit-Grower.

POMEROY HARDY ENGLISH WALNUT

Write for prices on
TREES

Norman Pomeroy
Lockport, N. Y.

$100 Worth of Seeds Free

With First Order from New Customers

The biggest, best, most liberal seed offer ever made. We want to introduce our Guaranteed, Sure-to-Grow Seed in your neighborhood and convince you of their superiority. We want you for a customer this year, for a trial makes a permanent customer. Write today for our Free Offer and 76-page catalog of Field & Garden Seeds.

A. A. Berry Seed Co., Box 263, Clarinda, Iowa.

figures there can be seen the amount of cutting done in one pruning. This pruning is somewhat different from the pruning as shown in the Ben Davis tree. The center is not thrown so wide open and it contains a center limb. This is the main difference between the structure of a pear and apple tree. It seems more advisable to keep the center of the pear filled with wood, as the color of the pear is of very little consequence.

In figures 5 and 6 is shown a six-year-old Elberta Peach tree before, and after pruning. In figure 5 one can readily find, at about the middle of the picture where the pruning was done last year. Figure 5 shows the great amount of wood produced each year. To one unaccustomed to the production of extra fancy peaches this may seem a great waste of growth, but to this vigorous annual pruning is due the great production of the famous Palisade peach. The tree is not without faults in structure and the lower and center parts of the tree lack sufficient bearing wood. However, the tree is in shape to bear

Mr. Lurvey, in the Fruitdale district, experienced very good results after heavy pruning. His trees are twenty years old. Two years ago they bore a heavy crop of inferior fruit. Last year they bore a short crop of small poor fruit. After the 1910 crop Mr. Lurvey cut back three to four feet on the main laterals, thinned out the wood heavily through the body of the trees and removed in all, at least thirty per cent of the wood. As a result he had a fair crop of extra fancy apples. Seventy-five per cent ran fancy or first grade and were better than the usual run of this grade. He now has a good prospect for next year. This winter he expects to thin out the fruit spurs and cut back the long shoots which have not made fruit buds. This is one case in which it has been proven that a heavy pruning was necessary for a profitable yield.

Mr. R. E. Turpin, in the Pomona district, has followed systematic pruning and thinning of his apples through a number of years and has had, as a result, a fair crop each year. In previous years he has found it necessary to do heavy pruning in order to open the center of his trees and thin the wood through the body. All his work today is done with a pair of hand shears. This is possible where pruning is followed systematically and never neglected. The center of the trees are open to the sun and air and the body full of fruit bearing wood. His trees are easily sprayed and he can pick the topmost fruit from a twelve foot ladder.

Figure 3—A twelve-year-old Bartlett pear tree in the orchard of G. I. Hill, before it was pruned.

Mr. Turpin advocates conservative winter pruning and careful thinning after the fruit has set. By never permitting an overproduction and always keeping a supply of new fruit spurs he has succeeded in striking a fair average production each year, and always has a good per cent of first grade fruit.

Thus, from a position taken by early growers that the tree should be shaped in its first early years and then left to bear what fruit it may have the strength to bear, with an occasional cutting out of dead limbs and water sprouts, advanced growers are taking the stand that by systematic pruning each year, they can do a normal crop of fruit, and thinning will probably have to be done after the peaches set.

The tendency of pruning apple trees is to prune heavier and more systematically, each year. Most of the heavy cutting is done by growers whose orchards are not in shape, and is an effort on their part to renew them. Those whose orchards are in shape can care for them with a light pruning each year and only find it necessary to cut back, or do other heavy cutting every four or five years. When the pruning is never neglected and done at the proper time, in the proper way, heavy cutting is seldom necessary, but there is very little danger of pruning too heavy in an unproductive orchard. To quote from an article written by Mr. R. W. Allen, "The most successful orchardist is he who prunes conservatively but always attends to it at the proper time and sees that it is done correctly. While a puny growth and a small percentage of small fruit is the usual result of insufficient pruning, a dense growth and coarse branches and a small amount of large fruit is the usual result of excessive pruning."

THE most complete implement book published. Illustrates and describes the best line of farm tools made. Tells when and how to use them. It answers every question about farm machinery. No farmer can afford to be without this book. Write for it today.

John Deere Plows, Cultivators, Harrows and Farm Tools

Trade-marked goods that have received the gold medal at every world's fair and international exposition since 1840. The world's best in farm implement building. Everything from the smallest walking plow to an engine gang—high class and up-to-date. Have the best. The John Deere trade-mark protects you against inferior goods. Take no chances.

No matter what implement or farm tool you want, write us what it is and then be sure to ask for the big illustrated book, "Better Farm Implements," package No. X56

Get Quality and Service—John Deere Dealers Give Both

JOHN DEERE PLOW CO.
Moline, Ill.

SEEDS

BUCKBEE'S SEEDS SUCCEED!

SPECIAL OFFER:

Made to build New Business. A trial will make you our permanent customer.

Prize Collection Radish, 17 varieties; Lettuce, 12 kinds; Tomatoes, 11 the finest; Turnip, 7 splendid; Onion, 8 best varieties; 10 Spring-flowering Bulbs—65 varieties in all.

GUARANTEED TO PLEASE.

Write to-day; Mention this Paper.

SEND 10 CENTS

to cover postage and packing and receive this valuable collection of Seeds postpaid, together with my big Instructive, Beautiful Seed and Plant Book, tells all about the Best varieties of Seeds, Plants, etc.

H. W. Buckbee, ROCKFORD SEED FARMS Farm 363 ROCKFORD, ILL.

HALF A DOLLAR FOR A DIME

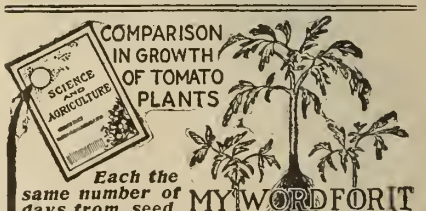
HERE IS THE LIST
Perfection Asters
Mixed Sweet Peas
Fine Mixed Pansies
Double Chinese Pinks
D'ble Carnation Poppies
Scarlet Gem Radish
Yellow Globe Onion
Prizehead Lettuce
Surehead Cabbage
Favorite Tomato,
Value 50cts.

Just as an introductory offer. Just to get you to try our seeds, we are making this wonderful bargain offer. We do not hope to make any profit on your trade unless you are pleased and become a regular customer, so you may be sure you will get good seeds. These seeds valued at 50cts by reputable seed dealers. Don't delay! Send today.

OUR TRIAL COLLECTION Ten Packets choice seed 10CTS

Free Catalog

DES MOINES SEED CO., Dept 20 Des Moines, Ia.



Each the same number of days from seed, but started at different intervals of the MOON'S INFLUENCE.

MY WORD FOR IT

My *free book* **SCIENCE AND AGRICULTURE** tells of **MOON'S INFLUENCE** over plant growth. Planters of truck for market sale, or those with home gardens should not miss this instructive book. 15,000 copies already mailed—let me send you one. *A living* from city garden growing tomatoes *early.* Write today.

$1000 PER ACRE FROM TOMATOES

FRANK H. GREGORY, Cregory Farm
41 Fairacres, Bay City, Mich.

COW PEAS and SOY BEANS

As feed: unexcelled, rich in protein. As fertilizer: stores nitrogen. As crops: big yielders. These legumes fit into all systems of farming. Write us today about seed, and ask for our booklet on cow peas and soy beans.

HICKORY SEED CO., 114 Trade St., Hickory, N. C.

termine the size, color and quality of the fruit to be borne.

Thinning the fruit and summer pruning, which are very closely related, are now being taken up. Speaking from the standpoint of a commercial orchardist, summer pruning is still in an experimental stage and the work that is now being done is done in the smaller orchards. Thinning is done as time gives opportunity, except by those who have come to look upon it as a necessary adjunct to orchard work. To produce first grade fruit it will be necessary to follow this as thoroughly as the thinning of peaches is now followed, at least in years of over-production. Systematic summer pruning will not be taken up generally until those experimenting with it today have shown good results.

Summer pruning consists mainly in cutting old fruit spurs and cutting back new shoots. Whether pinching buds and glove pruning can be practiced to advantage in old trees as it is done in young trees is a question. This work will not take the place of winter pruning, but it will cut down the amount of winter pruning necessary and will not add to any great extent to the orchard work. On many apples some fruit is borne on one-year wood, and although this cannot be relied upon, as on peaches, it can perhaps be induced by summer pruning.

The pruning of apple trees is approaching in style and thoroughness the peach pruning as carried on at Palisade.

There are many different problems in pruning. Growers are coming to look upon their trees as individuals, and with a knowledge of their history, of what they have produced and should produce, and by examining their present condition they are coming to understand the individual needs more fully. Different varieties present different problems, and growers are studying them not only in reference to shaping them but to regulate their fruit bearing wood and fruiting habits.

To the grower who has had unsatisfactory results from his orchard, pruning holds great possibilities. Not by pruning alone however, can he hope to accomplish beneficial results but only by an understanding of the conditions of his orchard and the carrying on of all phases of tree culture harmoniously. Pruning is merely one of the important lines to be followed in orchard work.

Colorado. C. A. WARD.

Pruning the Orchard.

In pruning our commercial orchards of thirty-six thousand trees, located in Idaho, we endeavor to develop some fruit the fourth year and increase the amount the fifth season. Trees should yield from two to six boxes to the tree the sixth season. We find our cultivation of sixteen times each season sufficiently effective to grow the trees with such vigor and rapidity as to be strong enough the sixth year to yield a profitable crop.

Figure 4—The same tree shown in Figure 3 after it had been pruned.

In pruning the orchard, the first two years are the most important. The major portion of our western commercial apple orchards are planted with strong one-year-old trees instead of using two, three, four or even five year old trees as was our habit in Nebraska.

Why does the western planter select a yearling tree?

Under irrigation and with the longer season of the inter-mountain basin and on the Pacific coast, a well grown one-year apple tree may have nearly as much vigor as a medium two-year-old tree in the central and eastern states. To select a yearling tree for planting enables the orchardist to prune in a uniform manner and have practically all of the trees headed at the same height. The nurseryman favors the sale of trees at the age of one year because he gets a speedy return for labor and for capital invested. The one-year-old trees can be afforded at a lower price than the older trees.

In pruning the one-year-old tree at time of planting it is well to leave the top bud on the north or northwest side of the tree, to cut the tree at perhaps the height of thirty inches, being governed somewhat by the position of the stronger buds on the trunk of the tree, aiming to grow the first season from three to six shoots to form the branches of the future tree. At the end of the first season it is not well to cut back too close to the trunk. Aim to prune in such form as will develop four, five or six main branches and these so distributed that each branch will have plenty of room to develop. Avoid two branches coming out nearly together, since these forking at one point are liable to cause one branch, when heavily laden with fruit, to split down. Some scientific pruners aim to start the head of the future tree with three main branches.

DE LAVAL Cream and Butter Triumph as Usual At National Dairy Show

Cream and butter produced through the use of DE LAVAL CREAM SEPARATORS made the usual clean sweep of all Highest Awards at the great 1911 National Dairy Show (including the annual convention of the National Buttermakers Association) held in Chicago October 26th—November 4th, just as has always been the case since the organization of the National Association in 1892.

WHOLE MILK CREAMERY BUTTER

The sweepstakes or highest award in this class was won by A. J. Anderson, Otisco, Minn., with a score of 97.50, who says: "I have been using De Laval Separators for ten years and would not think of using any other."

FARM SEPARATOR BUTTER

The sweepstakes in the gathered cream factory made butter class was won by R. O. Brye, of the Readstown Creamery Co., Readstown, Wis., with a score of 97.33, this prize winning butter being made from the cream of farm patrons using De Laval separators exclusively.

Mr. Brye says: "I was raised on a dairy farm, where my father used a De Laval separator, and my own separator experience covers a period of twenty years. I have found the De Laval machines everything that is claimed for them."

HIGHEST PRIZE CREAM EXHIBIT

The highest award for cream was made to Nichols Bros., Bloomfield, Ky., with a score of 98.80, who say: "If we didn't use the best separator we could not have made this record. Our experience has proved the De Laval the only separator that 'delivered the goods.'"

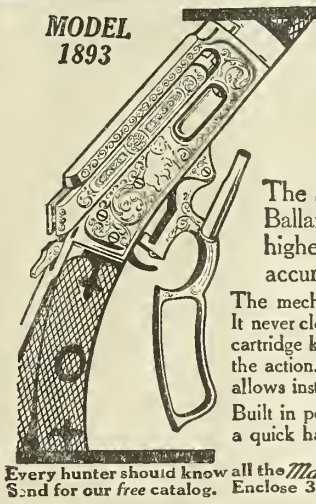
DE DAVAL PRODUCTS ALWAYS SUPERIOR

Would-be competitors are naturally forced to make many claims for their separators. But the superiority of De Laval cream and butter, as evidenced by the winning of all highest prize awards the world over for twenty years, is something so overwhelming as to be indisputable and unanswerable even by the most reckless would-be competitor.

THE DE LAVAL SEPARATOR CO.

NEW YORK CHICAGO SAN FRANCISCO SEATTLE

MODEL 1893



Marlin Big Game REPEATING RIFLES

The Special Smokeless Steel barrel, rifled deep on the Ballard system, creates perfect combustion, develops highest velocity and hurls the bullet with utmost accuracy and mightiest killing impact.

The mechanism is direct-acting, strong, simple and perfectly adjusted. It never clogs. The protecting wall of solid steel between your head and cartridge keeps rain, sleet, snow and all foreign matter from getting into the action. The side ejection throws shells away from line of sight and allows instant repeat shots always.

Built in perfect proportion throughout, in many high power calibres, it is a quick handling, powerful, accurate gun for all big game.

Every hunter should know all the *Marlin* characteristics. *The Marlin Firearms Co.*
Send for our *free* catalog. Enclose 3 stamps for postage. 139 Willow Street New Haven, Conn.

GROW ONIONS $1,624 PER ACRE FROM MY GRANDPA'S PRIDE ONIONS

grown by one of my customers the GILBERTSON WAY! If I can't *prove* this to you, I will pay all your expenses to Mason City and return, no matter where you live! Write for my FREE Book TODAY. I will tell you how you can *average* $400 to $600 per acre *net profit*, every year, on ordinary farm land! I *won't charge you one cent* for this information! Raise GRANDPA'S PRIDE GLOBE ONIONS the *Gilbertson way*, and make a *fortune* from a *few acres*, in two or three years! Write me TODAY!

A. O. GILBERTSON, Krop Krank, Box 768, Mason City, Iowa

Paint Sample Book Free

If you intend to paint anything this season, whether your house, barn, fence or out buildings, or if you need paint for your floor, or for the inner wood work of your home, or if you need paint or varnish for any purpose whatever, before you buy, write us and say *"Send me your special paint color sample book,"* and by return mail we will send you our great paint book which contains over one hundred sample colors of paints and varnishes for every purpose. It shows over sixty color samples of our famous high-grade ready mixed

House Paint at 83c a Gal.

over seventy color samples of our very high-grade fence, roof and

Barn Paint at 43c a Gal.

shingle stain at 45c a gallon, varnish stain at $1.28 a gallon, household enamels at $1.45 a gallon, wagon and implement paint at $1.30 a gallon, carriage paint at $1.63 a gallon, floor paint at 99c a gallon, calcimine at 4 1-2c a pound, and paints and varnishes for all kinds of work at very low prices.

Write for Sample Book

Guaranteed 5 Years

We guarantee our mixed paints not to crack or peel during 5 years of service, (If it should we will furnish new paint free) and a gallon will positively cover at least 250 square feet of surface with two coats. Don't delay, but sit down right now and write for our great paint book, and see the beautiful colors and marvelously low prices, and read our wonderfully liberal 5 year guarantee which protects you absolutely.

JOHN M. SMYTH MDSE CO. 150-243 W. Madison St. Chicago

STOKES' SEEDS

The time to find out about seeds is before you plant—not after. Get as many seed catalogs as you like—but be sure to write for mine. I'll take a chance on being of some help to you.

Write today and mention The Fruit-Grower

Walter P. Stokes, Seedsman
Dept. 30 Philadelphia

A Start in Strawberries

for $1.50 postpaid. Send us $1.50 and we will send you 100 of the best strawberry plants for the Central Mississippi Valley. They are drouth-resisting and will bear when all others fail. Also send for our free booklet, "Strawberries for the Home and How to Raise Them." Order early to avoid the rush.

Dodge, Blachly & Co., Cuba, Mo.

It will be evident, however, that the greatest number of boxes of apples cannot be borne on a three branch tree.

In the orchard of Manville & Hurst, of Idaho, where from trees sixteen years old sixty-two and sixty-three boxes of apples were picked last fall from single trees, we notice the most productive trees were trained with five or six main branches and that the after pruning has been such as to give very large and well branched heads, capable of supporting twenty-five hundred pounds of apples.

At this age of the tree, in pruning it is well to bear in mind the direction from which the stronger winds blow. Near our location they come from the northwest. Aim to save strong buds pushing to the north and northwest, encourage the tree to grow strongly to those directions and lessen the weight of the growth on the other side.

In December of the second years' growth of the trees we again prune, leaving from twelve to twenty inches of new wood. Professors Paddock and Whipple, with long experience in Colorado, advise allowing each shoot to make two more feet the succeeding season and let the tree gain annually about fourteen inches in length of branch. The Grand Junction, Colorado, orchardists allow twenty inches gain in length of branch. The question of how many branches to leave is a matter of good judgment and experience. Aim continually to keep the trees strong to the windward side.

It is our plan at the end of the second season's growth to prune so as to throw the trees into bearing the fourth summer. We should remember the lateral branches are more likely to set fruit buds than upright branches. The tendency of the most vigorous growth is to the terminal shoots of the upright branches. Vigorous growth of upright shoots means wood, not fruit. We therefore leave the lateral branches nearly untouched, ofttimes full length, because under this method of pruning the lateral branches are very likely to set fruit buds the third summer and to fruit with more or less freedom, according to the condition of the tree the fourth season.

At the end of the third year's growth we prune in similar method, leaving yet more lateral wood to set fruit buds the fourth season, and come into bearing the fifth year. In pruning our trees we are careful to leave all short twigs and many of the minor branches within the head since the stronger branches now dominate the growth, take more of the sap and dwarf the inferior shoots. This ofttimes causes these to develop fruit buds and later to develop fruit close to the principal branches of the tree where the fruit can be safely supported, properly nourished and developed.

In the Manville & Hurst orchards, we notice they have been particularly successful in distributing the fruit well over the tree and have developed fruit bearing, short branches and small limbs on the main and minor branches of the tree, the fruit being near enough to the stronger branches to bear very heavy loads without breaking down.

Figure 5—A six-year-old Elberta peach tree before pruning. Orchard of J. W. Chessirs.

It is of the utmost importance that the apple trees should receive annual pruning, otherwise long shoots, four, five and six feet in length may be thrown out. The fruit is ultimately borne away out on these long branches which bend under the great weight and ofttimes break. Trees suffering from this lack of pruning were very noticeable in the Payette Valley in the fall of 1910, when many overladen and improperly formed trees were badly broken.

The Time of Pruning.

Based on our forty years' experience in Nebraska with the largest commercial interests in that state, it has been our habit to utilize all good weather from late November on. The cultivation and care of the trees should be such as to ripen the wood in early October, after which the trees may be pruned whenever dormant or not severely frozen. We prefer late November and December pruning because at that season we are likely to have good weather. Our men all through this last December worked rapidly and with comfort. By the end of December we had pruned our own orchard of thirty-six thousand trees and some four hundred acres for other parties. The deep snow which we now have lessens the ability of the workmen to make rapid progress. When this snow passes away we shall probably have some weeks of deep mud, tiresome to walk through in passing from tree to tree. It is important that the pruning of the orchard should be completed before the sap starts in the early spring and before the busy orchardist is engaged in other work.

Nebraska. E. F. STEPHENS.

Nurserymen everywhere report a heavy demand for Jonathan apple trees for spring planting. Ben Davis is having a fair call, but not as heavy as a few years ago. It is being replaced by apples of better eating quality.

Fertilize for Fruit, Not for Foliage

A study of the formulas of fertilizers often recommended for fruits would give the idea that foliage and rapid growth is what you seek. The most of them lack fruit-producing

POTASH

Any fertilizer for fruits should contain at least 12 per cent. available Potash. The only Potash Salts that are safe for citrus fruits are Sulfate of Potash and Sulfate of Potash Magnesia (*double* manure salt).

Applications of such a fertilizer should begin at planting and continue during the life of the tree. It means earlier and longer bearing, larger yields, better grades and shipping quality, and a hard, solid, growth of wood. In all these ways **Potash Pays.**

If your dealer doesn't carry 12 per cent. Potash brands or Potash Salts, write to us for prices. We will sell any amount from a 200-lb. bag, up. Write now for fertilizer formulas and how to make them for Fruit Culture, and special free pamphlet, *Orange Culture.*

German Kali Works, Inc.

Continental Bldg., Baltimore Monadnock Block, Chicago
Whitney Central Bank Building, New Orleans

DETROIT SPRAYING OUTFITS!

Are the best that money can buy. Sold at lower prices than are asked for inferior outfits.

Power and thoroughness are absolutely essential to success in spraying, and these two features are embodied in the **Detroit Spraying Outfit** to a much greater extent than in any other. Designed by a practical and successful orchardist. Operated by a 4-horsepower **Amazing Detroit Kerosene Engine.** Exceptionally high platform enables you to *get right to the top of the tallest trees* and four full horsepower enables you to

Send for Free Bulletin No. 110 for facts about Profits in Spraying.

Drive the Mixture Right Into the Bark

Embodies every convenience. Pump started and stopped from upper platform. Built on a platform of standard width so that it can be placed on any farm wagon. Also can be used as a portable pumping outfit or fire engine. Engine can be quickly removed and used to furnish power for any other purpose. November to May is the time to spray, and after doing your own trees you and the boys can go out and clean up the cost of your outfit in a week by spraying for your neighbors. Write at once for Bulletin No. 110, giving startling facts in regard to the profits to be derived from spraying, together with full and complete instructions, formula, spraying calendar, etc.

DETROIT ENGINE WORKS

Spraying Dept., Bulletin No. 110, Detroit, Mich., U. S. A.

Be sure to address your letter to our Spraying Specialist

Orchardists, Grow Berries Between Your Trees

The roots of fruit trees occupy only about a quarter of the ground space for the first twelve or fifteen years. No business man would think of allowing three-fourths of his capital to lie idle for that length of time! There is just as good a market for berries as for apples. Strawberries, Himalaya berries, Currants, etc., begin bearing a year from planting. The first crop will give a net profit of from $50 to $400 an acre.

A $1,000 An Acre Berry

The Himalaya Berry plant is a briary vine that does not die down or winter-kill an inch. Shoots grow thirty feet a season. Old and new wood alike bears for a hundred years, and ten tons of rich pulpy berries per acre is the average yield from thirty-months-old plants.

The Best Berries to Grow

Berrydale Experiment Gardens have sifted the merits of hundreds of varieties of berries. The very best dozen or so are described in the Berrydale Berry Book. Himalaya Berry, the greatest money maker, is given special detailed description. Send for our book. Free, if your request comes in time.

Berrydale Experiment Gardens

A. MITTING, Owner
Fruit Avenue, Holland, Michigan

SURE GROW TREES

500,000 Apple, Pear, Peach, Plum and Cherry trees for sale. Berry plants, vines, roses and shrubs.

Thirty-three years of fruit-tree growing enables us to furnish absolutely the best trees money can buy. Green's trees are true to name, hardy and bear such delicious fruit as thirty-three years of the most scientific grafting can produce.

AGENTS PRICES CUT IN TWO **Green's Trees** DIRECT TO YOU.

All we ask is one small profit. This means you get your trees at half what agents charge.

SEND FOR GREEN'S FREE 1912 CATALOG.

It tells you how to plant and care for your trees, and gives other valuable information. If you send now, at once, you will also get Green's Book, "How I Made the Old Farm Pay."

Established 33 years. Capital $100,000
GREEN'S NURSERY COMPANY
Box 4. Rochester, N. Y.

BLACK PEARL RASPBERRY

Now in better condition than any other variety. Try it. Send for free descriptive circular and for catalogue of Small Fruit Plants, Trees, Ornamentals, Asparagus, Rhubarb, etc.

Holsinger Bros., Rosedale, Kansas

Fruit Trees and Small Fruits With a World-wide Reputation for Vigor, Yield and True Species

Largest and most complete collections in America. Strong, well developed trees and plants, free from defects and parasites.

This business, established in 1840, has 72 years of expert propagation and square dealing behind it. This is a guarantee to you of entire satisfaction.

We take extra care in packing and shipping every order—large or small. Goods bought from us will arrive in any part of the country in perfect condition.

Write for 72nd Annual Catalogue

A safe and standard guide to the fruit farmer, and to buyers of Ornamental Trees, Shrubs, Roses, Evergreens and Hardy Plants. Sent free on request.

ELLWANGER & BARRY
Mount Hope Nurseries,
Box 28, Rochester, N. Y.

LARGE STOCK OF
Apple Trees

Apple Seedlings
Shade and Ornamental Trees
Apple Grafts Made to Order
WRITE FOR PRICES
YOUNGERS & CO.
GENEVA, NEBRASKA

1911-1912 CATALOG
OF THE CELEBRATED
MUNSON NURSERIES
DENISON, TEXAS
containing the best selected fruits for the Southwest. Now ready. Send for a copy; IT'S FREE.

Apple Seedlings
Grown on new land from French Crab Seed. Free from Aphis and Knot. Write us for prices, stating quantity and grade wanted.
C. M. Hurlburt, Fairbury, Neb.

Art of Propagation
A hand book for nurserymen, florists, gardeners and fruit-growers. Tells how to grow all kinds of trees from seeds. How to bud, root-graft, transplant, prune, spray and impart information valuable to anyone interested in growing fruits of all kinds. Tells how to propagate apple, pear, cherry, peach, grape vines, raspberries and all kinds of fruit, shrubs and plants. Where and how to get all kinds of tree seeds. Spraying material. How to grow your own fruit trees at a cost of less than 2c each. Is the most complete work of the kind published, and is based on thorough Scientific Methods. Sent postpaid to anyone sending 25c in silver to the
Harbor Springs Nursery Co.
HARBOR SPRINGS, - MICHIGAN

IN EVERY STATE
From New York to California, Dealers Sell and Recommend
PEPSEECO
Alfalfa Timothy Millet — Brand "CREAM of the CROP" — Cane Clover Ky. Blue Grass
PEPSEECO BRAND Seeds are the highest quality money can buy. They are more carefully selected, thoroughly cleaned and rigidly tested than any other and cost *you* no more. Ask your dealer for PEPSEECO BRAND Seeds. Insist on having them. If he can't supply you, write us.
FREE Valuable book containing information about Alfalfa, Clover and other crops. Sent Free for your dealer's name.
J. G. PEPPARD SEED CO.,
1127 West 8th St., Kansas City, Mo.

Look Out For Rabbits and Mice.

Of all the rodents detrimental to fruit trees, the common jack rabbit and field mouse are the most injurious found in Idaho and the far Western states. The damage these animals do is seen here and there on fruit trees of all kinds, especially upon young trees. It is reported from the Ohio Experiment Station, that that state suffers annually a loss of over two hundred thousand dollars from bark-eating rodents. These animals are pressed for food at this time of the year, hence, they seek the orchards more at this time than at any other. The damage that they do is from stripping the bark from young trees and in many cases, completely girdling them, causing their death or necessitating bridge grafting the following spring.

The writer was in one orchard last winter, where every tree had been completely girdled by the jack rabbit. This orchard had no rabbit tight fence around it, neither was the owner in the immediate neighborhood, hence the loss of this orchard. In another orchard was noticed at this same period, the work of field mice under the snow. This orchard was ten years old and has been in sod for the last ten years. The owner had not the least idea that any girdling of his trees was taking place at this time until we made an inspection.

It is always a good idea to see that the ground about the trees for a radius of one or two feet, is broken in the fall and vegetation is removed to destroy the inducement for these rodents to winter over there. A trip through the orchard, by the owner, with an ordinary shovel for removing the snow will soon reveal the presence of such animals at the base of the tree. Such a tour of inspection should be taken several times a month during the dormant period.

There are several mixtures used for repelling the jack rabbit and other rodents, but all have their disadvantages. A rabbit tight fence is the most satisfactory thing against the jack rabbit in this state, but if snow drifts against the fence and freezes, it is not difficult for jack rabbits to get over this. Prof. Ballou, of Ohio, gives the following formula, as an effective wash to protect fruit trees from injury by rabbits, sheep and mice. It is made as follows: Slake one peck of fresh stone lime with old soap suds, thinning to the consistency of whitewash. For the one peck of lime, add one half gallon of crude carbolic acid, four pounds of sulphur and one gallon of soft soap. Paint the trunks of trees with this in late autumn.

W. H. WICKS.
Idaho Experiment Station.

How to Ripen Green Tomatoes at End of Season.

The first killing frost occurred here Sept. 22, yet we ate fresh ripe tomatoes until Thanksgiving. Here is how we manage: As soon as plants are killed by frost all ripe tomatoes are picked, the vines are pulled and piled in loose piles two or three feet high. This protects from hard freezing, and all mature fruits will ripen very nicely, when they may be gathered and stored in a cool, dark cellar for future use. In this way we have extended the season for this most luscious of garden products fully two months.

Washington. J. D. YANCEY.

Don't wait any longer before looking over your spray hose and machine. Get the hose patched up now and have it in readiness for the application you will make next month.

The fruit growers in the vicinity of Washburn, Wis., are reported to have bought 30,000 fruit trees for planting next spring.

Figure 6—The same peach tree shown in Figure 5, after it has been pruned. Observe how the branches have been thinned out and the long growth shortened.

BAUER'S FAMOUS SOUTHERN GROWN Berry Plants

are Grown Below the Blizzard Belt Line
Our plants are hardy for they are grown without any protection and they come to you with nice glossy leaves; not just a little tender heart as the mulched plants have. When you break that heart your plant is gone. Our plants cost you no more than this tender Northern-grown plant and will arrive in nice growing condition. Get my book,
How to Grow Strawberries
It tells the facts of strawberry growing from start to finish. This book is one that I wrote myself and I am a strawberry specialist; at it thirty-two years. Copy free to you.
J. A. BAUER
BOX 15 JUDSONIA, ARK.

Strawberry Plants A Specialty
We have them in large quantity and can fill orders promptly. Our plants are of first quality and guaranteed to please you. Prices $1.50 per thousand and up, so do not overlook us, but ask for a copy of our two-color catalog.
O. C. Waller, Box 8, Judsonia, Ark.

Strawberry Plants THIRTY Varieties
The best collection obtainable. Varieties of all seasons and adapted to all sections of the United States. We have what you want, ask for our descriptive catalogue and price list.
D. McNallie Plant and Fruit Co., Sarcoxie, Missouri

PRICES RIGHT—FREE CATALOGUE—NO AGENTS
Three Hundred Acres of All Kinds of
SMALL FRUIT PLANTS
Most complete assortment in America. Guaranteed true to name. Wholesale and Retail.
SELIGMAN PLANT CO. SELIGMAN, MISSOURI

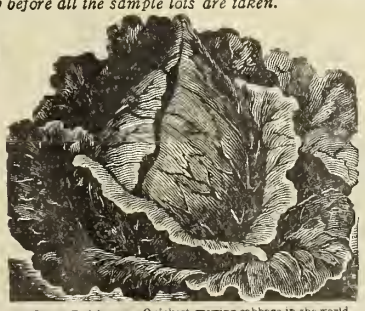
Rocky Ford Cantaloupe Seed
The difference between a good and a poor cantaloupe crop is very often a matter of whether you planted good seed or not. I am the grower of the best solid net rust-resistant, thick-meated Rocky Ford cantaloupes you ever saw. I won first premium on Rocky Ford cantaloupe at the Arkansas Valley Fair at Rocky Ford and Colorado State Fair, Pueblo, 1910-1911. I guarantee satisfaction. $1.50 per lb., 10c packet. Booklet Free.
R. H. JAMES ROCKY FORD, COLO.

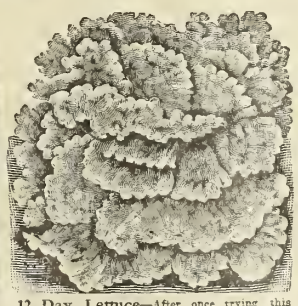
100 PAGE SEED BOOK FREE
SEEDS
Send a postal to-day for our 100 Page Beautifully illustrated catalog of genuine seed bargains, mailed FREE to any address.
ARCHIAS' SURE SEEDS
Plants, Shrubs, Vines, Bulbs, Fruit and Fancy Trees, have been tested for over 25 years; they are Money Growers, and Mortgage Lifters, and the best that money can buy. Write at once—we can save you money.
$100.00 Cash GIVEN AWAY
Archias' Seed Store (Corp.)
Box 8 :: Sedalia, Mo.
SURE SEEDS TRADE MARK ARCHIAS SEED STORE FOUNDED 1876 SEDALIA MO.

SEEDS OF ALL THESE VEGETABLES GIVEN AWAY FOR TESTING
WE want every reader of this paper who has a garden to TEST these 6 splendid new vegetables. We know they will give such wonderful results that they will make thousands of new customers for us, and all we ask is for you to send your address at once plainly written on a Postal Card and we will mail you these 6 sample packets absolutely FREE for testing. *Do it today before all the sample lots are taken.*

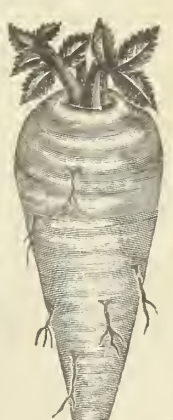
Giant Climbing Tomato—Most wonderful tomato we ever knew. Climbs trellises 12 to 20 feet. Fruits often weigh 3 lbs. each, very smooth and solid, few seeds, handsome red color.

Fancy Pickles—Here is a cucumber to be proud of. It is a marvel of beauty, grows very quick and just right size for pickling. You should grow this excellent variety.


60 Day Cabbage—Quickest growing cabbage in the world. Heads quick, very solid and splendid quality. Try it and you will say it is a wonder.


12 Day Lettuce—After once trying this variety you will say it is the quickest grower on record, always very tender, crisp and sweet.

15 Day Radish—A wonder for quick growth. Will produce radishes fit to use in 15 days. Is very crisp and tender, scarlet color.


New Sugar Parsnip—Very best variety for home gardens. Roots large, very smooth, flesh fine-grained, and excellent quality.

Remember we will send a **Sample Packet** of all these 6 varieties of SEEDS absolutely FREE to every reader of this paper who has a garden and will test them. Several dollars worth of vegetables can be grown from this lot of seeds. Write your name and address plainly on a Postal Card and it will bring them.

Our 1912 CATALOGUE of Vegetable and Flower Seeds, Plants, and Rare Fruits with our Special Bargain List with Color Plates, will be sent FREE with every lot.

Address—MILLS SEED HOUSE, Dept. 24, ROSE HILL, N. Y.

AN AMATEUR'S GARDEN

This letter is sent to us by Henry Field, the seedsman, and is one of the many received by him in his garden contest:

Last fall we moved to a new location in the city from a suburban home, and the city lot seemed very small and cramped to us, as we had been used to plenty of room. In fact we have only a small back yard, about 10x47 feet in dimensions. The party we bought out however, had a chicken yard entirely enclosed with 4-foot chicken wire fencing, about 25x50 feet in size. Part of this chicken yard is located on a back lot, but most of it is in the side street, which has not yet been opened up. This yard was full of brush and small stumps, and the ground, almost every inch of it was full of roots as large round as your little finger, many of them larger.

I had a strong case of "back to the soil" fever running in my veins however, and I concluded I must have a garden and despite the difficulties which loomed up, I got busy. The way I grubbed with the mattock and axe, and spaded and pounded and hoed and raked that ground was a sight that made my city neighbors grin and comment aplenty about the new "farmer" in their midst. But I didn't mind, and kept right on. As fast as I got a little patch subdued I made a little bed or row and planted it out. But first I dug a six inch trench all around inside of the 4-foot chicken wire fence, and planted in the bottom of the trench a choice lot of mixed sweet peas, making about 150 feet of them. These were planted about the middle of March. My wife and children love sweet peas, and I was determined to have sweet peas in plenty, and I did. As it turned out, I planted better than I knew.

Of course, the first plantings in my garden were radishes, lettuce, English peas, onion sets and spinach. Then quickly followed the beets, carrots, salsify, cabbage and cauliflower, and celery plants and turnips, more radishes, more onion sets; then the corn, beans, tomato plants, parsley, cucumbers, okra, and more cabbage and cauliflower plants. Also a bed outside the fence of flowers, such as asters, poppies, pansies, hollyhocks, petunias, cosmos, etc. My corn, cucumbers, pole beans and some other items were planted in small patches on either side, and at one end, outside the chicken yard fence.

I have cultivated my plants often and have watched and tended them carefully. I have used about 5 wheelbarrow loads of chicken manure and about the same amount of half rotted manure from the horse stable.

In the early spring we had plenty of rain and frequent showers. During July and August we had very little moisture from above. Then I had access to the city water hose, and used it as often as needed between cultivations. Of course without this help from the city water my garden would not have been as productive as it has been, as we have had an unusually dry summer.

As fast as my beds were emptied of their crops I replanted them, thus getting from two to four crops off of my ground. One thing that induced me to have a garden this year was the condition of my health. I have been a sufferer from stomach trouble and indigestion for years. I am a printer, and my work is confining and injurious; so I concluded to tackle the garden and get "next to nature," mornings and evenings and odd days when I would be laid off.

Did the end justify the means? Well, I think yes! I believe I would have been bed-fast early this summer, had it not been for the strenuous out door exercise I have had in that little garden. Possibly it even saved my life. And then it has been worth so much to me in the way of having the fine fresh vegetables for my large family and myself to eat. Of course, we could have bought them from the wagons and grocers, but not such vegetables! You can seldom buy them under 24 to 48 hours old, sometimes older, and then you take long chances on getting good stuff, for the grocers and hucksters will work off the oldest and worst on you first, if they can.

Now, I have kept strict record of the production from my little garden, and I am astonished at the actual results. But still I am sure that I could, by careful attention, and by profiting from the experience gained this year, accomplish at least 50 per cent better results next year on the same ground. Just think of it, a plot of ground 30x60 or 1800 square feet has produced under my amateur efforts at the rate of over $800 per acre. Under expert methods I am sure the yield would have been more than doubled. It proves to me that if the owners and renters in the homes of the cities and towns of this country would only utilize their back yards and vacant places all around them, which their owners would gladly give them the use of, this question of the high cost of living would come much nearer being solved than it is. And another most important benefit that would accrue is the matter of increasing the good health and happiness of the garden makers and their families.

In addition to the work in my garden, I have taken care of a fine lawn in my front yard and a beautiful row of nasturtiums on the front porch, besides several beds of pansies, poppies, asters and other flowers and vines. And in the back of my lot I have put in some good hard licks on a new strawberry bed. I ordered 30 plants of Field's "Senator" for a starter and they sent me 50; 45 of these lived and made fine plants in spite of their long journey by mail. I am allowing only enough runners to grow to make 150 strong plants in all, and next spring we will have all the strawberries my large family can use, and then plenty to can besides. For strawberries are our favorite fruit and I never ate any canned berries like my wife can can! Her's always have the exact flavor and color.

Oregon. JAMES KIBBEE.

Maggots.

There has been no more troublesome insect affecting garden crops than the root maggot this past year. Unfortunately there is no treatment that will insure complete success. It is suggested that the ground where the plants were affected be thoroughly cultivated during the fall to destroy the grubs of this maggot in the ground where they stay to pass the winter. The insect that occasions this trouble resembles closely the common house fly, but is somewhat smaller. In some districts it is the commonest fly to be found in houses. Treatments of the soil with wood ashes, lime, etc., are usually not very successful and hardly pay for the trouble to apply them. Some success has been had by treating the soil with tobacco or kerosene emulsion early in the spring. The object of this is to deter the flies from laying their eggs in the protected places. Growing plants under muslin cover early in the season will, of course, keep the flies away, and in some districts is extensively practiced. Cabbages can be protected by placing a three-inch disc of tar paper as a collar around their stems at the time of setting out. Spraying the soil about the plants several times during the early summer with carbolated lime is perhaps the best remedy. This spray can be made by adding an ounce of crude carbolic acid to ten gallons of milk of lime.—Washington Exp. Sta.

Oyster shell scale attacks apple trees, causing considerable injury to the trees. When the young scales hatch in early spring give the trees an application of kerosene emulsion, or spray them with lime-sulphur before the blossoms appear.

No-Rim-Cut Tires
Proved Average Oversize, 16.7%

Goodyear No-Rim-Cut tires are advertised as 10 per cent oversize.

We claim that this oversize adds 25 per cent to the tire mileage.

Lately we made a comparison, based on cubic capacity, with five other leading makes of tires.

And No-Rim-Cut tires, on the average, proved 16.7 per cent larger than the other tires of equal rated size.

Only three tires out of 20 comparisons came within 10 per cent of our size.

That means in air capacity, not in mere outer measurements. It is air that carries the load.

Each one per cent oversize means one per cent extra carrying capacity.

Oversize means to save blowouts—to increase the tire mileage—to cut down tire expense.

And you get this oversize in No-Rim-Cut tires without any extra cost.

That is one of the reasons why these patented tires now far outsell any other type of tire.

Adopted by 127 Leading Makers

For the year 1910, 44 leading motor car makers contracted for Goodyear tires.

For the year 1911, 64 makers came to them.

For this year we have contracts from the makers of 127 leading cars.

That shows how car makers—the men who know best—have come to the Goodyear tires.

Last year our sales exceeded the sales of the previous 12 years put together.

We sold enough tires in 1911 to completely equip 102,000 cars.

In two years the demand for No-Rim-Cut tires has multiplied six times over. Now these tires are by far the most popular tires that are made.

Thousands of users told thousands of others that these patented tires cut their tire bills in two. The resulting demand now compels a capacity of 3,800 tires daily.

Save One-Half

The saving comes here:

No-Rim-Cut tires make rim cutting impossible.

With the old-type tire—the clincher tire—23 per cent of all ruined tires are rim-cut. That is proved by actual statistics.

A punctured tire may be wrecked in this way by running 200 feet. A soft tire may be wrecked without puncture.

No-Rim-Cut tires save that ruin and worry.

Then 10 per cent oversize, under average conditions, adds 25 per cent to the tire mileage.

It means an over-tired car to take care of extra weight. It saves the blowouts due to overloading.

And No-Rim-Cut tires, as told above, average 16.7 per cent oversize.

These two features together—No-Rim-Cut and oversize—under average conditions cut tire bills in two. Tens of thousands of motor car owners have proved that.

No Extra Cost

These patented tires used to cost one-fifth more than other standard tires. Now they cost an equal price.

These tires which can't rim-cut cost the same as tires that do. These oversize tires cost the same as skimpy tires.

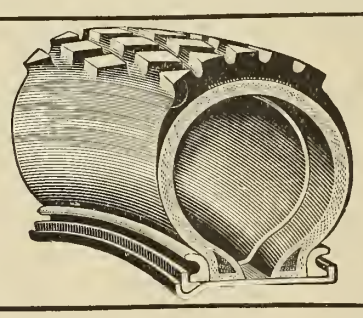
You can get them by simply insisting on Goodyear No-Rim-Cut tires.

These tires represent the final result of our 13 years spent in tire making.

In every way they are as near perfection as tires can ever get.

They will mean to you an immense reduction on the upkeep of your car.

Our new Tire Book is ready. It is filled with facts you should know. Ask us to mail it to you.



GOODYEAR

No-Rim-Cut Tires

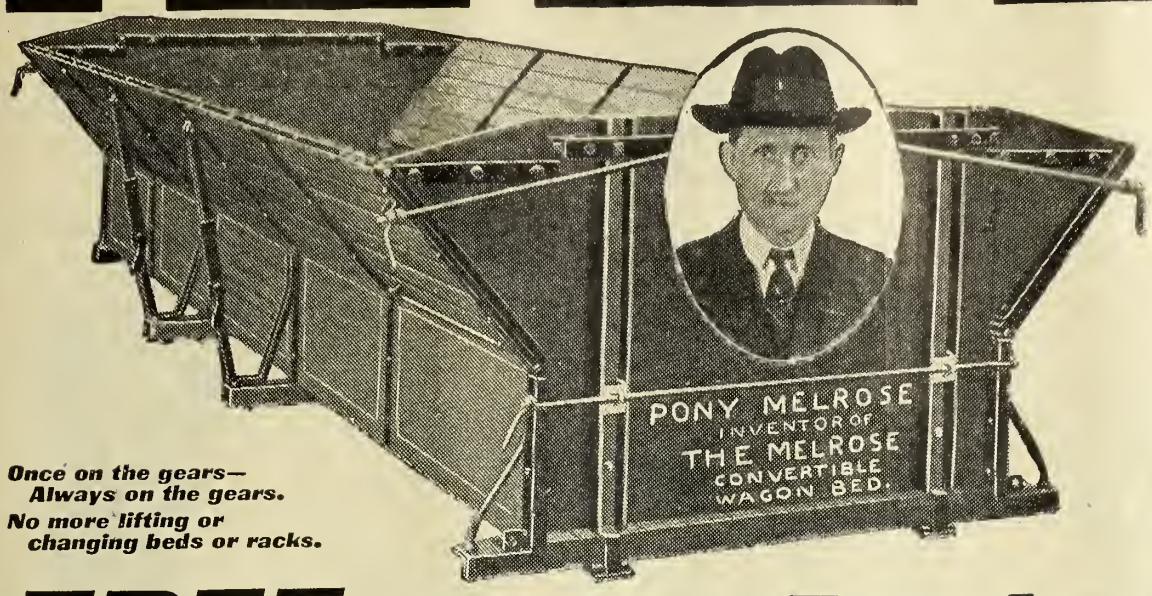
With or Without Double-Thick Non-Skid Treads

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

Branches and Agencies in 103 Principal Cities. We Make All Kinds of Rubber Tires, Tire Accessories and Repair Outfits

[461]

A New Farm Invention!



Once on the gears—Always on the gears.
No more lifting or changing beds or racks.

Fifteen wagon beds in one. Nothing to be taken apart. No tools needed. No fussy fixings to get out of order. Takes but one minute to change from ordinary, grain-tight wagon box to stock bed, hayrack, poultry bed, or any other of 15 daily farm uses. Mere boy can make any change without assistance. Cannot bind, warp or spring. Guaranteed for five years. Costs little more than ordinary single-purpose bed. Sent freight prepaid to your farm on 30 days' absolutely free trial. Read this man-to-man, honest, straightforward, factory-to-farm offer, —and send the coupon today.

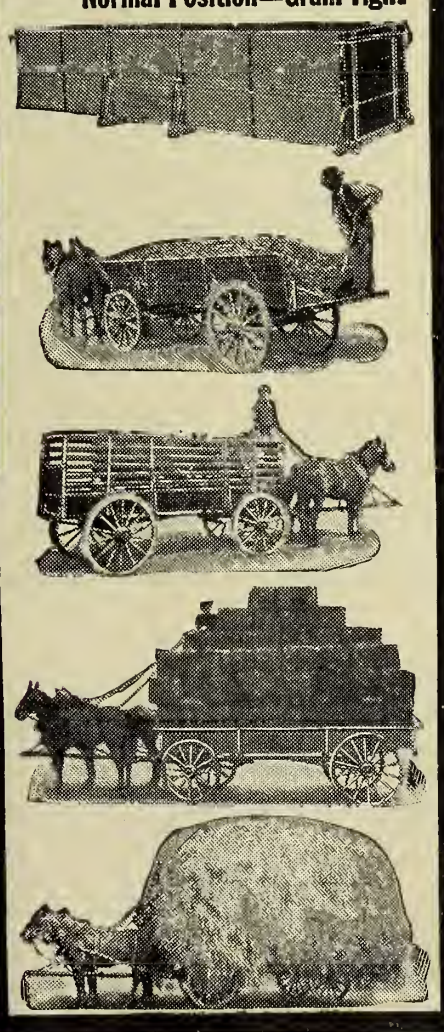
FREE 30-Day Trial on Your Farm

Not One Penny Down—Freight Prepaid—Send Coupon Today

I am willing to prove in actual, daily service right on your wagon gears—for one whole month—the strength, utility, convenience and saving of time and money this new invention will bring to you before one penny need be paid to my company. I do not ask you to deposit money at your bank, or anything of that kind. There are no "ifs" nor "ands" about this proposition—no red tape—no lawyer-drawn, long-winded contract—absolutely nothing to sign but the little coupon below. I want you to understand that to an honest farmer I will come all the way, and pay the expense of giving you absolute, daily-use proof. Take the ***Melrose Convertible Wagon Bed*** out on your farm for 30 days. Use it just as hard as you like. Test it—try it—prove it. When the month is up, and you like it, just write and tell us that you would like to keep it at our special direct-from-factory-to-farm price. If it does not come clear up to your expectations, send it back, freight collect. On this proposition you positively cannot lose a single penny. And I am safe in making such a sound, liberal offer—because ***I Know the Melrose Bed,*** and I feel sure what your decision will be. You have been wanting a ***practical, reliable*** convertible wagon bed for years. The ***Melrose*** price is but very little more than for a good single-purpose bed — it has solved the problem. Use the coupon below. Sign and mail it right now. Don't think of turning this page until you tear out coupon, take a pencil, sign your name and mail it.

15 Wagon Beds in One=Guaranteed for 5 Years

First Illustration Shows Bed in Normal Position—Grain Tight



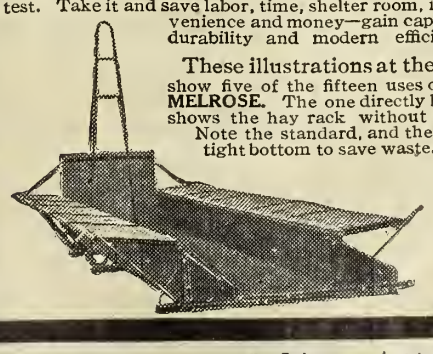
Common Wagon Bed
Hay Rack, with Standard Stock Bed
Hog and Sheep Bed
Poultry Bed
Flared Sides Corn and Grain Bed
Special Straw or Fodder Bed
Cord Wood Bed
Dump Endgate Bed
Coal Bed
Marketing Bed
Corn Gathering Bed
Vegetable Bed
Fertilizer Bed
Party Bed

Figure out in dollars and cents just what these beds would cost you if made separately for each use. Then compare the total with the cost of the **MELROSE**, which is but very little more than that of any first-class single-purpose bed.. Add to this saving the fact that the **MELROSE** is the strongest, most durable bed ever made, and that it

Takes But One Minute To Change For Any Use

There are no ratchets, springs, cogs or complications of any kind or character. You need no wrench, keys or tools—only your hands. It is simplicity itself, and can be operated by anyone, anywhere, any time.

One of my customers, hauled 7,260 pounds of coal in a ***Melrose*** bed. It broke the axle of his wagon, but positively did not twist, spring nor injure the bed in the slightest degree. It will hold and carry over 100 bushels of shelled corn—48 bales of hay—4,800 pounds of loose hay—two full-sized cows or bulls, etc., etc. I state these facts simply to prove the strength and capacity of the ***Melrose Bed.*** Take it on your farm and make the test. Take it and save labor, time, shelter room, inconvenience and money—gain capacity, durability and modern efficiency.



These illustrations at the side show five of the fifteen uses of the **MELROSE.** The one directly below shows the hay rack without load. Note the standard, and the seed-tight bottom to save waste.

Do not confuse the ***Melrose Convertible Bed*** with the heavy, bunglesome, crude and awkward contrivances made simply to sell. The **MELROSE** is absolutely unlike in every respect any and all other convertible beds or racks—**As different as black is from white.** It is guaranteed for five years—a straightforward, above-board, honest-purpose guarantee that means just what you want a guarantee to mean.

The bed is built of selected long leaf hard pine, double kiln dried. Not a nail in it. Bolts are used instead. All metal is cold rolled steel—the strongest metal known—absolutely unbreakable. Not one ounce of cast iron used. Braces on sides and ends full galvanized to prevent rusting. Steel sills, steel bracket and telescope braces throughout. It positively cannot bulge, warp or spring. It will carry any load any team can pull. And a boy can convert it from a grain-tight box bed to a hay rack, stock rack, coal bed, etc., in one minute, without assistance. He can go to town with a load of straw, cord-wood or pigs, and return with screenings, fertilizer or sawdust.

The **MELROSE** is endorsed by United States Government Agricultural Experimental Stations from 27 states, as one of the greatest cost-saving, labor-saving, result increasing inventions ever produced. I will send copies of these letters upon request. I will also send collection of farmers' endorsements, complete detailed description of all parts and uses, together with large illustrations drawn from life and actual service upon the farm.

As the greatest exclusive wagon bed manufacturer in the world, I am making you a square, sound, man-to-man business proposition that will permit me to prove the **MELROSE** to you. Please fill out this coupon and mail it today. Address me personally and I will see that immediate shipment is made. Make the test.

PONY MELROSE
Inventor of the Melrose Convertible Wagon Bed.

The American Wagon Co., Dept. 1225 112 W. Adams Street Chicago

Freight Paid—Month's Trial Coupon

The American Wagon Co., Dept. 1225, 112 W. Adams St., Chicago, Ill.

Gentlemen: Ship me, freight charges paid, one of your Melrose Wagon Beds (size indicated below). I will use it for a month on my farm. If I like it I will pay you as per below. If not I will ship it back to you freight charges collect. (Note—This special offer of Prepaid Freight applies to all points East of Missouri River.)

Indicate by an "X" in the square opposite size desired.

[ ] Length 9½ feet, width 38 inches
[ ] " 9½ " " 42 " $31 00
[ ] Length 12 feet, width 38 inches
[ ] " " " 42 " $33.00
[ ] Length 14 feet, width 38 inches
[ ] " " " 42 " $35.00

Name _____

Town _____

County _____ *State* _____

American Wagon Company, Chicago, Ill.
Dear Sirs: You ask me to use your bed for a while and then tell you how I like it. I don't have to use the bed. I saw my neighbor, Billie Ewing, using one and I asked him at first sight where he got that bed, and he said he got it of your Company, and I told him I never heard of one, but I was sure it was just the thing for a farmer or anybody that has hauling of any kind. I will tell you what the first thought was that struck me. I have got two farms, and the buildings are about half a mile apart and hired men will spend 60 days in the year, running back and forth helping each other change the wagon beds and racks which I have got four different kinds of racks for each wagon, and pretty near have to answer for everything, so to make a long story short, don't ask me to make a price on the Melrose Bed of its real worth or some one would say he does not realize. Let me figure with them for just one year's changing. I have a few enterprising farmer friends that I am sure will buy a Melrose Bed as soon as they see the two I am getting.
Forever yours,
Monticello, Ind. OREGON ELDRIDGE.

American Wagon Company, Chicago, Ill.
Gentlemen: I received the Wagon Bed all right, and am very well pleased with it. It is everything you recommend it to be. There can be a lot of them sold up here, as everybody that sees it thinks it is fine.
Hannaford, N. D. WALLACE J. SINCLAIR.

American Wagon Company, Chicago, Ill.
Gentlemen: Answering yours of the 13th inst., will say we have the wagon box put together properly and have used it for the past week, hauling cows, pigs and baled hay, and so far it has been equal to all that is claimed for it. It certainly is a practical, useful, convenient, labor-saving wagon box.
Lincoln, Neb. J. K. HONEYWELL.

American Wagon Company, Chicago, Ill.
Gentlemen: That Melrose Convertible Wagon Bed arrived here O. K. and it is a jewel. Enclosed find check, for which please balance account and oblige.
Brownsville, Wis. W. H. STEINER.

American Wagon Company, Chicago, Ill.
Gentlemen: Your favor of the 21st is at hand, and note you request us to let you know what we think of the Melrose Bed. We will say this, it is just what every farmer needs and our order speaks for itself, and on receipt of this letter you may ship us one bed twelve feet long, forty-two inches wide.
Rushville, Ind. ONEAL BROTHERS.

American Wagon Company, Chicago, Ill.
Gentlemen: In reply to yours of recent date, will say that I received wagon bed in good shape and am well pleased with it. I could not afford to be without one for double the amount, and find in it all you claim for it.
Modesto, Ill. HENRY PINKERTON.

LIME AND COVER CROPS

A Scheme For Overcoming the Evil Effects of Clean Cultivation in Eastern Vineyards

While the rest of the February number of The Fruit-Grower is devoted to the delights of the poultry and gardening number features, I wish to take this little corner to again ask the attention of the readers to the grape belt of the Lake Erie Valley in Western New York, where there is a strip of territory, not large, but beautiful and profitable in the glory and abundance of its grape vineyards, and call the attention of the growers of other fruits, and of grapes elsewhere to some facts which have been demonstrated beyond question here by these grape growers; facts which every fruit grower must come to know, appreciate and practice before the full measure of successful fruit growing can be reached anywhere. The successful fruit grower has excellent opportunities to be a successful poultryman in a small way. He has also, exceptional opportunities for the successful practice of gardening and truck growing, selecting those crops whose times of harvest and culture do not interfere with his main crop. There is some reason for one or both being combined with fruit growing, especially if the fruit culture is specialized, for the raising of but one money crop leads to a decided money shortage between times, and the product of a productive hen-yard comes mighty handy when the hired man wants his money, or the Missus wants a new dress.

But better than either a hen-yard or a truck garden is a closer, more intelligent and more thorough attention to his main business, which is the production and marketing of fruit at a profit, particularly if either is likely to distract his attention. And when we say "at a profit," what a wide open door of opportunity for work is opened to us.

This, however, is not to be a volume, nor an encyclopedia, so all but a few of the wide open opportunities will be passed by for this time, and attention centered upon two details of fruit growing methods which the grape growers of New York have tried out, and found successful in a measure not reached by fruit growers in general, and only by some of the more advanced and specialized growers of fruits anywhere. This is the very general use of leguminous cover crops, in connection with clean cultivation, and the use of lime.

Grapes, from the very nature of the plant, have required and have had from the beginning of vineyard culture here in the grape belt clean cultivation. There had been no allowing of vineyards to grow to sod. The sod mulch theory has never had any adherents. There have been very many vineyards, it is true, where cultural methods have been very lax, where a perfunctory cultivation and horse hoeing in the spring, has gone for the "clean culture" which the vineyard owner knew was necessary. Unlike orchards of cherries, peaches, plums and particularly apples, which until very recently have generally been allowed to sod over, and become pasture or even cropped for hay, throughout this section, the vineyards were cultivated, and have produced good crops. While the apple orchards have gone to ruin, the cherry trees died from black knot, and other diseases; and peaches and plums, except where some fruit man with the modern knowledge of cultural necessities took hold, have also gone to ruin, the vineyards have turned out profitable crops.

The grape is a plant which requires almost individual attention. There are few plants which will respond more readily to care, culture, pruning, training and feeding. From the grape many lessons in fruit growing are to be learned, and many lessons have been learned. Cherry and peach orchards are springing up in profusion and profit through the grape belt; old apple orchards are being rejuvenated, and a limited planting of new are already in progress, as a result of the lessons learned from the vineyards.

But you will note that while the necessities of grape culture has taught the Lake Erie Valley fruit growers the necessity for culture, it did not teach them the necessity for the cover crop. And the study of what happened because of this error, this mistake, forms an object lesson which no fruit grower should neglect. The use of cover crops in the vineyard was a practice confined to very few growers ten years ago, and hardly more even five years ago. The vineyards were cleaned out in the spring, plowed, cultivated, and even hoed, just as late as the implements could be kept at work. Kainit, or some fertilizer rich in potash, was freely used by many. With thirty to forty thousand acres of vineyard, in almost a solid block, with almost no dairying, and no cattle raising except for milk, manure could not be secured. What was the result?

During the half decade mentioned, from ten to five years ago, 1901 to 1906, in spite of steadily increasing acreage, the annual output of grapes steadily declined. It was figured that the production of grapes per acre declined in that period at least thirty per cent. The situation became so acute that after having the best horticulturists in the state sent here for several years without result, a united effort was made five years ago to secure an experiment station. The effort succeeded. The station was established, and work begun along three lines; first, a systematic study was made of insect enemies; second, a systematic study of fungus and bacterial diseases; and third, a systematic study of soil and cultural conditions. Much as has been done in the two first named lines of work, it is in the latter section that the real results have been obtained.

Summarizing in a few sentences what was learned by the preliminary survey of conditions, we will be ready to get down to details of how these conditions are being corrected. It was found that twenty years of clean cultivation, without manuring or the turning under of sod or green crops of any kind, had done just what any "old farmer" could have predicted from the first, but which these grape growers thought that they in some mysterious way were to escape—namely, the almost complete burning out of the organic matter in the soil, the compacting of the clay soils until they were almost unworkable, and the depletion of the gravel soils until even they were in little condition for vineyard growth. The vines weakened and wherever this system had been followed were found to be easily falling the prey to insect and fungus enemies. Constant culture, constant exudation, constant draining of plant food by the strong growing vines, with no return to the soil except in the form of commercial fertilizer, and that weak in nitrates, because of their high cost, and no return of humus had brought about a condition which

National Plant or FLOWER POTS

U. S. Patent No. 906,674, Nov. 24, 1908. E. Bierwirth, Patentee.
A Paper Flower Pot! A Money Maker! A Money Saver! THE IDEAL In REALITY. It has no superior and is the best friend of all who use any kind of Flower Pots for Plants to be transplanted, started in Greenhouses, Hotbeds, etc. A sample (folded and boxed), and circular sent on receipt of 10 cents. Address
National Paper Box Co., Kansas City, Mo.

Pomeroy—Actual Size

Hardy English Walnut Trees

Rochester Grown—
Hardier Than Peach Trees

FOR THE LAWN, the English Walnut is unmatched, with its smooth, light gray bark, luxuriant, dark green foliage, lofty, symmetrical growth. Grafted on Native Black Walnut, these trees are hardier than the Peach.

PLANT FOR PROFIT TOO. There are big profits in English Walnuts. California crop exceeded its orange crop in money value. The market is big and prices high. Cultivation, harvesting and maintenance are easy and inexpensive. Send for free catalog.

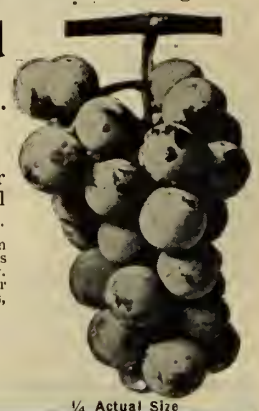
New Catawba-Concord Grape

A complete union of the grand old Catawba and the ever popular Concord.

A Grape for Everybody—Everywhere

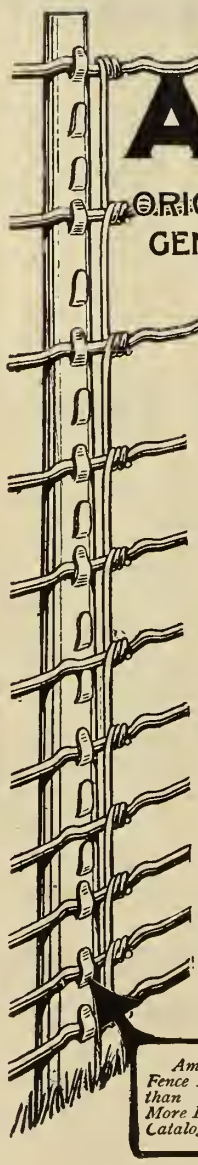
A grape of rare superiority—for the garden arbor or for the market grower. A heavy and early annual yielder. Vine of extreme vigor, free from rot or mildew.

Berries are a rich, sparkling red, highest quality—equalling the Catawba in tenderness of pulp, sweet luscious flavor and aroma, with added sweetness and juiciness—more luscious than Catawba. A superior shipper and keeper. Catawba-Concord has been given 10 years of the severest kind of test—never petted. **Catalogue describing this, and hundreds of other plants, trees, roses, mailed on request.**



¼ Actual Size

GLEN BROS. Glenwood Nursery
Established 1866
1917 Main St., ROCHESTER, N. Y.



AMERICAN FENCE & GATES

ORIGINAL & GENUINE

FARMS fenced with steel have practically no waste. Corn, fed to the lard hog; barley fed to the bacon hog—hogs that are grown the country over—bring dollars from packer and butcher. Double your pork production without increasing the cost. Use alfalfa, clover, peas, root crops, all raw products of the farm. A liberal equipment of woven wire fence allows the hogs gradually to clean up field after field, adding to their weight without effort and without price. See the nearest dealer in American Fence.

AMERICAN FENCE is made of large, stiff wires, galvanized heavily, having the American hinged joint (patented), a fabric most flexible and wear-resisting. Square mesh fence of weight, strength and durability—three great needs in farm fences.

Dealers in Every Place

where farm supplies are sold. Shipped to them direct from mills in carload lots, thus saving freight charges and enabling dealers to sell at lowest prices, giving buyer the benefit.

American Steel Fence Post Cheaper than Wood and More Durable. Get Catalog.

Send for copy of "American Fence News" also book "How to Make the Farm Pay," profusely illustrated, devoted to the interest of farmers and showing how fence may be employed to enhance the earning power of a farm. Furnished free upon application.

F. Baackes, Vice Pres. & Gen. Sales Agt., AMERICAN STEEL & WIRE CO. Chicago, 72 Adams St.; New York, 30 Church St.; Denver; U. S. Steel Products Co., San Francisco, Los Angeles, Portland, Seattle.

$29.50 Buys This Elegant Top Buggy.

WARRANTED FOR Five Years.

Retail Price $60.00. Buggies, Surreys, Spring Wagons, Farm Wagons. We have cut out our Jobbers, our Wholesalers and our Retailers and offer YOU their profit. Write today for our

Free Catalog and Delivered Prices.

Mutual Carriage & Harness Mfg. Co.
Station 35G East St. Louis, Ill.

How to Entertain Book with 250 Jokes and Riddles, 73 Toasts, 67 Parlor Tricks, 8 Fortune-telling Secrets, 52 Money-Making Secrets, 22 Funny Readings. All 10c Postpaid.
J. C. Dorn, 709 S. Dearborn St., Dept. 42, Chicago, Ill.

Coyne Brothers Handle All Kinds of Fruit and Produce
160 Water Street, Chicago, Ill.

no doubt exists today in many other fruit plantations besides those of the grape belt, and to which attention must be called, if the fruit industry is to be put back on its strong foundation of profit and permanence.

Some of these Lake Erie vineyards had been "brought back" some years ago by the use of nitrate of soda, and this gave the key to what followed. Vineyards severely pruned and treated with strong applications of nitrate had in the first year made sufficient new growth to rank as almost new vines, and the second year began to produce good fruit and good wood growth. The same vineyards produced a rank growth of weeds, etc., and these were turned under. The improvement in the soil was noticeable at once and it did not take the scientific men at the head of the station long to put these things together and the results soon became apparent. If nitrogen was needed and humus must be had, and still manure could not be got except in comparatively small quantities then nitrogen and humus must be raised and turned under. That was all there was to the answer. The best part of it is that it worked.

"Plant legumes" was the first order, but it only took a brief time to show that much of the vineyard soil was so poor that the legumes, particularly crimson clover and giant clover which were first tried, would not do as well as would be required to get adequate results. "Well, if clover will not grow then find something that will" was the next command, and the resulting experiments has covered a wide range. Among cover crops tried out under all conceivable circumstances were Canadian peas, cowpeas and even common peas, both with and without oats, barley, rye and wheat; buckwheat, oats and cowhorn turnip; also cowhorn turnip with the clovers and with rye, barley, etc., soy beans and winter vetch are also among the newer crops tried. The use of good strong applications of "floats" and of acid phosphate, also of complete fertilizers, applied with and directed to the growing of the cover crop has been largely tried. But perhaps most important of all has been the use of lime in generous applications with the cover crops directed both toward improving the physical conditions of the soils, and toward the establishment of the alkaline conditions favorable to the growth of the legumes.

This general turning toward cover crops and the use of lime has already had a very wide general result. The crop of grapes harvested in 1911 was the largest which was ever grown in the grape belt, going over 8,000 carloads, an advance of more than a thousand cars over last year, and at least thirty per cent above the ten years' average. It is not correct to attribute all this increase to improved conditions due to lime and cover crops, but at least a part can be so attributed. At the Fredonia Experiment Station a yield of five tons of grapes per acre was harvested in 1911, and sold at top market prices. This is a maximum crop. Here the cover crop and lime, with thorough cultivation, has had its most thorough three-years' trial of anywhere in the grape belt.

As to specific results between the different cover crops, it is hard to speak as yet. The most promising crop yet tried seems to be the "hairy" or winter vetch. This plant combines in a remarkable way the qualities which go to make up the ideal cover crop. It will grow in early spring and late fall, it will grow in the shade, it will stand the tramping and packing of the ground during picking, and still survive and grow. It is a vine and grows low so it interferes very little with picking, and last and best it is a legume, a nitrogen gatherer, seems not to need innoculation, and is reasonably sure to catch. Its chief defect is the high price of the seed, and this is being met by the vineyardists growing their own seed which seems to present few difficulties, except that for seed it must be sowed with a grain crop. Rye is best, for vetch is a vine, and must have some support in order to stand up for blossoming, ripening the seed, and for harvest.

For bulk of humus, the cowhorn turnip with oats, or with clover if it will catch, gives remarkable results. Rye alone attains so large a growth that unless the soil will permit early plowing in the spring, too large a body of green stuff will be turned under. Of course when clovers can be grown, they are nearly ideal. Among them all, however, the best grape growers are turning to the hairy vetch.

And the second point, for at the outset I said I wished to emphasize two points, is lime. There are mighty few orchard soils, particularly if they have not had the clean cultivation and cover crop treatment, that do not need lime. A thorough application, up to a ton per acre, once in four or five years, is the commonly recommended application. What form to use? Use the form which gives the calcium content at the smallest cost, and have it ground fine. That is the point, have it fine. Lime and humus are the draft horses which will pull your otherwise mired load of unprofitable orchard safe and sound to the highroad of prosperity.

Perhaps not sufficient emphasis has been placed in this on the necessity for bringing about and then preserving the proper physical condition of the soil. With the grape growers, that is the best of them, this has come to be second nature, and it must be so with every successful peach grower, cherry orchardist, and apple man.

This part of the work is one which requires knowledge of your own soil conditions, knowledge of when to plow, and when not to, when to roll and when not to, and all the other facts of cultivation. The grape grower keeps his horse tools going pretty constantly from the opening of the season until July; then he sows his cover crop, and rests his case.

There is every kind of common sense in this system, and the sooner its points are thoroughly understood and applied, not only to fruit growing but to general farming, the sooner the complaint of worn out farms will cease. The corn raiser, who in July, broadcasts a crop of vetch in his cornfield, under normal circumstances will have a cover crop to turn under in the spring which will go far toward taking the place of the dressing of barnyard manure which he finds increasingly difficult to obtain. Any other cover crop likewise. It means added nitrogen, added humus, better physical condition, better moisture retention and more available plant food. These conditions must all be kept in view.

And so, while you are figuring how poultry and truck crops will add to your revenue, do not forget how to maintain your own orchard lands and keep intact the gold mine from which you and your children will draw wealth for all time to come. In this new and yet thoroughly established system of cover crops, whereby the land will not only produce a money crop each year, as well as another crop to be turned back into the land is the way this gold mine can be maintained. As Prof. Fippin of Cornell paraphrases: "Lime and lime alone enriches the father but makes poor the son, but lime and plenty of organic matter enriches both father and son."

New York. A. M. LOOMIS.

It is time to get the hotbed sash in readiness for use. It will be needed during the latter part of the month when you prepare to start your early vegetables for transplanting.

In 1912—resolve it men, You're early in the fields—Big Ben.

No one should be *blamed* for *over* sleeping any more than blamed for *walking* in his sleep.—Man is only *partly* conscious when he first opens up his eyes after a heavy sleep. He needs *help* to get him *wide* awake at once Most men would get up on time if they only *realized* the time.

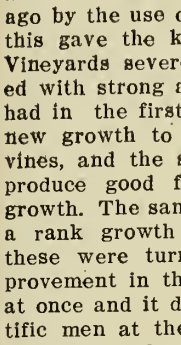
Big Ben makes them realize it. Thus all who *have* his help *get up.* Try it on yourself. Try it on the farm hands, too.

Note how you *all* get out to the fields on time, and how you all *enjoy* it—with the help of Big Ben.

Go to your jeweler's store today and *see* Big Ben. His face *reminds* you of a pleasant sunrise. A big bright, smiling face—much like Old Sol's. His cheerful voice sings out a merry tune. His steel "clothes" make him strong and lasting. His works *keep time.* His big keys are easy to wind and his large hands and figures are easy to read.

Now Farmer-Men, if you sleep *heavily*—and you *do* if you work as a good farmer *should—you need* Big Ben.

He's sold by 16,000 jewelers, the price is $2.50 everywhere.—If your jeweler doesn't sell him, or if there is no jeweler in your town, send a money order to his designers, *Westclox, La Salle, Illinois* He will come to you express charges prepaid.

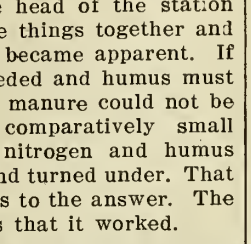


$3.00 Offer On Famous STAHL Spraying Outfit

Send $3 and we will promptly ship this Stahl Spray Pump No. 30, all brass working parts, fitted with Wing Agitator and one 8-ft. discharge and nozzle. Examine it. If O. K., pay balance. $5.65. If not satisfactory after 10 days' trial test, send it back at our expense and we refund your money.

(Barrel not included)

Send today—we take all the risk.



Stahl's Handbook on Orchard Pests Sent Free

Invaluable to all fruit growers. All about every insect and fungus condition of orchard, vineyard and garden. Describes 21 styles of Sprayers, all sizes and types, including Power Outfits. Write for it. Better accept the $3 offer on above outfit. (33)

WM. STAHL SPRAYER CO., Box 667, Quincy, Ill.

FITZ OVERALLS

The FITZ reserve stock is always complete on every size.

If your dealer does not have your size in stock he can get it for you within a day or two.

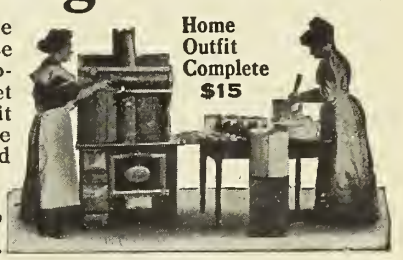
Burnham, Munger, Root D. G. Co.

KANSAS CITY, MO.

Write for Free FITZ Book.

Do Your Canning at Home

Farmers, don't buy any more canned goods! Put up what you can use and sell the rest to your neighbors or grocery stores. Fruit Growers and Market Gardeners—no more vegetables or fruit need go to waste. Ship as long as the markets are good—then can the rest and sell in the winter at top prices.



Home Outfit Complete $15

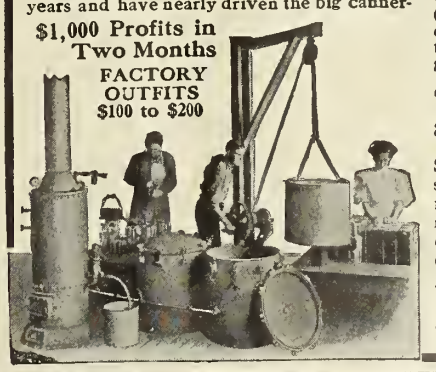
Can Your Own Vegetables, Fruits, Fresh Meats, Fish, Etc.

in Steam Pressure Boilers

The same regulation steam pressure boilers that are used in the large canning factories, only made on a smaller scale and adapted for the home or small factory use. Anyone with ordinary intelligence and our simple instructions can put up corn, peas, string beans, tomatoes, pumpkins, fruits and berries of all kinds, fresh meats, fish, etc., just as easily as boiling potatoes. These outfits will pay for themselves many times over the first year and will last a lifetime. In Europe these small canning factories have been in evidence 20 years and have nearly driven the big canneries out of existence. In America they are fast becoming popular and will soon be to the vegetable and fruit districts what the cream separator is to the dairying sections.

$1,000 Profits in Two Months

FACTORY OUTFITS $100 to $200



Wanted! Agents and Dealers Big Profits For You.

A tremendous business is developing on these outfits and we are offering merchants, hardware dealers, nurserymen, fruit tree salesmen (as side line), farmer agents and others, big inducements to sell these outfits in their localities. They are *money makers* and every fruit grower and farmer's wife wants one.

"Secrets of the Canning Busines" and our 1912 Catalog. Both Free

Send for them today. Our Catalog describes our entire line and tells just how to figure the profits yourself. Where we have no agent or dealer we will allow you agent's discount as an introductory price for the first outfit in each neighborhood. Write now.

Northwestern Steel & Iron Works

641 Spring St. Eau Claire, Wis.

A Round-Up

Since the Government authorities have begun to "Round Up" a few of the men who have so long brought odium upon the name of honest labor, I have been urged by some editors to publicly define the reasons for my seven years' newspaper campaign on the tyrannies of many Labor Union Leaders.

Some men endow colleges. Others build libraries.

Both educational.

I preferred to devote to newspapers my contributions toward education, warning the people to protect themselves against the greatest, most tyrannical and dangerous trust this country has ever seen.

Especially insidious and dangerous, because its inner plans were not understood by the average citizen who, seeing no immediate slavery to himself, peacefully followed his own pursuits and blindly allowed the self-seeking Labor Leaders (?) to weave their web stronger as time went on. Not one word in my entire campaign has been uttered against peaceful trade associations.

I have only tried to defend the several million honest and law-abiding workmen who protest against the bullying and abuse of those in power.

No one seemed to sympathize with the few thousand widows and orphans of the men murdered while faithfully trying to earn a living under God's permission but against the "orders" of the "Labor Trust." So I tried to present their cause from time to time.

The healthy average common citizen is perhaps deserving of at least some of the inconvenience and loss put on him from strikes and other labor leaders' tyranny as a reward for his indifference.

I knew years ago that the plan of this big labor trust was to ultimately gain control over every workman, clerk and employe in the U. S., including farm hands and government employes.

This has been partly accomplished in some localities; then followed acts which clearly show the intent.

First, to harvest initiation fees, sometimes up to $100.00 each to "join the union."

Next, monthly dues. Say $2,500.00 a month in a town with 10,000 "members" at 25 cents each.

Next, "fines," assessed for some infraction of "rules."

Then the lash of the slave driver came forth. Orders to strike; what to buy; what not to buy; how to vote; when to parade (to show power); and to contribute from the hard-earned pay envelope for strike benefits to other men forced into idleness pending negotiations between crooked leaders (?) and crooked employers who hire said leaders to call strikes on competitive jobs, thus making the workmen tools, kept idle while the chiefs scrap for control or bribe money.

One of the hardest strokes of the lash is the money forced from members to defend dynamiters, sluggers and murderers when caught.

But let an honest workman, who, perchance, has been driven into "the union," dare to disobey one of these "orders" and he is taught a lesson through the slugging or dynamiting committees.

The slavery of the honest American workingman is pitiable when "closed shop" full control is obtained by the tyrannical leaders.

Now, observe the plan of this gang to govern men and affairs.

"Organize" every trade. Insist on closed shop. Then use the power of numbers to induce government officials to permit organizing all government employes. Some of the oaths defining that the union rules shall "precede Church, State and Family."

Then force Congressmen to pass anti-injunction laws to prevent courts from stopping proposed outrages.

Force merchants to hire only "union" clerks and sell only "label" goods. Use union funds to support slugging and dynamiting crews to drive back the protesting ones or "remove" them.

Of course, in carrying out the plan for complete control by the gang, some were caught.

Whenever openly exposed the men "higher up" immediately begin to assess members to protect the criminals and always rush into print with loud cries and much mock sentiment about "the brotherhood of man" and the "defense of the wage worker," with such play upon the sympathy of the people they cover their own greed for fees and insane desire to read their names in the papers.

It would be hard to convince the widows of the twenty-one murdered men in the Los Angeles tragedy, and hundreds of others, that their husbands received much benefit from "the defense of the wage worker," nor could they well understand such working of that particular brand of the "brotherhood of man" scheme.

Late events have stripped the lamb's coat from the body of the wolf and shown most clearly the lying deceit and horrible portent underneath, which I have tried time and again to explain to the public.

Men who preferred to work and support their families have been waylaid. Fingers chopped off, with the comforting assurance that "now you can set type if you will." Crow bars and heavy weights dropped on heads. Fathers beaten unconscious and many times crippled for life; little homes blown up and many and many a corpse brought to the destitute family.

These are not "occasional cases." Such crimes run literally into the thousands, and judges and juries have been threatened with death, bribed, and witnesses slugged or put out of the way.

In the Government cases now pending the witnesses must be guarded from the agents of the "Labor Trust" with its tentacles reaching to the most remote corners of our country.

Don't permit yourself to be misled by the vaporings of sentimental, drooling degenerates who assert that these murders are justified because "society" has oppressed workingmen.

In no other country in the world are they paid as high, and as much earnest effort devoted to their welfare. Nor is there as abundant opportunity in any other country in the world for workmen to gain fortunes.

Our great railroads and industries are largely headed by former wage earners.

These murders are instigated by that class of men, always in evidence, who hate success. They coolly and cruelly plan and execute assaults and murders to satisfy their own hate and show their power over the slaves who dare protest. The nightly talk of strikes, given in many a union meeting, develops the hate and murderous instinct which waits only for opportunity to carry out.

Take the Los Angeles case as an illustration. The Times had withstood about 16 years of all kinds of attacks, not because its faithful employes were underpaid. They received wages higher than the union scale, but they refused to bow down and place themselves under control of "the gang," hence they were persistently assailed and finally 21 were murdered. These men only asked to be let alone to support their families, but union leaders determined to rule over them, hence the murders.

The whole set-up of the leaders of the great "Labor Trust," the American Federation of Labor, points toward a diabolically adroit plan to secure to those leaders complete control over their own members who dare not protest, and also over all other workmen, legislators, congressmen, merchants and the balance of citizens.

Think it over and you will see in part what the tyranny would be if they were permitted to completely carry out their plans.

Now that the facts are known the people can protect themselves by refusing to do any act that would add power to this aggregation.

Remember, any act.

When their grip on the throat of honest labor is broken, working men can either select better leaders, or join some of the law-abiding trade organizations.

I was not driven to write this series of articles by reason of disagreements with my own thousand workmen. No troubles have arisen between us.

They have had fifty-two weeks a year steady work for many years, are a contented, high-grade class receiving the best wages in Michigan for like service, and protected from the frequent onslaughts of these "Labor Leaders" (?).

Mr. Gompers has repeatedly announced in public that I sought to destroy all organizations of labor.

This is in line with his regular habit of distorting facts. I have for a long time been a member of the National Association of Stationary Engineers and the National Trades and Workers Association. These are non-strike and peaceful organizations which negotiate their trade agreements legally, with peace and honor.

I have given to the Trades and Workers Association a $400,000.00 home for their old members in furtherance of an honest desire to help solve this most important industrial question.

In addition, I have offered to contribute a quarter of a million dollars cash to help along a workingman's movement, as defined in a letter sent Mr. Gompers, Dec. 11th, 1911. Copy herewith:

December 11, 1911.

Mr. Samuel Gompers, Pres., American Federation of Labor,
Washington, D. C.

Dear Sir—

Press reports indicate that you are greatly depressed and harassed by fear and the disrepute brought on your Federation.

The query has arisen whether you are big enough to sense the movement of a great Power which guides humanity, and to conclude that the time has arrived when "Labor" should be honestly represented instead of misrepresented.

If the thought of truthful and earnest effort has come, and you honestly desire better conditions for the wage earners, may I tender to you in invitation to come out to Battle Creek for a conference with the President of the Trades and Workers Association, Mr. J. W. Bryce?

If you will permit it, your expenses will be paid from the time you leave Washington until you return.

You will be put up at the Sanitarium for a week or ten days' rest and freedom from worry, as a guest, either of the Association or of myself, as you prefer.

When rested, let us consider the new movement for the workingmen of America, enlisted under the banner of the National Trades and Workers Association, free from strikes, slugging, picketing, tyranny, fines, dynamiting and murder.

Belonging to the American Federation of Labor are hundreds of thousands of self-respecting and law-abiding workingmen who are members under pressure and who deplore the tactics you and your associates have employed and forced upon them.

They want steady employment fifty-two weeks in the year and do not relish being forced by strikes into idleness pending the "negotiations" between crooked labor leaders seeking bribes, and crooked employers who hire said leaders to call strikes on competitive jobs, thus making the workingmen tools kept idle while the chiefs scrap for control or bribe money.

You will perhaps reject this proposal, believing that strikes are a necessary weapon to preserve the rights of workingmen. But the new way has been in very successful operation over two years and found to have more power than the old way.

The honorable Brotherhood of Locomotive Engineers, The National Association of Stationary Engineers and the National Trades and Workers Association perfect trade agreements without strikes, secure the highest wages,

ADVERTISEMENT

A Round-Up—Continued

and yet preserve the respect and esteem of employers and of the members themselves.

Workingmen are aroused to resentment from being forced to contribute from their hard earned pay envelopes to defend known sluggers and murderers, and to being heavily fined for not obeying the orders of leaders when they know those leaders are simply using them to insure complete dominion over the daily lives of the American workingman.

He seeks to maintain his position as an honest, peaceful citizen and not to be forced to affiliate with and support thugs and murderers.

Personally, I have only sincere and open denunciation for the past methods of you and your associates. Nevertheless, if you are ready to join in an earnest and truthful step forward for your members and will accept this invitation in the spirit in which it is given, you will be most welcome, and will be treated with the greatest consideration we are capable of, and in addition I will agree to contribute a quarter of a million dollars in cash to the new movement.

The Trades and Workers now have a splendid $400,000 home to care for their indigent members, and with the addition of the members of the American Federation of Labor and its endowment we can merit the support of the public, all working for the new day of peace with honor in the industrial field.

Yours very truly,

C. W. POST.

No reply has been received. It seems evident the present Leaders will not accept any offer of industrial peace which takes from them the fees, control of workmen, and curbs their trust methods.

When any combination either of Capital or Labor goes outside its own business and attempts to oppress, tyrannize, or forcibly dictate to others and thereby "restrains trade" it becomes dangerous and should be prosecuted.

Talk about restraint of trade!

All the capital trusts in this country couldn't bring about a minus fraction of the loss, inconvenience, misery and crime set in motion by strike conspirators.

The time has come when every home-loving patriotic citizen should speak in most unmistakable terms, if liberty is to be preserved.

Write President Taft asking when he will apply the law to the Labor Trust as well as the Capital Trusts.

Then write your members of Congress, telling them clearly that you will expect them to protect yourself and other common, everyday citizens by voting down the bills these Labor Trust leaders are pressing to give them more control.

One is a bill to prevent courts from issuing restraining orders to stop proposed acts of violence in strikes. Another is to allow labor leaders to restrain trade without being subject to the law.

You are one of a tremendous majority, but you must tell your public officials your needs. Then they can act in your defense.

Then question candidates and don't accept any equivocal answers.

Insist that trade organizations can be peacefully conducted and that no laws be enacted giving leaders arbitrary control over the masses.

A few of the facts are now known and have been proven true. Many more will follow as the government investigation proceeds. Will you be patriotic and painstaking enough to write, talk and vote for your own safety?

My work in the way of public and expensive paid announcements on this subject is done.

There's a Reason,

C. W. POST.

RENEWAL BY TOP WORKING

At the meeting of the Missouri Horticultural Society which met at Columbia on January 9th to 12th, Mr. J. F. Riddell, manager of the Darby Fruit Farm, Amoret Mo., presented a paper on "Renewing Old or Young Apple Trees by Means of Grafting." As many are interested in this method of renewing their apple trees, or changing undesirable varieties for better kinds, we quote Mr. Riddell's paper in full.

"Renewing old or young apple trees by means of grafting seems to have attracted much attention throughout the state in the past few years, and personally I have had many inquiries as to the best method to pursue in this work. It has been proven conclusively that there are a great many unsuccessful orchards that may be improved by some method of top-working. The ordinary farmer has little idea as to the simplicity of this work, or that he can, in a few hours, gain sufficient knowledge to do such work with more or less success.

"Under any reasonable conditions the work is in no way a difficult proposition. While there are many methods of top-working trees, that is, different cuts, etc., there is but one which seems to have proved itself most successful on bearing trees, this is known as the "Coburn Method."

"One of the most essential points to consider in this work is the time to do it. Generally speaking, it should be done in February or March, not later than the latter month. If your work is prolonged until the latter part of March, when vegetation begins, your degree of success will depend altogether on the season. It is rather uncomfortable to do this work in February, on cold frosty mornings, owing to the fact that grafting wax must be kept warm, or at an even temperature in order that it may be applied nicely and properly to the wounds. Then, if delayed until pleasant weather, after the sap has begun to circulate freely through the branches of the tree only a small per cent of the grafts will grow.

"By this method of top-working trees can be successfully changed from one variety to another from the time of planting to fifteen or even twenty years of age, but it is hardly practical, in a commercial way, after the trees have grown so old. We find that weak, unhealthy trees are benefited by this work, due to the fact that it checks growth in such a way that the tree becomes more vigorous by the time the grafts have reached bearing age, and in this way it prolongs life and proves to be a very profitable tree.

"The work is accomplished by removing all limbs close to the body of the tree, except one, two or on extremely large trees, possibly three main branches. The limbs should be sawed off square, and as near the body of the tree and ground as possible. The limbs retained should be left in the center or on the southwest side, which affords some shade, and their principal work is to maintain the circulation of sap above the wounds. These limbs are commonly called "sap pullers." It is of great importance to reserve these branches for the purpose of drawing sap higher than the grafts in order that the healing process may go on as rapidly as possible. To remove all limbs and at the same time get the proper growth of grafts would cause a rush of sap to the wound and the graft would likely grow so fast as to be easily blown off, this is particularly true of buds. This also applies to the nature and constitution of man. He will recover much quicker with the loss of one limb than all at the same time. Larger trees are more susceptible to adverse conditions and more liable to die than are young trees.

"All limbs may be grafted from one inch up to limbs having a diameter of two to four inches. One graft is all that is needed to each limb, however on large limbs I would advise using two to three and often four grafts. This acts as a protection from birds, wind, etc., and helps to heal the wound. More or less damage is done by birds alighting on a stub when the graft is quite small, and by using two or three grafts, you have better assurance of one good graft to each limb.

"Again, when they are about one foot in length, they are sometimes blown off by heavy winds. After the first season remove all but one graft on each stub. As soon as the sap starts after young grafts have been placed, numerous water sprouts shoot up all over the body and even down close to the graft, then it is hard to detect the graft from the water sprouts if allowed to grow the entire season. These water sprouts should be rubbed off by hand when three to six inches in length and if you find that your stand of grafts be poor, or find a place where one has been broken, it is well to leave the water sprouts as near the end of the stub as possible. Also in places where you think there is not sufficient grafts, allow a water sprout to grow, and when these are about the size of a lead pencil, go through and bud each water sprout. The best time for this work to be done is during the month of August. By following the foregoing principles the entire tree is practically changed in one season.

"The following spring when your grafts are, as a rule, from six to eighteen inches in length, and in many cases I have known them to make a three-foot growth in one season, saw out the limbs which we call "sap pullers." This should be taken into consideration when they are left in the tree. Leave those limbs which you think should be sawed out and remove them the following spring, or if they are such as may be needed to conserve the shape of the tree the same process of grafting can be used on them as was used the spring before on other parts. If close attention is given these limbs left the first season, it is rarely necessary to graft it the following season.

"A "V"-shaped cut is made with saw and grafting knife through the bark at the end of the stub, or the ordinary pocket knife can be used to smooth the cut made by the saw. Then place the scion firmly in the cut, being careful to see the two barks cross. It is better that they cross than to have them perfectly smooth as the bark on the young scions is much thinner than that on the old tree. If the two tissues do not meet, it will result in a dead graft. After your grafts or scions have been firmly placed into cut, cover carefully with grafting wax made as follows: Resin, 4 pounds; beeswax 2 pounds; tallow, 1 pound. Or resin, 6 pounds; beeswax, 2 pounds; 1 pint linseed oil.

"Sometimes paraffin is substituted, but beeswax is the more preferable. Melt your resin, beeswax and tallow in a bucket or other receptacle, and when it has been sufficiently dissolved and reached the boiling state remove from fire and pour the entire mass into a bucket of cold water, then work as you would taffy candy until the different ingredients have been well assimilated.

"It is advisable to go over the work once each week and see that all wax remains intact, and in such condition as will prevent water from entering into crevice or wound. Trees thus treated should be well cultivated first season, after top-working. While we believe in thorough cultivation in all orchards, it is particularly essential in blocks which are top-worked."

Fruit Notes For February.

It has been frequently stated by fruit growers that a temperature of 15 degrees below zero kills the fruit buds of the peach, and a further drop of 5 degrees kills the tree.

While this may be approximately correct in theory, there are many exceptions to this rule. So much depends upon location, protection by trees and hills, moisture content in the air, and other influences, that generally some buds escape even a freeze of 20 degrees below zero and trees in sheltered locations have stood 25 to 30 degrees below. If the root and small portion of the trunk of the tree are not killed, shoots are often sent up, and the following year these shoots will bloom and bear fruit. This was the case in this portion of the Ozarks in '99, when the weather bureau at Springfield recorded a temperature of 29 degrees below zero; while in some localities in the Ozarks the very unusual mark of 34 degrees below was reached. Yet not all of the peaches were killed, though most of the budded fruit, both bud and tree, succumbed.

A month ago strawberry plants looked healthy, and seemed to be going into winter in good condition. Weather conditions seriously hindered the work of mulching, and the unmulched parts of the field look somewhat sickly now. When the fields are kept clean of grass until frost, the plants suffer from the alternate freezing and thawing if not protected by mulch.

I am hauling out a load or two of stable litter each morning when the ground is sufficiently frozen to bear up the wagon, and spreading thinly on the berry rows. Mr. Johnson states that he applies strawy manure to the depth of four or five inches. I never dared use quite so much. The strawberry plant is easily smothered, clumps of straw even requiring careful opening up when growth starts in the spring. But as Mr. Johnson says, the strawy manure is just what the berries need—both plant and fruit.

I have now used 15 loads of coarse manure on one acre.

The Billings sub-association of the Ozark Fruit Growers Association received their car of crate material, and unloaded the car during the icy spell, January 17-18. It was a serious proposition for some of the growers who live three or four miles out, how to get their stuff home. Coal was scarce in town, and one grower who lives in town said he was sure of fuel—he could burn his crates.

The cups used now must be full quart, except that growers may use the crates left over from last year. The difference in amount of fruit held by the new and old style cup is very small—not more than one-fifteenth part.

Missouri. WINN COMBS.

There is just as much importance in having a breed of chickens which are specialists in some particular line, such as egg production or meat production as there is in having cattle which are specialists in the production of beef or milk. The two conditions are not combined to the highest degree in any one strain.

BUILDING A HOTBED

To arrange and manage a hotbed successfully is not a difficult matter. It is so simple, in fact, that in most cases one conveniently located would be much more satisfactory to raise even a few early plants for the garden than the usual pots and boxes in the kitchen window. While desirable as an adjunct to any garden, a hotbed is indispensable to best returns in the market garden, unless other facilities for growing early plants are at hand. There are probably thousands of small farmers who grow considerable quantities of vegetables for market, who confine themselves entirely to the less profitable crops which may be started in the open ground, and thus miss the pleasure and extra good profits that may be secured by the intelligent use of a small area of cold frames and hotbeds.

I have 24 sash, 3x6 feet, for hotbeds, and the produce from the plants grown in this small space sells for from $25 to $30 per sash, while the portion used for plants of extra early tomatoes average much higher, in a favored season reaching $40 per sash. To those who transplant in the bed this may seem extreme, but more on this point later. My hotbed is used to grow tomatoes, peppers, egg-plant, sweet potatoes and early cabbage plants.

The first step in arranging for a hotbed is to secure the sash. These may be bought all ready for use, but if one has time to spare it is cheaper by about one-half, to buy the sash in flat and glass by the box, and put together, glaze and paint them at home. Sash are made to receive the glass in two ways; by grooving with a saw cut, into which the panes are simply slipped end to end, and by rabbeting, in which the panes are shingled over each other and secured with points and putty. Mine are of the latter kind, as I think them closer and more durable; though there are many of the other kind in use, and they have the advantage of being quickly put together and easily repaired.

When putty is used it should be applied in liquid form, as it is easier to apply and far more durable. It is prepared by mixing putty with linseed oil until just thin enough to be forced from the nozzle of the putty-bulb. After applying, a little sand sprinkled on will help to dry and increase its efficiency. Glass is packed in several grades; the cheaper of which serve every purpose for hotbed use.

Covers must be provided to be placed on the sash at night, especially when the weather is severe. These may consist of board shutters, quilts made of burlap and straw, or best of all, straw mats. These too, may be bought ready-made, but may be easily made at home at trifling cost. The selection of the best available location is important. The ideal location, of course, would be a well-drained, convenient, sheltered spot, with a southern exposure; but the best at hand must do. My own hotbed is located on a western slope with a grade of nearly eight feet per hundred, and no natural protection to the north; yet these adverse conditions cause no serious loss. The one condition that is absolutely necessary is perfect drainage; if this cannot be had by using a pit the manure must be placed on the surface and banked, for if once flooded, the heat will be entirely destroyed. Next in importance is a position where it is least likely to be forgotten at some critical time. As to shelter, a tight board fence six feet high on the north and west is desirable; but if for any cause this would be in the way it is not essential. I use no shelter except a wide board staked so as to lean over the north side of the bed.

For heating, manure from the horse stable is probably best as well as most easily obtained. It may contain a large quantity of litter and when not well supplied in this respect I have at times mixed in one-third to one-half the bulk of wet forest leaves with satisfactory results. Fresh manure is preferable, but if the supply is limited it may be collected for weeks in advance by taking care to prevent leaching and fermentation. In filling the bed, spread several inches of coarse material like cornstalks on the bottom of the pit, then fill in the manure and firmly tramp, especially around the sides, until a uniform bed of about eighteen inches is secured. After sprinkling, four or five inches of good garden soil, sandy loam perferred, is evenly spread, well raked and then made perfectly even with a board sweep. The sash is now put in place, the exposed outside parts of the frame well banked with manure held in place with a little earth.

The next day the seeds may be sown. Very rich soil is usually recommended, but I doubt the wisdom of this, as I think better plants can be grown by using soil of medium quality, and adding a liberal dressing of fertilizer rich in phosphoric acid and potash. The fermenting manure will supply more than enough of the ammonia. The proper time for sowing the seed depends on the location, kind of plants to be grown and manner in which plants are to be handled. While it is desirable to have vegetables as early as possible sowing the seed too early is likely to cause a loss in this direction. Both location and season must be considered. I am in a favorable locality, but every year is not just alike, although taking one year with another there is no great variation.

To economize hotbed space and labor, I grow my early tomato plants, ready for the field, right where the seed is sown, 500 plants to the sash. The seed is usually sown about March 1st, the plants set in the field from April 25th to May 5th, and in six years the date for setting the first fruits has not varied more than a day or two from July 15th, early enough to dispose of considerable quantities in the New York City market at from 10 to 15 cents per quart box at retail and at from $2 to $2.25 per bushel crate at wholesale.

In setting the plants in the field they are set or rather laid in shallow furrows, tops away from the prevailing winds; a little soil is drawn over the roots, a foot pressed on the spot, while the rest of the stem is covered all but three or four inches of the top, which is turned upward. The footprint is left open to receive a pint of water, which later is covered to prevent evaporation. Thus treated they scarcely droop, and soon the whole stem underground is covered with rootlets, causing a vigorous growth.

With peppers, egg-plant and sweet potatoes, nothing is gained here by bedding or sowing before the last of March. In caring for the plants it is well to have a thermometer in the shade of a bar near the middle of the bed. During the day the temperature may range from 65 to 85 degrees; at night it will often fall to 40 and occasional extremes of 38 or 100 will do no harm. Special care is necessary on those occasional cold, windy days, when bright sunshine is interspersed by periods of cloudiness, to prevent either scorching or chilling the plants. In fact a fair degree of vigilance is at times necessary, as a little neglect at a critical time may be disastrous, although I have never had a loss.

CHAS. A. UMOSELLE.

New Jersey.

How to Get Early Tomatoes.

A novel but very successful method of raising tomatoes, I have found, is to train them up on poles. By my method I usually get ripe tomatoes about the 10th of July. As the vines do not cover the ground there is a chance for thorough cultivation which greatly promotes the rapid growth of the tomatoes and they do not suffer from drought.

The plants I choose for setting out, contrary to the general selection, are about twenty inches high and rather spindling. About the last of May I set them out in the ground. First I pluck off all the leaves but those at the crown. Then I dig a little trench and lay down most of the plant, except the crown. In this way the plants do not suffer shock on being set out as the leaf area is so diminished, and almost immediately roots begin to start from every joint of the buried stalk. When the plants are really started to growing they make good headway.

Soon it is time to prune in order to insure a good crop of tomatoes. Every lateral branch which starts between a leaf and the main stem is picked off. Thus the sap runs direct to the head of the plant and the tomatoes set on earlier and grow larger. As soon as the plants begin to get top heavy I set poles and twine the vines around them, tying here and there with bits of raffia. From the 10th of July when they begin bearing, until frost comes I have an abundance of fine, juicy tomatoes which are the envy and despair of all my neighbors.

In case the ground where I set the plants is deficient in moisture, I put down a tin can with perforated bottom along side of the plant. Into these cans I pour water which filters through gradually. Sometimes, also, I put liquid fertilizer into the cans to produce rapid growth. I have found my system very good for use in gardens as the plants take up but little room.

JOHN E. TAYLOR.

Have You Seen It?

Printed in Full Colors

It's Brim Full of Good Things

Why Should You Buy

FIG TREES, SATSUMA AND OTHER ORANGE TREES, GRAPEFRUIT or KUMQUAT TREES WITH PARTIALLY FROZEN TIPS

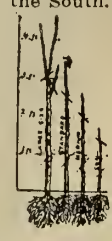
When uninjured American Grown trees, worth many times as much, can be had. Our trees are protected in the nursery. No freeze has ever touched them.

They Are Perfect in Every Way

We also offer a large stock of Peaches, Plums, Figs, Mulberries, Nuts, Ornamental Trees, Roses and Shrubbery, adapted for all parts of the South.

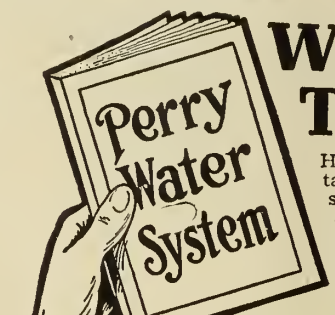
If Not Ask for It

Transportation charges prepaid, and Liberal Guarantee. A complete illustrated book on Planting, Cultivating and Caring for Trees and Plants, Free to each customer. Address Nursery nearest you.



THE GRIFFING BROS. CO.

Jacksonville, Florida Port Arthur, Texas



Write a Postal For This Free Book

Here is good news for you and important information about water supply systems for homes and farms. You've heard about the kinds that need storage tanks, where water grows stale and where separate tanks are required for soft and hard water. Our free book tells about a different system—the only improved, modern, simple and sensible method. Get these facts about the

Perry Water System

No water storage tank—turn faucet and get *pure water fresh* from well or other source. You can pipe for hard and soft water, if desired. Constant supply always ready for drinking, kitchen, laundry, bath, barn, sprinkling and fire protection. Easy to install in any old or new building. No attention needed. Apply any kind of power. Economical and practically indestructible. More advantages than any other system. Write a postal now for book. Let us furnish you free, estimate based on your needs. No obligation at all. Address

United Pump and Power Company,
497 Old Colony Bldg., Chicago, Ill.

Send Postal NOW

Do You Know the Great Universal NOZZLE

Mass-O-Spray?

If you do not yet know this wonderful nozzle, which can be changed in one minute from a driving spray more powerful and penetrating than the Bordeaux to a fine fog, write us how many acres of orchard you own, or send bank reference. We will mail you at once two MASS-O-SPRAY NOZZLES and allow you 10 days to try them. If you agree with all who used them last season (they were not put on the market until last March), and they are all ordering more, send us $1.00 and keep them. If you do not agree, drop us a postal and we will send postage for their return. Could anyone make a fairer offer?

"If You All Knew 'CROWN' GOODS, No Others Could Be Sold"

CROWN SPECIALTY COMPANY

WRITE FOR FULL LINE P. O. BOX 297, CHICAGO

SEEDS of Quality

Would you like to plant seeds from a firm that in 26 years has built up an enormous business solely upon the reliability and quality of its product? Send a postal card request for catalogue of ACORN BRAND SEEDS before buying next season's supply.

Ross Brothers Seed House, 326 E. Douglas, Wichita, Kansas

Please make it a point to always mention The Fruit-Grower when you write in response to an advertisement.

Let Me Send You My Reduced Price List on the New Magnate Apple

Best production of the late Dr. Stayman. We also have Stayman Winesap trees propagated from the first generation. We have a large supply of trees and can give reduced prices on commercial planting. **SCHEER NURSERY, Leavenworth, Kan.**

Get My Price

I Will Save You Money

30 Days Trial
Fully Guaranteed

GALLOWAY POWER SPRAYER

CONSTRUCTION—

These outfits are built throughout of the best material that money can buy, and do not have an equal for power, durability and efficiency.

Both engine and pump are bolted to the platform and the pump is driven with spocket wheels and chain. This arrangement does away with the heavy gearing necessary for a pump jack and avoids the necessity of rigid base to keep the gears in alignment.

There are no gears, connecting rods, etc., to waste time, take up room and cause trouble, especially if you decide to take the engine off and use it for any other work. You can use the engine right on the outfit, or you can unbolt it in a few minutes and take it off without interfering with the pump in any way.

We use regular Galloway engines and you can have them at your service for running cream separators, corn shellers, pumps, washing machines, or any other machinery about the place which does not require more than the rated capacity of the engine.

A lever attached to a clutch on the pulley shaft permits the operator to stand on the deck and stop or start the pump without stopping the engine. This is a convenient arrangement when you are in the orchard and wish to go from one tree to another or one part of the orchard to another.

WE HAVE long been setting the pace for engine manufacturers. We propose now to start a lively clip for power sprayer manufacturers; therefore it would not be fair to give you the price here, because we want you to consider the proposition fully, and you might wonder how a power sprayer of absolute first quality, guaranteed in every way, that an experienced orchardist could ask, could be sold at the price we are making on our new Galloway Power Sprayer.

Simplest engine built. The famous Galloway, time tried and tested.

We made our first sprayers more than a year ago. Have given them the fullest possible trial and we present them now to the fruit growers of America, knowing that we have the machine that will deliver the goods.

There are several new automatic features; there is an abundance of power; there is utter simplicity; there is durability; there is quality all the way through.

Don't simply send us your name. Write us fully what your spraying needs are. We will give you a good answer and we are mighty likely to quote you for the entire sprayer what you are accustomed to think of paying for the engine alone.

Remember, this sprayer carries all the Galloway guarantee of quality. It's sold on the Satisfaction or No Pay Plan. Write us fully today. It will mean a big saving to you.

THE WM. GALLOWAY CO., 1030 Galloway Station, Waterloo, Iowa

SIDE LINES FOR FARMERS

At the present time here at Valley View Farm fruit growing is carried as a side line to general farming, the raising of seed corn, stock, dairying and other side lines, but we think the time is coming when our numerous plantings begin to bear that the fruit business will be the main feature, and dairying, hog raising, poultry and other things carried as side lines.

Be that as it may, we are sure that dairying, poultry raising, and hog raising go hand in hand with the orcharding business, in fact here, we would plant extensive orchards for the hogs to run in, even though we did not figure on the profits from the fruit, from the standpoint of its value commercially, for the orchard is the ideal place to keep the hogs in, though the hogs are not always the ideal animal to have in the orchard, for instance when they conclude to gnaw the tree or do some other mischief.

From the start we take it for granted that the hog, large or small will at some time ruin the tree if given an opportunity, so we prepare for this, in fact we have learned by the cost of several fine trees both large and small, that the hog and the tree do not always get along well together, when they come in close contact with each other.

We have found that it is necessary to have manure in our orchards if we are to get the growth in both trees and fruit. One can get too much manure of course, but in the case of hogs, which by the way, make one of the richest manures, that the manure is scattered about the orchard as needed. We have found that the vaule of this manure to the trees is very great, in fact, our light sod orchards are given no other tonic except the droppings from the hogs, which we often feed amongst the trees in order that the droppings and the corn cobs may be more evenly distributed over the orchard.

Small pigs are by far the most desirable in a young orchard, and in our case we are letting the two to six months old pigs run almost continually in our twelve-year-old orchard, for the grass that they get in the fall and spring and the apples that drop in summer. The fact of the case is that they are the nicest thing in the business to pick up and utilize the drop apples, and so nice to gather up the apples that we thin off the trees that are loaded too heavy. But the best thing of all is that each apple, no matter how little and knotty, is turned into profit, and at the same time the pig devoured the apple, he devoured the worm also.

All our hog lots are well manured from the fact that hogs have been fed on them for years, so that when we set an orchard in one of these, we let the hogs have the run of it, and at the same time set our trees and put a protector around each. This time we made the protector from pieces of old broken fence rails, those that would cut a four foot piece of solid stuff, the cutting being done with a buzz saw. Other parts of the broken rail were sawed into firewood. We built pens of these to a sufficient height to keep the pigs out. We usually dig around inside these pens to cultivate the trees, although this method would be impracticable for a large orchard.

Where we want our hogs to run only occasionally in the orchard to pick up the drops, we protect the small trees with the wire cloth protectors, as we use these anyway to exclude the mice and rabbits. This netting is made like screen except that it is galvanized; is about No. 18 wire and the meshes run about one fourth to one half inch square.

We raise hogs for the market and our own meat only, as we have never had any success at raising thoroughbreds and selling as breeders. Though some men make a success along that line, we have found that the cross-bred hog is superior through this section to the pure bred animal. But we want something pretty well bred for the sire and the dam, but of a different breed. As to the breeds it depends on the type of hog you wish to produce. Here in the corn belt we know very little of the bacon hog, as we are heavy feeders of corn and that is a fat producer, so we raise the fat type hog, and here is where the cull apples come to good use. It balances his ration of corn, and whets his appetite. The fat types of hogs consist mainly of Poland China, Chester Whites, Jersey Red or Durocs, and Berkshires; while the bacon types consist of Tamworths, Yorkshires, Hampshires and others.

The dairy as a side line ought to be profitable to the trees as the manure from the herd is very essential as a fertilizer for the orchard, but look out about letting the cows about the orchard, for they are browsers, as we have long since learned, and will ruin the trees. Even the little innocent looking calves will have your young trees ruined before you are aware of it. Here dairying is carried along as one of the main parts of farming. Butter made at home and supplied to our city customers, whom we supply with fruit during the fruit season. Though quite a few farmers sell their cream, which lessens the work on the housewife, others sell their whole milk to the condensories. This is considered a bad idea, as the skim milk makes one of the most valuable pig feeds. In fact, we believe that where alfalfa is grown on the fruit farm that a small dairy of a few Jerseys or Holstein cows, the cream or butter sold, and the skim milk fed to the pigs to balance the cull apples that they eat makes about the system to follow. A small flock of chickens will be necessary to furnish the family with eggs and meat occasionally, but we have objection to the chickens alone as they are very poor stock to clean up the cull fruit. But the combination of fruit, pigs, dairy cows, and a few chickens are profitable, providing that they are rightly proportioned. This provides milk, butter, eggs and meat. This with fruit furnishes the family with the bulk of the necessities of living, while there is usually a surplus, outside the fruit, sufficient to buy the other necessities for the table. All the while the manure from these ought, with the raising of legumes, to offset the fertility taken off in the fruit.

Wherever we have gone we have found that the family that raises the necessities for the table, taking the spare moments that come between the regular work for this work, is much better provided than the family that produces only one crop and depends on buying the necessities for the table. Furthermore we have found that in any given territory where a one-crop system is practiced, there are at times hardships to encounter, for if your crop fails, you must live just the same, and if you must depend on buying everything you may find it very difficult. In a fruit territory it stands in hand to have these things about to prepare for any emergency in the case of a fruit failure. Along this line we might mention the one crop system in the South where cotton is the main and about the only crop. With the failure in prices this year, there is a shortage of "living material," which with the poorer classes becomes somewhat of a problem. However, those who have a good cow or two, a few hogs and a few chickens are in much better circumstances.

Indiana. OMER K. ABRAHAM.

RUBBER STAMPS

We have received orders from almost EVERY STATE in the Union from our adv. in The Fruit-Grower. Please add your name to our list of satisfied customers. **Ask for Free Catalogue.**

Gardner Office Supply Co.
SPRINGFIELD, MISSOURI

INCUBATORS, BROODERS, CHICK, CHICKEN FEEDS AND POULTRY SUPPLIES
Write me for catalogue. My prices are right. I guarantee satisfaction. Also breeder of the Wm. Cook strain S. C. Buff and Black Orpingtons. Stock and eggs in season.
CARL J. HEDBERG, BOXHOLM, IOWA

My Farewell Car

By R. E. Olds, Designer

Reo the Fifth—the car I now bring out—is considered by me as pretty close to finality.

So close that I call it "MyFarewell Car." I shall let it stand as my topmost achievement.

Embodied here are the final results of my 25 years of experience.

I have spent 18 months on Reo the Fifth. For three months I stopped the whole Reo production to devote all of our efforts to this one car.

The future is bound to bring some minor changes—folderols and fashions. But in all the essentials this car strikes my limit.

Better workmanship is impossible, better materials unthinkable. More of simplicity, silence, durability and economy can hardly be conceived.

I consider this car about as close to perfection as engineers ever will get.

My 24th Model

This is the twenty-fourth model which I have created. My first was a steam car, built in 1887—25 years ago. My first gasoline car was built in 1895—17 years ago.

My whole life has been spent in building gasoline engines—the Olds Gas Engines, famous half the world over. My engine-building successes gave first prestige to my cars. For the motor, of course, is the very heart of a car.

So it came about that tens of thousands of motorists have used cars of my designing. They have run from one to six cylinders, from 6 to 60 horsepower. They have ranged from little to big, from the primitive to the modern luxurious cars. I have run the whole gamut of automobile experience.

In the process of sifting I have settled down to the 30 to 35 horsepower, 4-cylinder car. That is, and will doubtless remain, the standard type of car.

Greater power is unnecessary; its operation expensive. Weight, size and power not needed bring excessive cost of upkeep. Most men who know best, and who can own good cars, are coming to this standard type. So we make for the future just this one type of car.

And in this new car—called Reo the Fifth—I have embodied all I know which can add one iota to the real worth of a car.

My Thousand Helpers

But Reo the Fifth, despite all my inventions, belongs to other men more than to me. A thousand men have contributed to it. I have searched the whole world to secure for each part the very best that any man has discovered.

For that is the essence of motor car designing—to learn what is best and adopt it. No modern car owes more than a trifle to the genius of any one man.

So this car is not mine—it is merely my compilation. It shows my skill in selection—in picking the best—more than my skill in designing. It shows, above all, what my myriads of cars in actual use have taught me.

And I frankly confess that I owe a great deal to the many brilliant designers whom it has been my good fortune to associate with me.

Where This Car Excels

In Reo the Fifth you will find many good features found in no other car. You will find all the best features used in other up-to-date models. You will find them combined with style, finish and appearance which marks the very latest vogue.

But the vital advantages of this new car lie in excess of care and caution. In the utter exactness—in the big margins of safety.

One of the greatest lies in formulas for steel. I have learned by endless experiment—by countless mistakes—the best alloy for each purpose.

All the steel that I use is now made to my order. And each lot is analyzed to prove its accord with the formula. Experience has taught me not to take any chances.

I used to test gears with a hammer. Now I use a crushing machine of 50 tons capacity. And I know to exactness what each gear will stand.

I took the maker's word on magnetos at one time. Now I require a radical test, and I have found but two makes which will stand it.

The axles are immensely important. I use Nickel Steel of unusual diameter, and fit them with Timken Roller Bearings.

The carburetor is doubly heated—by hot air and hot water—for the present grades of gasoline.

The car is over-tired.

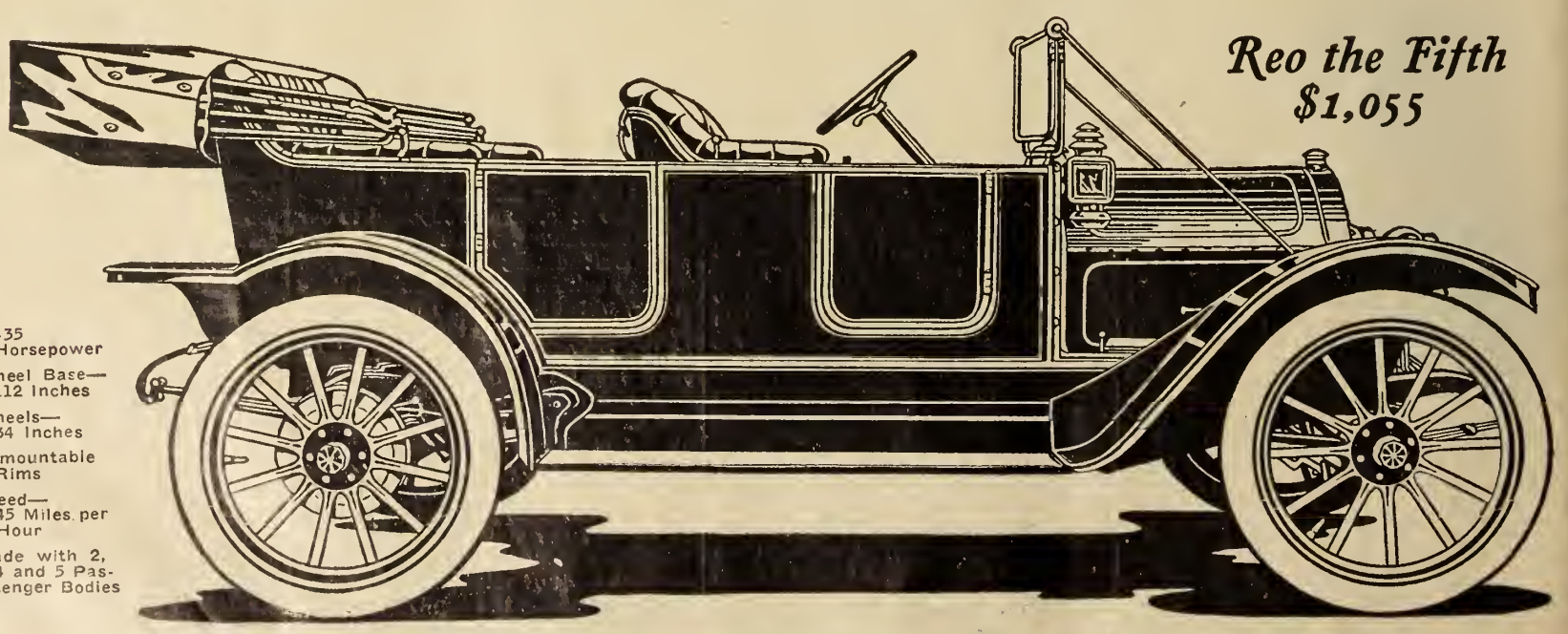
So with every part. From start to finish this car is built under laboratory supervision. The various parts pass a thousand inspections.

It is one thing to build a theoretical car, to meet all expected conditions. It is another thing to build one to meet actual conditions. The unusual and unexpected bring out a car's weakness.

The best thing I have learned, in these decades of experience, is the folly of taking chances.

I had one of these new cars run for ten thousand miles—run at top speed, night and day, on rough roads. That is equal, I figure, to three years' average usage. Then I took the car apart, and I found every important part in the whole car practically as good as new.

That's where this car excels—in that excess of caution taught by 25 years of experience. I am not abler than other designers. I have simply been learning longer.



Reo the Fifth
$1,055

30-35 Horsepower
Wheel Base—112 Inches
Wheels—34 Inches
Demountable Rims
Speed—45 Miles per Hour
Made with 2, 4 and 5 Passenger Bodies

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip-cover, windshield, gas tank and speedometer—all for $100 extra. Self-Starter, if wanted, $25.00 extra.

The Price of $1,055

It seems an anomaly that this Farewell Car—my finest production—should sell for $1,055. But of all the new accomplishments shown in this car I consider this price as the greatest.

In this final and radical paring of cost I feel that I leave my greatest mark on this industry. And nothing else done by me has required so much invention, so much preparation.

The time has come when motor cars must be sold on a close-price basis. Cost, profit and selling-cost must all come down.

The furores of the future will be due to efficiency — to enormous production, to modern equipment, to automatic machinery.

The time is passing when a double price indicates a double value. Men are learning how to judge a car. They are not content to pay more than the market for the utmost one can get.

The Sweeping Change

I have sold thousands of cars at what would now be four times the cost of making. I have seen men stand in line and pay a bonus to get them.

I have spent in the making—in proportion to value—twice what I spend today. But those were days of experiment, of constant change. A wealth of machinery, tools and jigs went every year to the scrap heap. And they were days of hand work, of little automatic machinery.

I have seen overhead expense, in the days of small outputs, cost twice as much as labor. I have seen selling expense cost as much as materials. The prices of those days are now extremely unfair.

Now every operation in the Reo plant is performed by special automatic machinery, invented by us, built right here in our shops. Some single machines divide the labor cost by fifty. And they multiply exactness, too.

Now the Reo is standardized, so machines are not changed. Now we build but one chassis in all this great plant. That fact alone saves nearly $200 per car.

Now the whole of the car is built under one roof, so we pay no profits to parts makers. Now we make thousands of cars where we used to make hundreds, so overhead expense is a trifle.

Selling expense, because of the Reo's prestige, is a fraction of what it was. Profit per car has been cut to the minimum. Our dividends are paid by enormous production.

Those are the reasons for this price on Reo the Fifth—a price far below any car in its class. I believe the dominant car must give most for the money. And I want that to be Reo the Fifth.

The Price Not Fixed

But the price of $1,055 is not irrevocable. All our contracts with dealers provide for advance on two weeks' written notice.

Materials are now at their lowest prices in years, and but little advance will make this price impossible. We have pared every cost to the limit. We have even discounted the prospect of a doubled demand. So added cost, if it should occur, must be added to our price.

But the price today is $1,055. And the price will be kept this low as long as it can be. But no price can be fixed for six months in advance without leaving a big margin, and we haven't done that.

About Skimping

Standard cars which compare with Reo the Fifth are selling today up to $2,500. This difference in price naturally leads to the question as to whether we have skimped on the Reo.

We ask you to judge that for yourself. Our catalog — just out — gives complete specifications. It states the material used in every vital part. Please make your comparisons; or, if you can't do it, have a good engineer make them for you.

If there is one device better than I employ, I don't know it. If there are better materials for any part or purpose, I have failed to find them out. If any maker uses more time, skill or care, I do not know how he employs it.

After 25 years spent in car building I consider Reo the Fifth, in every respect, as my limit. I would not know where to add one whit of real value, whatever price you would pay.

Note the generous tires—the hair-filled genuine leather cushions—the nickel-trimmed engine—the 17-coated body. In every part of the car, both the seen and unseen, I have put that final touch.

No, this car is not skimped. I am putting it out as the cap-sheaf of my career. All my prestige is at stake on it. This is my Farewell Car, and I am glad to think that tens of thousands of motor car owners are going to judge me by it.

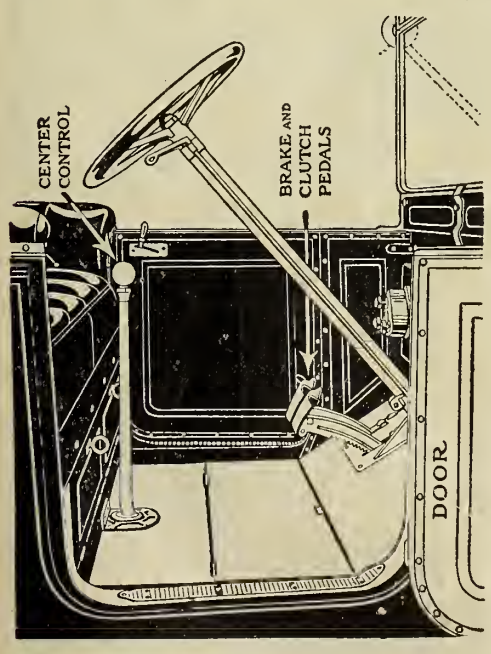
New Catalog Ready

Our catalog gives all the specifications, and shows the three styles of bodies. It gives details of all the new features.

Reo the Fifth, at this radical price, will be the season's sensation. The facts about it are exceedingly interesting. Write us today for the book. We will then direct you where to see the car.

R. M. Owen & Co. General Sales Agents for **Reo Motor Car Co., Lansing, Mich.**

Canadian Factory, St. Catharines, Ontario



The Center, Cane-Handle Control
No Side Levers—No Reaching

The most unique feature in Reo the Fifth is this center control, shaped like a cane handle. It is our invention—our exclusive feature.

This car has no side levers—nothing in the way. The driver gets out on either side as easily as you climb from the tonneau.

Both brakes are worked by foot pedals. Either or both of them can be applied without taking the hand from the wheel.

The gear shifting is done by this center cane-handle. The handle straight up means transmission on neutral. One slight motion takes you to low speed, another to intermediate, another to high speed and another to reverse.

Each of these movements is in a different direction. And the top of the handle, in changing from one to another, hardly moves more than three inches. So the handle is not in the way.

No danger of gear stripping. No noise at all. There was never before a gear shifting device even one-fourth so convenient and simple.

Left-Side Drive

In Reo the Fifth the driver sits—as he should sit—on the left-hand side. He is then close to the cars which he passes. He is on the up side of the road. He can look behind in making a turn.

This has always been so on electrics. But with gasoline cars, where there are side levers, the driver is compelled to sit on the right side. And that means the wrong side for driving.

Fore doors have now made side levers impracticable. They come too close to the door. This fact is compelling a center control, to which all cars must come. And this center control enables the driver to sit on the left side —on the proper side of his car.

It is so in Reo the Fifth. But, in addition to that, we have rid the car of both the brake lever and gear lever.

Those are a few of the ways in which this new Reo model shows its up-to-dateness.

MAKING A FRUIT FARM

Experience of an Ohio Reader in Transforming a Weed Patch Into an Orchard

Just close your eyes a moment and imagine you see seven acres of land grown up with weeds; fences falling to pieces, but with beautiful natural surroundings, in fact a "diamond in the rough." Then open your eyes and see the same seven acres in seven years transformed into one of the finest little fruit farms in central Ohio, with a comfortable home made of cement blocks, and stained shingles, surrounded with beds of several hundred varieties of flowers and shrubs, walks and drives. This last picture is real and no longer can be called a "castle in the air," as my wife was wont to call it in our years of planning for making a suburban home. We at last found this favored spot located just outside of the city, high above it and bordering a beautiful body of hardwood timber, which has since been wisely purchased by the city for park purposes.

View of the house from the south. The piers for the pergola on the right are made of cement blocks and are covered with honeysuckle.

We immediately began planning our orchard, first plowing the ground, then planting tomatoes between the trees. They were all given thorough cultivation, with the result that we received enough for the tomato crop to pay all expenses, including the cost of the trees. This plan was followed for the first five years, with a cover crop either of rye or clover planted after the tomatoes were all gathered. In the meantime the trees were all thoroughly pruned and sprayed for insect and fungous diseases several times every year.

We found after five years of this treatment we were getting too much wood and decided to stop this rank growth and seeded the orchard to blue grass and clover. This check to their growth had the desired effect and the following year these trees were full of bloom. But a late frost damaged the fruit badly, although leaving a crop from which we sold cherries to the amount of $35; currants, $60; Japan plums, $299; peaches, $16; blackberries, $4.50; pears, $61; also $35 of honey from four hives of Italian bees which we purchased from a neighbor. This made a total of $510, not counting the amount canned for our own use. This was indeed, not a bad income from a "clay knob," which we were told would not "grow beans." But we evidently made good and were able to market all our fruit as shippers sometimes say "f. o. b. the orchard," and at a premium over other local fruit, and could not near supply the demand.

Last year the late frost again caught the trees in bloom, with the result that our second crop was a failure except for forty bushels of currants and a few bushels of pears. As the currants were planted in the tree rows they were protected some from the frost.

Now, right here is where a great many fruit growers fall down, saying there is no profit in fruit growing, and sell out to the other fellow. It is a case of survival of the fittest! The fruit grower who will use up-to-date methods, and not be afraid to spend $1 to make $5, can raise first-class fruit in most any state if he is willing to work and use the right methods.

After losing the most of the two crops from our orchard we concluded that something must be done to head off Jack Frost. By thorough tilling, spraying and pruning we had overcome most of the difficulties of growing fruit in a flat, frosty country like central Ohio, so the frost question

The tent in which Mr. Thew and family camped for three months before their new home was completed. The plums in the basket represent one day's picking and are of Abundance, Burbank, Chabot and Red June.

came next. We began experimenting last winter with several designs of fire pots, and finally decided on a model made by our local tinner which would burn fuel oil, and last for about six hours without refilling. The fuel oil cost us about 6 cents per gallon, delivered in barrels. Four hundred of these pots were placed in the orchard and filled with oil. An electric thermometer was purchased and hung on the northwest corner of the house, with a wire leading to our bedroom and there attached to an electric bell, while the thermometer was set at 32 degrees.

The first night alarm awakened us at 11:30 p. m. and in a short time all the firepots were doing their work of fighting Jack Frost, and quickly raised the temperature above freezing.

This spring has been one of the worst for late frosts ever known here, but with the aid of the fire pots we succeeded in saving a fine crop of fruit. We were compelled to make use of the pots on each of four nights in order to save the fruit, but our efforts were amply rewarded by a splendid crop of beautiful, clean and perfect fruit that could not be excelled by California's far-famed orchards.

Ohio. J. W. THEW.

Ask your neighbor to subscribe for The Fruit-Grower.

The Kimball Cultivator

Best Implement For Orchard Cultivation

Kimball Cultivator at Work in Orchard at Morrisania

For maintaining a dust mulch in an orchard and for keeping down weeds, the Kimball Cultivator is without an equal. Its blades cut about three to four inches under the surface of the soil, pulverizing the soil and leaving it level; all weeds are cut and germination of weed seeds prevented by leaving the soil in loose condition.

The Kimball Cultivator works well out from the horses and soil can be stirred close to trunks of trees, with horses walking out in the open. The Kimball takes a wide sweep at a time, and eight to ten acres of orchard can be cultivated per day. Thousands of Kimball Cultivators are now in use, and every person who has one recommends it. Mr. Irvine, editor of The Fruit-Grower, used two Kimball Cultivators at Morrisania last season; ask him what he thinks of them. Ask him also if the Kimball is not an ideal cultivator for any part of the country; he will tell you it is an ideal soil-stirring implement.

Clean Cultivation of Orchards Pays

It not only conserves moisture, but destroys the hiding places of insects, such as curculio, which are often serious orchard pests. Apples grown in cultivated orchards ripen later and consequently keep longer; they are of larger size and are usually smoother. The cost of cultivation is not excessive if Kimball Cultivators are used. Send for free booklet describing this great orchard implement—it's free for the asking.

W. A. JOHNSTON MANUFACTURER The Dalles, Oregon

The Best to Way Cook Lime and Sulphur Solution

For spraying fruit trees, shrubs, etc., cook your lime and sulphur solution in a Heesen Kettle; it cooks quickest—uses less fuel, and costs least.

Heesen Kettles

are used by thousands of fruit farmers, who endorse them as the best and most practical device money can buy—not only best for cooking spraying solution, but handy for a hundred other uses. Splendid for feed cookers for stock. Burn any fuel—set on the ground anywhere—no foundation required. Sizes 15, 20, 30, 40, 55, 65 and 75 gallon. Write at once for full information and low price, or send order for size wanted.

HEESEN BROS. & COMPANY, Box 81, TECUMSEH, MICH.

Good Harness Cheap

We Save You 20 to 25%

We make the best harness goods in our own big factory and sell them direct to you. You don't pay a cent of profit, except to us. We have the largest retail factory in the world, so the small profit we ask SAVES YOU from 20% to 25% of Your Money. We make better harness, too—you will say so. We have built this enormous business by 30 years of honest dealings. We also sell the

Best Buggies *and* Wagons

At Wholesale Prices

Don't give away your money — Our Big 152 page illustrated catalog fully describes just what you want and quotes amazing low prices. Don't buy anything in Harness or Vehicle line 'till you see it. Send your name and address today for a Free Copy.

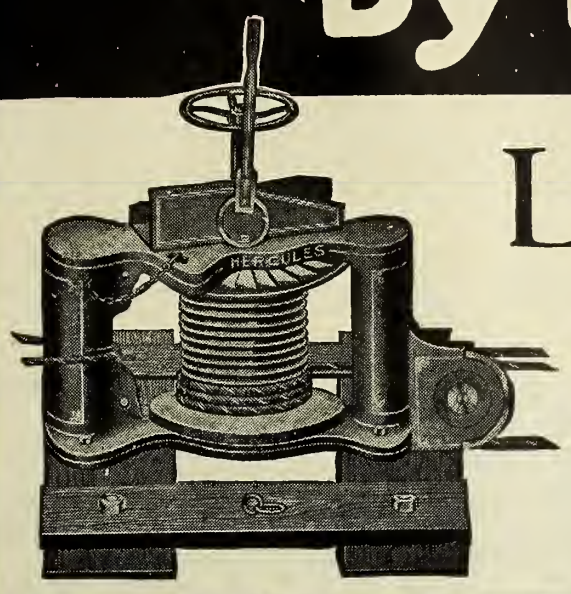
Dont Fail to get this Big Catalog—it's Free

ANISER HARNESS MFG. CO
DEPT. 61 ST. JOSEPH, MO.

In writing advertisers please mention The Fruit-Grower.

A Good Word for us when you write an advertiser shows him where his advertisement pays and so helps us. Please say it for **The Fruit-Grower**

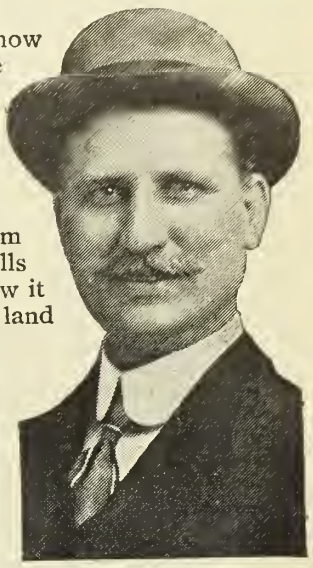
READ HOW Fortunes Are Made By Pulling Stumps



LET me send you my new, fine, free book at once. I want to show you *proof* of how you can make $1,281.00 profit on 40 acres the first year and $750 every year after, in extra crops and added value of land—by pulling stumps with the Hercules All Steel Triple Power Stump Puller—and how you can make *big money* in *your spare time* by pulling stumps for *your neighbors* or *by renting* your machine at a *nice fat profit.*

My book shows *actual photographs* and prints *actual letters* from *owners*, telling of the remarkable feats of the Hercules—how it pulls *any size stump*, *green tree* or *hedge* in less than five minutes—how it easily pulls *an acre a day*. Read how one man increased his land value from $25 an acre to $125.00.

Read why the Hercules is the *best investment* you can make now.



B. A. FULLER
President

From Michigan

From Louisiana

Hercules

All Steel—Triple Power STUMP PULLER

is the *only all steel Stump Puller made*. It is the only puller that has the single, double and triple power features, giving you three machines in one. There isn't a stump, green tree or hedge grown that the Hercules won't pull out without straining or breaking any castings. It's the *only* low-down constructed puller that has self-anchoring and stump anchoring features—the only one with double safety ratchets, that insure the absolute safety of men and team. I want to send you a Hercules on

30 Days' Free Trial

so you can *see* how *powerful* it is and how *easy* it *works*. I want you to *know* for yourself that the all-steel construction means 60% less weight and 400% greater strength than any cast-iron or "semi-steel" puller made. Besides that, I want to save you big money on the cost. I'm making a

Special Price Offer

to the first buyer in 5,000 different parts of the country. If I get *one* Hercules in each locality *more will surely follow* because of Hercules quality and efficiency and money-making advantages. So I can easily afford to sacrifice my profit on the *first* machine in each locality. Take advantage of this big profit and big saving opportunity *now*. Besides my 30 days free trial offer and money-saving price I give you a

Three-Year Guarantee.

that *means* something. The *all-steel construction*, *the triple power* feature that saves your team and gives a tremendous increase of power, the *double* safety ratchets and careful *turning* and machining of every part—all these things make it *safe* for us to *guarantee the replacement of any casting of a Hercules that breaks any time within three years, whether it is the fault of the machine or your fault.* Could any guarantee be fairer or stronger?

This Free Book Tells All

Just simply send your name and address on the coupon or on a postal so I can send you the convincing facts about the superiority and efficiency and value of the Hercules Stump Puller. Only 5000 of these machines will be sold at this remarkable introductory price so get your name in now. My new book is a beauty. See the real pictures, from 25 different states, of big stumps it has pulled out like you would pull weeds. Read the many interesting letters from farmers, lumbermen and land promoters. I want you to get the facts.

Mail Coupon or a Postal

I'll send the book and special price offer by return mail. I'll tell you the best crops to raise on virgin land where stumps were before. I want to get my free book to you at once, so that you can read the remarkable facts about the Hercules All Steel Triple Power Stump Puller and how it does such splendid work making big profits for owners everywhere. *Mail me the coupon or postal* right now, before you forget, or take down the name and address and write me soon. Address me personally,

B. A. FULLER, President
HERCULES MFG. COMPANY
443 Seventeenth Street **Centerville, Iowa**

NOW Send Your Name and Address On a Postal or Coupon!

Hercules Mfg. Co.
443 Seventeenth St., Centerville, Iowa

Dear Mr. Fuller:

Mail me your free book and special price offer on the Hercules All Steel Triple Power Stump Puller.

Name .....

Address .....

State ..... R. F. D. .....

I would not trade my machine for any cast iron machine I ever saw, and I have seen several. We pulled a sound fir root in two endways that was 14 inches in diameter, just using the power pulley. We tried to break the machine when we first started, but we gave it up; it cannot be done with a fair pull.
JOHN F. LEE, Banks, Oregon.

Your outfit for pulling stumps has no equal. Five hundred dollars ($500) is quite reasonable estimate of the benefit it has been to me in the past forty-five days. I have positive reliable proof that I pulled sixty dead pine stumps, averaging eight inches in diameter, within two hours. As you see that was two minutes to each stump and I was operating at that time with three hands. This is much more than is needed for reasonable speed.
REV. J. E. CARSWELL, Blythe, Georgia.

I am using the great Hercules Triple Power Steel Puller. It is a complete and strong machine. We are pulling white pine trees and stumps and they have roots 15 and 18 feet long, and we do not think it can be beat.
W. J. BOOCHES, Bristol, Tennessee.

I have cleared the stumps off 12 acres this spring, pulled all I hitched to; haven't had a break of any kind and did the work with two hands and two mules. If I would have had more time, could have cleared off more, but could not get the time. I pulled one prize stump that had the largest roots I ever saw on any stump. One root 20 inches at stump, 20 feet long, 4 inches in diameter at small end and four more roots that were 12—16 inches in diameter at stump. The roots of this stump made one-half cord of wood without stump.
L. N. KYZER, Lexington, South Carolina.

FARMERS MEET IN INDIANA

The Purdue Short Course, held annually under the direction of the Purdue School of Agriculture and Experiment Station, Layfayette, Ind., closed its week sessions on Jan. 13th, after carrying on the most successful and comprehensive course of agricultural study ever attempted by Purdue. In spite of cold weather, there was a splendid attendance, nearly every county in the state being represented in the enrollment. One of the features of the week was the gathering in annual conference of the members of the Indiana Corn Growers' Association, State Dairy Association, Sheep Breeders and Feeders' Association, and the Indiana Live Stock Breeders' Association, and the attendance of these members at the various lectures and demonstrations of the dairying, horticulture, household economics, poultry, live stock, and soils and crops divisions is certain to have a lasting influence on the agricultural prosperity of Indiana. Leaders in the Indiana short course work were also delighted to note the increased activity in household economics work, nearly two hundred women participating in this divisional portion of the week's schedule.

Several night sessions of interest were held in Eliza Fowler Memorial Hall, one of the most important of which was a lecture by Mrs. Nellie Kedzie Jones, of Auburndale, Wis., who, in her discussion of "The Girl Who Can" advocated the securing of a specialized education for the American girl, that she may properly take her place in the social, business, church and home work. Mrs. Jones also gave several culinary demonstrations, aided by Mrs. Henrietta M. Calvin, chief of the Purdue staff, Miss Gertrude M. McCheyne, of the agricultural extension department, and Miss Mary A. Matthews of Cambridge City, Ind.

"The Boy Problem," was discussed at the Friday night session by Prof. W. D. Henderson of the University of Michigan. He outlined the necessity of lenience for the boy during the formulative period of his life, and a persistency of training that will insure to the cultivation of a perfect manhood. President W. E. Stone of Purdue University, delivered an illustrated lecture of his tour through the Rocky and Cascade Mountains, on Thursday night.

Three hundred dairymen pledged their support to the oleomargerine law at the annual meeting of the State Dairy Association, and will extend every effort to secure the licensing of testers and the examination of all Babcock glassware at the next session of the state legislature. They will also endeavor to secure a fund of $25,000 for the equipment of the new dairy building to be erected at Purdue at a cost of $50,000 during the next few months. The Indiana cream shipping rates was also given attention and the association will work to induce lower railroad rates for Indiana shippers. W. E. Smith, of the Blue Valley Creamery Co., Indianapolis, delivered an address on this subject. The butter exhibit showed every sample to be of good manufacture, the only important defect being in the flavor, due to weather conditions.

The "Better Egg Campaign."

Interest in poultry affairs in Indiana is showing persistent growth, and this division of the short course was much in evidence. Special lecturers were secured and every phase of poultry raising given substantial discussion. The "better egg campaign," being conducted by Prof. A. G. Philips was favorably commented upon by all present, and the farmers shown the necessity of better eggs if they wish better prices and prompt markets for their product.

The live stock meeting was marked by a splendid address by Dean J. H. Skinner of the School of Agriculture on "Live Stock and Permanent Agriculture." He showed the economic advantage of live stock in the ultimate consumption of waste and the utilization of farm products. "As we travel over Indiana, we notice that the silo is much in evidence," he declared. "This means that better systems of farming have been introduced, and in every case it brings with it the care of live stock." He also showed the need of increased profits, that the farmer may have the same spiritual, business, social and educational privileges as the residents of the city. "Horse Power On the Farm," was discussed by Prof. J. L. Edmonds of the University of Illinois, who urged the conservation of the vitality and power of the farm horse.

At the annual corn show, at which nearly five hundred exhibits were in evidence, J. A. Stainbrook, of Franklin, Ind., was awarded the grand championship for his ten ear exhibit, and proclaimed "Corn King," to succeed Hon. L. B. Clore, the out-going president of the Corn Growers' Association. The exhibit was of good quality, despite the unfavorable weather conditions, and demonstrated the great interest being taken in corn growing in all parts of Indiana.

The Corn Growers' will devote their attention this year to the increasing of interest in alfalfa growing, receiving great encouragement in this work by the address of Hon. A. P. Grout, the "alfalfa king of Illinois," who appeared before the annual session.

Several boys' corn clubs attended the short course and competed for the Hon. E. H. Scott trophy, which was awarded for the best scoring record to Duncan Hamilton, a 19-year-old boy, residing at Morgantown, Ind.

"Indiana farmers must control the weed problem," said Prof. G. M. Frier, "as thousands of dollars are being lost annually because of this neglect." The speaker advocated the use of the Purdue seed analytical department, operated in conjunction with the U. S. Department of Agriculture, and which will furnish, without charge, purity and germination tests on all seeds sent them. The study of various weed seeds and the sorting out of small packets of these into proper groups formed an interesting feature of the soils and crops division work.

Awaken Fruit Interest.

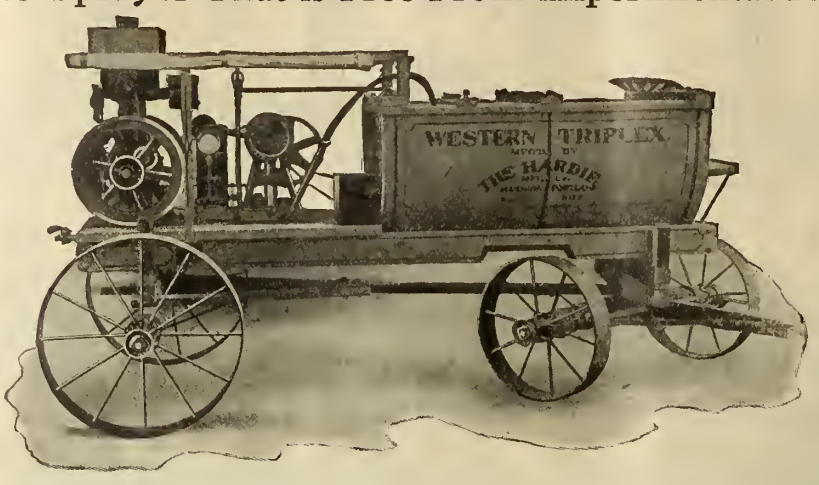
The horticultural work was extensive and interesting, and Indiana is due to have a great horticultural awakening. Fruit growers were shown, by Prof. C. G. Woodbury, and his corps of assistants, that Indiana is splendidly adapted to the growth of peaches, apples and small fruits, markets are close at hand, and freight rates from $250 to $300 per car less than on shipments from the western markets. As a tomato and potato growing state, Indiana also offers splendid advantages, due to the available markets, the ease in production and the high prices being offered for good crops by reliable buyers.

"The state has entered on an era of agricultural progress," said Prof. G. I. Christie, at the close of the Short Course. "We will lose no time in continuing the work so well started. Educational trains will reach nearly every farming center in the state during the next four months, taking further knowledge to the farmers of the possibilities of their land. The best lecturers of the extension department, station and school staff will accompany this train, and impress their audiences with the necessity for a more

The Hardie Sprayers

The Sprayer That is Free From Experimental Risk

5,000 Hardie Power Sprayers are in use Today and over 25,000 Hand Outfits



The Hardie is found in the best orchards of this country. There is a reason and we want to tell you what it is

We want to tell you about our Free Trial Offer. We know what our sprayers will do and want an opportunity to show you. We take all the risk, you take none. Our 64-page catalogue is the most complete spray pump catalogue ever issued. Our booklet entitled, **"SPRAYING"—How, What With and What For—** is full of things you ought to know. These publications are ready for mailing and are free for the asking. **Write today.**

THE HARDIE MFG. CO., Main Office and Factory HUDSON, MICH.

Beck Sprayers

Lead the World in High Pressure and Efficiency

Our 1912 Outfits maintain 250 and 300 pounds working pressure in the field without the least indication of over-strain.

Mr. Fruit Grower: You can save money, time and trouble by purchasing one of our power sprayers.

Send for Descriptive Catalog of our power and hand sprayers and accessories.

Beck Sprayer Company

Lansing, Michigan

GIVE YOUR PLACE A HOME-LIKE LOOK

Don't forget the *comfort* side of the home; a few shade trees, a hedge of California Privet, a clump of shrubbery or a bed of roses cost very little, but add wonderfully to your comfort and pleasure, and your family's. *They make your place worth more, in cash, too!* Our location, our knowledge of trees and plants and our long experience will help you get what you want. Our Catalogue tells all about fruit and shade trees—what to plant, and where, and how. It's free.

P. J. BERCKMANS CO., Inc.
Fruitland Nurseries
Box 1070 F, Augusta, Georgia

persistent search for agricultural principles, in other words, the holding of a perpetual 'short course' in every Indiana farm home."

JAMES DITCHBURNE.

Indiana.

Virginia State Horticultural Society Meeting.

Never in the history of Virginia agriculture has so much interest been shown as is being shown by the fruit growers of this state. The meeting of the Virginia State Horticultural Society held at Harrisonburg, on Jan. 10th and 11th, in point of attendance and intense interest shown, far surpasses any previous meeting the society has held. For the past five years the work of the society, and likewise the membership has grown by leaps and bounds, until now the society has on its roll over 1,000 paid up members.

The program was full and exceedingly interesting. Prof. H. A. Surface of the Department of Agriculture, Harrisburg, Pa., read a paper, "Orchard Cultivation, Methods and Implements." It was just what every one wanted and needed. Many conditions were brought up and a plan as how best to overcome such obstacles in each were given. Prof. Surface is illustrative of the type of man that is filled with practical education from the field, as well as the scientific side. His wonderful range of experience and observations make it easy for him to answer the most intricate problems the fruit grower puts to him, and in such a satisfactory and convincing way. Prof. Surface believes in making the land pay for its cultivation, if nothing more by a systematic rotation of cultivated crops.

Later in the program Prof. Surface further interested his large audience in a talk on "Insect Enemies of the Orchard."

Prof. H. L. Price, Horticulturist of Virginia Experiment Station, read a paper on "Profitable Crops For a Growing Orchard." Prof. Price is a staunch advocate of eliminating the orchard of the "Star Boarder" type. In all cases he advises making the orchard pay for its cultivation, and gave many illustrations where an orchard had been made to return a large dividend and still was much better for the cultivation. He advised suitable rotation of cultivated crops every year. Among the crops advised as suitable for growing in the orchard were peas for the cannery, sugar corn, potatoes, onions, tomatoes, strawberries, and all truck crops, always having a cover crop of either rape, crimson clover, or rye on the land during the winter.

Mr. G. A. Drew of Greenwich, Conn., gave a very interesting and timely talk on "Treatment of an Old and Unprofitable Orchard." I am sure that many of the fruit growers who listened to him, and who have variations of the neglected old orchards on their places, that he described, and which with a very small outlay indeed can be made very profitable, will go home with at least a determination to do likewise with their own neglected trees, that undoubtedly have many profitable crops locked up in their branches, and many years of usefulness before them.

Dr. S. W. Fletcher, Director of the Virginia Experiment Station spoke on "The Outlook For Fruit Growing In Virginia." He gave a very conservative talk, in no way discouraging to the man who has gone into fruit growing, not as a-get-rich-quick proposition, but has planted trees because of the love of it, and who expects to take care of his orchard through years of glutted markets and discouraging price, that are sure to come.

Hon. H. M. Dunlap, of Savoy, Ill., spoke on "The Value of Cross-Pollenization, and How to Obtain It." It was his idea that very few fruit growers in their planting took half enough consideration of this important subject that its value merits. He unhesitatingly advises against setting out large solid blocks of any one variety, but to systematically mix the varieties, and thus assist nature in this important operation.

Dr. E. A. Back, the state entomologist, gave much in detail the interesting work of the Crop Pest Commission, and of the work before the Commission unaccomplished. He solicited the co-operation of every progressive fruit grower in the state. All of the above together with many more specches were delivered much to the delight of the large audiences, and all felt well repaid for their time.

The apple show was not up to the high standard set by last year's beautiful show. Owing to the extreme cold weather many of the apples intended for the show were frozen in transit, and many more intended exhibitors did not ship their apples on account of the cold weather. What the show lacked in number of exhibits was well offset by the quallty of what was exhibited.

The Virginia Experiment Station had an educational exhibit on display that created a great deal of favorable comment, the object being to more closely familiarize each grower with the habits of insects that they are compelled to combat to raise good fruit. They want every fruit grower when he goes into his orchard with a spray outfit to know just what he is doing.

The spray machinery, spray materials, and nursery exhibits afforded the fruit grower an object of comparison that cannot help but be of profit to him, if he would only use his eyes. This they were doing, and asking questions, too, and doing a lot of thinking, besides.

A furniture store of Harrisonburg offered a barrel of apples to the girl who took advantage of Leap Year, making a proposal and be duly accepted and date set for the marriage. It is said that there were so many duly qualified winners of this one barrel of apples, the donor of the prize decided to divide it up giving each one an apple as long as the barrel lasted, but when he came to find out that he didn't have enough to go around, one apiece, he withdrew his prize in disorder. R. H. CLEMMER.

Virginia.

Hints for the Gardener.

1. Begin to plan now on your spring work. Send for seed catalogues in order to decide what you are going to plant.

2. Send for your seeds early and test them long before you plant them both for purity and germination. Weak seeds are dear at any price, for from them spring weak plants.

3. If you are going to use any manure purchased from the city, do not fail to pile it up and allow it to rot before it is hauled onto the land. Manure coming from livery stables, or other places where hay is likely to be purchased from several sources, is often a fruitful source of weed infection. If such manure is allowed to ferment well, the most, if not all, of the weed seeds will lose their power of germination. The pile should be turned over from time to time in order to prevent over heating and the consequent loss in the value of the manure.

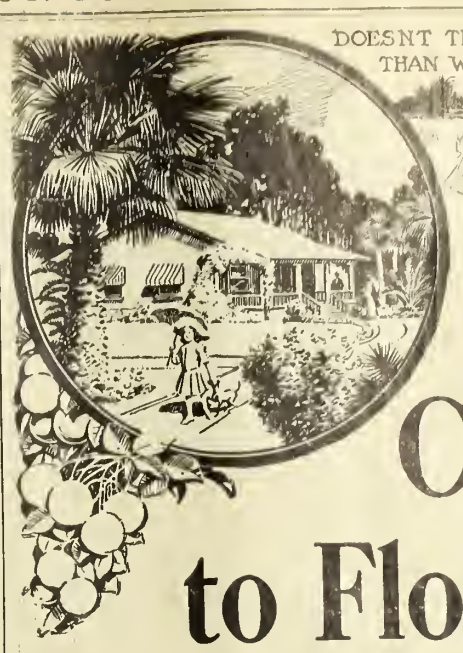
4. Plan your garden in such a way that there will be a good division of labor throughout the season.

5. Repair your hotbed sashes. Replace broken panes and fasten the loose ones in. Imbed the panes in putty and nail them in but do not putty them in for the rain and frost will crack the putty off if you do. Do not lap panes over one-fourth of an inch, the water and frost will get under and cause you trouble there, too.

6. Repair or make any crates or boxes that may be needed and see that all the garden tools and machinery are put in good repair for the spring and summer.

7. When you send for your seeds don't forget the importance of a crop rotation in your garden. Remember that among the many advantages of crop rotation are the avoidance of insect pests and fungus diseases, the ridding of weed pests by intensive cultivation, the balancing of the soil elements by growing crops of different food requirements, and the addition of nitrogen to the soil by growing leguminous crops. O. M. OSBORNE.

Agricultural Editor, Idaho Experiment Station.



DOESN'T THIS LOOK MORE LIKE LIVING THAN WHAT YOU'RE DOING NOW?

Come to Florida and Live Like a Prince

on a thriving fruit or truck farm all your own, within easy walking distance of the swiftly growing city of Tampa itself.

Right here in North Tampa where you can pick out a model 10-acre farm for $1 an acre per month—that's only 3 1-3 cents a day on each acre, less than a single Northern carfare!

Right here in North Tampa, where soil, climate, water, schools, churches, transportation to local and Northern markets—where all these vital features are exceedingly inviting, enjoyable and favorable. And this is equally true whether your purchase is made purely as an investment or for the sake of living like a prince.

Right here where grapefruit alone is yielding a return on the money invested that will simply open a Northerner's eyes! This county alone, as the U. S. Government report shows, produces over $680,000 worth of grapefruit in a year. Can you wonder that North Tampa is universally known as a most remarkable grapefruit district, and that many a winter-weary Northerner is living like a prince—

Right here were fruit, vegetables and poultry thrive so abundantly; four big crops of fruit and vegetables every year! Turn to the big double page in our book on Florida (the coupon will bring it, free) and read "What you can do with a single acre in Hillsboro County, Florida." This shows you just what you can raise here most profitably, tabulates the average yield of each crop, shows actual cost of clearing, planting and harvesting; and even includes a valuable calendar of dates for planting and marketing. With this accurate information before you, you can select any number of crops that will yield you a princely income—

Right here where 8 railroad stations are already on our North Tampa tract, three important railroads cross it, and Uncle Sam gives daily free delivery of mail. Get the point? Practically a suburban proposition, but at country acreage prices.

Socially, from the investment standpoint, and from that of a constant hungry market, these features are invaluable to you. Tampa, already over 50,000 population, is shut off by Tampa Bay from southward growth—its logical trend is right toward our townsites. That's why its a case of buy now if you want to live like a prince—

Right here where hunting and fishing in this sportsman's paradise add their zest to the joys of outdoor work and outdoor life—to say nothing of their contrast to the meat bills of the shivering, struggling North!

Your money back if you want it. Take ample time for investigation, but make your reservation first, while the best land is available to choose from. The terms we will offer you are a striking evidence of our policy of satisfying every buyer through and through.

These letters from your future neighbors tell the story. When you send for our Florida Book we'll enclose you complete copies, if you like, so you can get the full benefit of their experience. Then, if you wish, we can give you the addresses of hundreds of happy purchasers, many of whom have already moved to their new North Tampa homes.

Listen to this extract from the **Mayor of Tampa's** letter: "I consider the property of the North Tampa Land Co. to be worth all they are asking for it, and I also consider it adapted to growing grapefruit, oranges, etc. It is conveniently near Tampa, is dry and healthy. I have recently purchased some land in the same section myself."

And here's what a **Railroad President,** the head of the Tampa & Gulf Ry., says of our land: "In buying this large tract the North Tampa Land Co. has, in my opinion, acquired the very best lands in South Florida. Located so very near to Tampa itself, these are beyond doubt the best properties now being offered to settlers. I know of no lands so splendidly adapted to growing grapefruit, oranges and all kinds of citrus fruits. I feel this section of the country, with its excellent transportation, its good roads and nearness to the city, will populate itself rapidly. Both my railroad and my Mill Co. will extend the North Tampa Land Co. every facility at our command."

"My extensive Florida trip and my investigation of the 40 acres purchased from you," writes Mr. L. S. Meyers of 5914 Winchester Ave., Chicago, "convince me your tract is the very best it's possible to buy. I'm more than pleased."

"Merchandise right here in our general store," writes Dr. W. J. Hood, now of Stemper, Fla. (one of our thriving towns), "is cheaper than in the North. My new cottage is about completed. This place looks very promising."

But you'll want to read the whole of these letters—to a land-hungry, home-hunting man, they are as full of help and encouragement as a Florida Orange is of juice!

Now's your chance to give yourself and your folks a fresh start in life. Florida is full of happy, prosperous land-owners—many new settlers from the North—who are meeting with such success they're utterly at a loss to know why **you** persist in shivering and slaving away in the crowded, rent-paying North.

Don't let your chance slip past you this time! Send us TODAY (protected by our money-back guarantee) your remittance for $1 per acre on as many acres as you think you want. Or fill in and mail the attached money-bag coupon. It entitles you, as a reader of The Fruit-Grower, to one of the most accurate, interesting, up-to-the-minute books on Florida ever published.

North Tampa Land Co.

1128 Comm'l Nat'l Bank Bld.

CHICAGO

WINTER WORK FOR FARMERS

Years ago I thought of winter on the farm as simply time lost—three months or more of time just thrown away doing chores, chopping wood, and killing time generally.

Today the farmer who plans his life aright need not feel that at 80 years of age he has only really lived 60 years, for nearly every winter month may be made a useful and joyful part of life.

One of the most serious problems of the farmer now is the erection of new buildings or the repair of old ones. I find all my time from late October until too cold to work at carpentering taken up in the repair of our own buildings, the erection of new ones or like work for neighbors. Lumber has gone up in price from a third to a half of its former price and labor has doubled. Forty years ago my father paid a first-class workman $1.50 per day of ten hours for work done on our house, today, such a man would be hard to get at $3.36 per day.

Just now I am engaged in building an addition to our barn. This we shall use for a horse barn, place to harness in and the like. The building is 16x18 feet with a small extension to join the main barn. We cut the timber on the farm—one way to make the "old farm pay"—hired a handy man to help on rough work and found the actual money cost of the whole, not including the value of the timber on the stump which would be some $12.00, to be about $50.00 to $75.00. The cost of lumber alone if bought at the lumber yard would be from $75.00 to $100.00, and the cost of carpenters about as much more.

Another good winter's job is to build an ice house and cut the ice used by the family. It is surprising how quick and easy one can fill an ice house 14x14 feet outside measurement, 12x12 inside, and 10 feet high. This will hold 200 cakes of ice, enough for two or three families and can be filled by four men and horses in two or three days.

I have been asked repeatedly this fall if peach trees could be trimmed in the fall. I never do that since it is far better for the trees if trimmed just before the sap starts in March, but where I have old apple trees that usually get neglected if not trimmed in the winter I prefer to trim them in warm spells in the fall or winter and doubt if much damage is done to the apple tree if thus treated.

I fully believe in having a big supply of fuel worked up ready for the stove every winter. The poorest economy I have ever had the misfortune to see is the fuel question left until summer, while the good man of the house is chopping wood at $1.00 per cord or hauling logs at $1.00 per ton of 40 cubic feet, with the mud half-way to the hubs.

The hen houses need twice the care in winter since the droppings must be kept cleaned out and clean gravel put in before the hens are confined in their houses for the winter.

Above all the long winter evenings give a splendid opportunity to read extensively and study hard; for the farmer never graduates from his school. I find a veritable mine of information in reading the various agricultural bulletins. Often I am surprised when I attend a lecture or demonstration of something valuable to the farmer, given by the professors of our experiment stations, to see how familiar I was with the subject myself simply because I had read the clear statements written in bulletins and had the subject still more fixed in my mind by photographs that were as distinct as the demonstration itself.

One may get quite a little knowledge of plain carpentry, too, by studying a guide and asking a little help of someone who understands "framing."

I find the all important job for me is to learn to think. I got a lot of help along this line by reporting yearly to the Department of Agriculture at Washington, on the subject of fruits; the time of opening their leaves, time of blooming, of ripening their fruit, the keeping quality of the fruit, etc. This led me to see how very little I had ever really seen on the farm and how I could improve the time both summer and winter.

At the present date, January 3, I have still a lot of things to do in the milder winter days. My strawberry bed is not yet covered with mulch, my apple trees yet untrimmed and at the first intimation of spring I shall spray my apple trees to kill the scale which is getting bad again.

If February goes by with no temperature lower than 10 degrees below zero I shall order my fruit baskets, get my labels printed and stick them on so as to be all ready for the busy season. There is plenty of pleasant employment on every farm and at every time of the year if we only plan things right.

ALBERT F. TENNEY.

Movable Agricultural Schools.

The month of December marked a new and important step in the development of practical agricultural education in Washington. The people of Lynden, Whatcom Co., Wash., in co-operation with the Agricultural Extension Department of the State College, held a six-day dairy school. In like manner the people of Cashmere conducted, a six-day horticultural school. The college furnished the instructors and the communities provided all local accommodations, equipment and supplies. The Great Northern Railway furnished a special car for the transportation of apparatus and equipment.

Both the schools received the enthusiastic approval of their respective communities and both paid out financially. Better still, each of them left a strong permanent influence for better agricultural and improved rural conditions.

At Lynden, December 11-16, over 200 farmers and farmers' wives enrolled for the school. The average daily attendance was 150. Several farmers drove from eight to twelve miles each morning and evening, while others came in on the train. A number of rural schools excused their older pupils and allowed them credit for attending the course. Nearly every man had cows to milk and chores to do, but they hustled and every morning the lectures began promptly at 9:20. The laboratory and demonstration work concluded at 3:45 each afternoon. Five members of the college staff and one assistant gave instruction in dairying, soils, poultry and home management. At the close of the first day's work several men said, "Well, that lecture on soils and this afternoon of cattle judging have been worth the cost of my ticket for the whole week."

At Cashmere, December 18-23, 300 people registered for the course, while the average daily attendance was above 200, and just the week before Christmas. There the work was in charge of seven members of the college staff and instruction was given in the various phases of fruit growing, orchard pests, soils, fertilizers, poultry and home management. Special sessions devoted to fruit marketing and irrigation were addressed by the leading authorities of the state on these questions. The lectures began promptly at 9:30 each forenoon, while the afternoons were devoted to practical field and pruning work in the orchards. As at Lynden the interest was intense.

The sole purpose in all work of this sort is the rapid and permanent improvement of agricultural conditions in the state. The movable school has demonstrated its value and the Extension Department of the State College hopes to conduct several such schools in different parts of the state during 1912.

Secretary F. Cranefield, of the Wisconsin Horticultural Society, in speaking of the varieties of apples suited to that state says, in a recent issue of "Wisconsin Horticulture": "Stick to the fall apple, brother, it is a safe bet. What we want is a short life and a merry one. Grow right, pack right, assassinate the dishonest commission men, root out the farm orchard, except enough for Jack and Jill, and the Winconsin fall apple has everything else in the apple line beat a milllon miles, east or west."

Just Read These Three Letters

And You Will Be Convinced

McMILLAN CITRUS NURSERIES

Frost Prevention Company, Alhambra, Calif., Jan. 8, 1912.
Bank of Italy Building, San Francisco, Calif.

Gentlemen: I used 150 of your Bolton heaters the night of the big freeze, December 25th, in my nursery, and consider them largely instrumental in saving me 12,000 young trees they protected. I also used them in a block of 30,000 young seedlings, lately budded, and got fine resultant protection. They are the handiest smudging device I know of. Yours very truly, CHAS. C. McMILLAN.

CORONA LEMON COMPANY

Frost Prevention Company, Corona, Calif., Jan. 5th, 1912.
Bank of Italy Building, San Francisco, Calif.

Gentlemen: We are writing to advise you that we are wonderfully pleased with the result we obtained in our lemon groves this season by the use of your two-gallon Bolton heaters.

We had eighty heaters to the acre on eighty acres of our orchard, and find that there is no damage that we can see to these trees or young fruit, while that part of our grove that we did not have equipped with pots, although on higher ground, is very seriously damaged. We have saved many times the cost of the entire expense of equipment this year. Yours truly, S. B. HAMPTON, Mgr. Corona Lemon Company.

10,000 Bolton Heaters Used

LARGEST LEMON GROVE IN THE WORLD
LIMONEIRA COMPANY

Frost Prevention Company, Santa Paula, Calif., January 11, 1912.
Bank of Italy Building, San Francisco, Calif.

Gentlemen: I acknowledge receipt of yours of the 8th inst., inquiring as to our experience with Bolton Orchard Heaters during recent cold spell. I told you when I saw you in Corona recently that I would be glad to give you testimonial in regard to the efficiency of the Bolton Orchard Heater as a means of controlling low temperatures and preventing damage by frost.

As I coutinued my trip through the Riverside, Colton and Rialto territories the great injury which I saw by frost damage there makes me feel it my duty to give our experience, and call attention to a method of handling low temperature which I believe effective, and by means of which I believe most all, if not all, of the damage which I saw could have been avoided.

Our property, before we bought Bolton Orchard Heaters, was equipped on all of the low lands with 112 coal baskets to the acre. We had had so many times when our margin of safety was so small that we determined to add to our equipment. We therefore purchased 56 two-gallon Bolton Orchard Heaters to the acre, and have had ample opportunity to thoroughly test them out during the recent cold spell. While our coal baskets served us very well, we are convinced that the distillate pot has many points of advantage over the coal.

During the last cold spell our method was to light 56 coal baskets to the acre early in the night before the temperature got very low, and then whenever we saw that that amount of heat was not sufficient to keep the temperature from falling, we would light the oil pots. We raised the temperature with 56 oil pots and 56 coal baskets burning at the same time, eleven degrees, when thermometers all around the zone fired were falling.

The principal points of advantage in the oil pots are, first, ability to get the maximum amount of heat almost immediately; second, ability to control the heat after lighting by covering up the oil pots and saving fuel in case the temperature should rise high enough so that heat is not in need; third, easy to handle; fourth, smaller expense as compared with coal. We estimate that the oil pot can be handled for less than one-half the expense of the coal basket.

Anyone having cold ground should equip with not less than a two-gallon oil pot to the tree, and, if extremely low temperature, 100 to the acre would be better. We found that the two-gallon pot would burn and give off a good heat from eight to nine hours. Yours very truly,
LIMONEIRA COMPANY, By C. C. TEAGUE, Mgr.

25,000 Bolton Heaters Used

BOLTON ORCHARD HEATERS

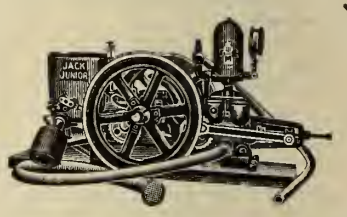
The Frost Prevention Company

Main Office: Bank of Italy Building, San Francisco, Cal.

107 So. Broadway, Los Angeles, Cal. **109 Temple Block, Kansas City, Mo.**

Fairbanks-Morse Spraying Outfit

KILLS INSECTS, SAVES FRUIT



You must spray to secure perfect fruit. Use a Fairbanks-Morse high-pressure sprayer and do the work quickly and thoroughly.

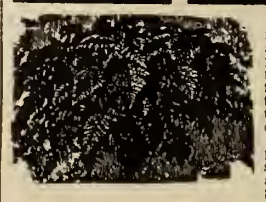
The above 1 H. P. Gasoline Engine outfit will surply three ¼-in. Vermorel spray nozzles at 200 lbs. pressure, which is the pressure required for effective spraying for scale diseases. The Deluge pump gives steady pressure. Entire outfit compact, strong and easily moved about the orchard. Will give splendid service for years.

Our Catalog No. SF953 describes this and larger outfits and tells just when spraying should be done. Write for a copy today.

Fairbanks, Morse & Co.

Kansas City Denver Omaha
St. Louis Chicago

Japan Fernball



A beautiful fernery for the window — or an exquisite centerpiece for the dining-room table. We send full directions "How to grow and keep these lovely ferns successfully."

Medium size, postpaid, 25c. Extra large size, postpaid, 50c, and our Catalogue, Spring 1912.

Send us ten cents and receive by return mail Our Ideal Garden Book for Spring 1912. 104 beautifully illustrated pages. Art cover and full list of the Season's Novelties in Seeds, Bulbs, etc., together with a liberal packet

Spencer Sweet Peas

Any color you choose, or mixed. Address

H. H. BERGER & CO.

Established 1878 70 Warren St., N. Y.

PRUNING Book by Professor Bailey. Tells everything about pruning. You need it. Price $1.50. The Fruit-Grower, St. Joseph, Mo.

THE NATIONAL PLANT PROTECTOR

FOR ALL KINDS OF SMALL PLANTS! RAIN, SUN AND WIND PROOF.

Reap what you plant! Do not take unnecessary chances, when you can avoid same, by helping with a protector. Profit by the gain in maturity. Remember the "Early Bird catches the Worm." Full information and sample sent on receipt of 5cts. Only by NATIONAL PAPER BOX CO., Kansas City, Mo.

For Beauty, Fragrance and Free Blooming Qualities

Harrison's Hardy Garden Flowers

can not be excelled. His collection comprises only the tested varieties of the choicest old and new Perennials. Ten acres in hardy flowers. Prices lower than ever before. Special price made on Decoration Day bloomers.

We can now furnish seed from our own flowers.

A choice selection of
ORNAMENTAL FLOWERING SHRUBBERY,
SUMMER BLOOMING LILACS,
EVERGREENS, FRUITS

Catalogue sent upon request.

C. S. Harrison's Select Nursery Co.
YORK, NEBRASKA

GRAPE STORAGE EXPERIMENTS

Secretary Wilson calls attention to the very important advance accomplished this season in the progress of the table grape storage experiments being conducted by the Bureau of Plant Industry of the Department of Agriculture. Two carloads of Red Emperor grapes were packed and shipped by Mr. Geo. C. Roeding of Fresno, California, for holding in cold storage in accordance with the results of the Bureau investigations with a view to testing the commercial application of the work. The sale of these grapes occured during Christmas week in New York and Chicago, where the fruit had been in storage for over two months, and very satisfactory prices were obtained, averaging $2.57 per drum or from 8 to 9 cents per pound.

The Department grape storage investigations were begun six years ago with two objects in view: A study of the factors which affect the keeping qualities of table grapes while in transit and in storage and the possibility of extending the marketing season of California grapes by holding them in cold or common storage with a view to the possible replacing of the imported fresh Spanish grapes with the California product. The importations of fresh grapes from Spain during the present season amount to nearly 900,000 barrels which have sold at wholesale prices ranging from $2.50 to $7.00 per barrel, or from 5 to 15 cents per pound, the bulk selling at the lower price. Under ordinary conditions, most of the California table grapes must be marketed within a period of a little over two months and the early attempts to hold them in storage for the holiday markets did not prove entirely successful.

The Bureau investigations have shown the importance of handling grapes with care to insure their being packed in sound condition. It has also been found that it is impossible to hold the varieties of grapes that are commercially grown in California any appreciable length of time without a filler of some kind. The Spanish grapes are packed with a filler of ground cork. As this material is both scarce and expensive in California, special efforts were made to obtain a satisfactory substitute. Many different materials were tested but only one has thus far proved wholly satisfactory. This is redwood sawdust, which is a waste product of the California sawmills. Much to the surprise and gratification of the Department investigators this material has proven even superior in many ways to the ground cork. It is found that the grapes hold longer and in better condition when packed with the redwood sawdust. Great pains have been taken to corroborate the results and the data have been consistent throughout. It was necessary to learn how to prepare the sawdust in order to have the grapes remain in attractive and salable condition. The sawdust must be perfectly dry and the finer particles must be removed.

A number of varieties have been under investigation, and naturally their behavior under storage conditions has been different. Of the varieties grown in commercial quantities, Red Emperor, Malaga and Flame Tokay have been found to hold best in storage. The length of time which these varieties may be held vary from sixty to seventy days for the Flame Tokay and Malaga, and from ninety to one hundred and ten days for the Emperor.

In the commercial test of the application of this work during the past storage season the grapes were packed in drums holding about twenty-seven pounds, and the work of packing and shipping was done largely under the supervision of one of the Bureau representatives. The drums were forwarded from California to Chicago and New York under refrigeration where they were held at a temperature of 32 degrees in cold storage. The Emperors proved to be the best for storage purposes and formed the bulk of the grapes sold for the Christmas trade. The best grapes of Flame Tokay may be held until Christmas, but the ordinary run of this variety will not hold in first-class condition beyond December 1. The Malaga varies considerably in its behavior in storage, depending upon the conditions under which it is produced. Some lots of this variety have been held in first-class condition until January 1 in past years, while others are not safe beyond December 1.

The value of this work to the grape industry of California is apparent when the full significance of the extension of the marketing season is appreciated. The production of table grapes in California is increasing and unless some way can be found either to broaden are area over which the fruit may be distributed, or to lengthen the marketing season, the industry will be face to face with a serious problem of over-production. When it is considered that this country uses large quantities of imported grapes, the demonstration of the possibility of replacing the foreign product by one home grown, is worthy of the most strenuous effort.

The possibilities of packing California grapes with the redwood sawdust filler for export are also recognized and efforts are being made to extend the marketing area by this means. A small test shipment of California Tokay Grapes shipped to England was made during the past season and the fruit arrived in excellent condition. The sawdust pack in drums is well adapted to ocean transportation, because the necessarily rather rough handling in loading and handling aboard does not affect the grapes when packed in this way, while the ordinary open crates are too weak to withstand rough handling, and in addition the grapes deteriorate during a long trip unless a filler is used.

It is expected that a considerable number of carloads of grapes will be packed for storage next season.

Stimulate Alfalfa in Canada by Prize Contest.

Alfalfa growing is to be given stimulants by the Canadian Pacific to hasten its establishment in Western Canada. The irrigation department of that railroad has just purchased for distribution to farmers in the great irrigation "block" 24,000 pounds of alfalfa seed (12,000 pounds of Grimm variety, 12,000 Turkestan). In order to extend the area under alfalfa the department decided to offer for competition among farmers on irrigated lands prizes amounting to nearly $1,000 in addition to which the winner of the first prize will receive a handsome engraved trophy.

The alfalfa will be distributed to farmers in the block to sow to an average of five acres. The area of soil to be sown was properly inoculated by the company free of charge to the farmer through the medium of his nearest "water master" and the seed retailed at actual cost. Professor W. H. Fairfield, superintendent of the Dominion Farm at Lethridge, who is a well known alfalfa expert, and probably Professor Atkinson from the Bozeman Agricultural College, Montana, will judge the contest and the score card as follows:

Grading and preparation of the ground 15 points, layout and effectiveness of water distributing system 10 points; thickness and evenness of stand of alfalfa and prospective yield 25 points; indication of thoroughness and inoculation by a healthy green color and absence of light or yellow patches 25 points; strong, vigorous and penetrating tap root and presence of nodules on root system 15 points, freedom of alfalfa patch from noxious weeds or any plants that would interfere with alfalfa 10 points, making 100 points.

The movement which has been gratefully appreciated by interested farmers will do much towards bettering farming conditions and lead to the ultimate destiny of the entire block which means small farms intensively cultivated. In this connection farmers are interested to know that the pioneer Alberta rancher, George Lane, has brought in 12,000 pounds of alfalfa and will sow nearly 600 acres to this rich feed.

Pyrox fills the barrel with the apples that used to go on top. Write Bowker Insecticide Co., Boston, for book.

The Guaranted Minnetonka APPLE

The latest triumph of apple culture, "THE MINNETONKA" thrives luxuriantly and yields prolifically in the most rigorous climate where all others fail. The fruit is very large, flesh tender, crisp, sub-acid, the ideal cooking and choicest desert apple, very small core, blight proof, HARDY AS AN OAK.

Edw. Erkel, Le Sueur, Minn., writes us as follows: "I have nothing but praise for the Minnetonka Apple, out of 9 trees purchased of you, 7 are alive and doing finely, was obliged to thin out fruit as it was too heavy for the trees, picked 10 bushels and there was plenty of fruit left."

C. Hennings, Willmar, Minn., writes: "The Minnetonka is a lovely apple, both in appearance and taste, and I think finer than the Wealthy."

WE GUARANTEE every tree of "The Minnetonka" to produce a bushel of fruit, and will replace free of charge, every tree that dies before this result is obtained. **CAUTION, none genuine unless bearing our seal.**

PRICES—4 to 5-foot trees, 75c. each; 3 for $2.00; 6 for $3.00; 12 for $6.00; by express or freight. Mail order size—one year old, 40c. each; 3 for $1.00; 6 for $1.75; 12 for $3.00, postpaid.

FREE BOOK contains the CREAM OF ALL THE GOOD THINGS for the FARM and GARDEN worth growing at the right prices. It is the leading SEED, PLANT and NURSERY catalogue. Send for copy it will save you money.

L. L. MAY & CO. - - ST. PAUL, MINN.

MAYFIELD NURSERIES—MOST NORTHERN IN AMERICA

Four Questions

Are you satisfied with your present catalog?

Don't you believe that a new and better one will put dollars into your pocket by helping to sell more stock?

If a man selling an improved machine that you use, could show you wherein that machine would be of benefit to you, would you hesitate to buy it?

If by paying a few dollars more for a high grade catalog, you could increase its selling value, don't you believe it would be good business judgment to do it?

Answer these questions honestly to yourself and we think you will agree the argument is good.

We are builders and printers of nursery catalogs, the kind that command attention. We are especially equipped to handle the work to the best advantage; design the cover, write the descriptive matter, furnish the illustrations and, in fact, handle the work entirely if you so desire. We have both a technical and practical knowledge of nursery stocks, botanical names and description of varieties.

We are able to give you better service than printing houses not so completely equipped.

Our prices are consistent with the class of work we give you.

Why not write to us today for information, suggestions, etc. Your inquiries will receive prompt attention. Don't neglect this most important part of your business. Write today.

THE FRUIT-GROWER

ST. JOSEPH, MISSOURI

ALFALFA Seed is sold by numerous persons; but there is a vast difference in quality which often determines the success or failure of a field. A too large portion of the seed sold is of uneven quality. You can profit by the benefit of our 20 years' experience in growing and handling Alfalfa seed. Acorn Brand costs a trifle more than some grades, but is worth many times the difference. Valuable information, Seed Book, samples and prices are yours for the asking.

Ross Brothers Seed House, 326 E. Douglas, Wichita, Kansas

Master's VIOLIN Free!

We will give you this superb Violin absolutely and positively free in connection with our great introductory offer. Be a Violinist. We will teach you in your own home by mail. Thousands of successful graduates. Violinists make big money. Special reduced price offer. open to all who write at once.

Free Violin Write today

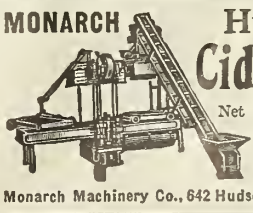
SLINGERLAND SCHOOL OF MUSIC
3662 Auditorium Bldg., Chicago, Ill.

STRAWBERRY PLANTS

Millions of Them Hardy, Healthy, Northern Grown Stock. Write for wholesale prices. Catalogue Free.

THE WILDHAGEN STRAWBERRY BEDS
Route 5, Waterloo, Iowa

MONARCH Hydraulic Cider Press



Net owners 25% to 100% on investment per year. Ask for Free Catalog and "Good Tip" booklet telling how.

Monarch Machinery Co., 642 Hudson Terminal, New York

THE FARM MOTOR TRUCK

A Motor Truck Owned Jointly Does the Work of Five Teams at a Fraction of the Cost

Practical use of a heavy motor truck is being made on the farms of Mrs. George H. Lewis and Alfred G. Lewis near Geneva N. Y. The truck used is a Pierce-Arrow with a worm drive, the vehicle being of the 5-ton type. The farms comprise 1,050 acres, devoted to the sheep and dairy cattle interests.

Bellwood Farms, the property of Mrs. George H. Lewis, comprises 350 acres. The White Springs Farm, the property of Alfred G. Lewis, comprises 700 acres. The truck is owned jointly by the farms and a ledger account is accurately kept of the tonnage.

The purchase of the truck came about in the following manner: In the spring of 1911, eighty acres were planted in peas for the canning factory at Geneva. The viners, or shellers, were located at the farm. At the time of harvest it took all the farm teams to haul the vines to the shellers, and the problem of getting the shelled peas, which are put into sixty-pound baskets, to the factory in the least possible time was solved by the use of the 66-horsepower Pierce-Arrow touring car owned by Mr. Lewis. The body of the car was removed and a rack holding fifty-two 60-pound baskets was built on the chassis. The harvest of the peas lasted for fifteen days. Shelled green peas must get to the factory without delay. The touring car solved the problem and the peas reached the factory in the best possible condition. An accurate account of the cost of transporting the peas demonstrated that a heavy truck for farm work would be a paying investment and a great time saver.

The 5-ton Pierce-Arrow, worm drive truck was delivered on September 1, 1911, and the following classes of freight handled by the truck have clearly demonstrated the practicability and reduced cost of transportation: Lumber, cement, sand and gravel, brick, cherries, apples, wheat, straw, hay and feed of all kinds, manure to the different fields, cabbage, potatoes, cord-wood, sheep and cattle to market, coal, baled shavings, milk to down town dairy. The modern farm has a large class of freight to handle and this truck is certainly adapted for a wide range of usage. The truck has also been used for filling silos and cutting corn stalks as well as hauling harrows on plowed ground. They have also used it for plowing.

From September 1 to date, December 1, the truck has run 1538 miles, using 376 gallons of gasoline and hauling 1,316,620 pounds of freight. It will be seen from this that four miles is the average distance per gallon of gasoline. The fuel cost for 1,316,620 pounds of freight at 12 cents per gallon equals $45.12. The following gives the total cost of operation for the above freight handled from September 1 to December 1, 1911:

Mileage—1538.	
Gals. gasoline, 376, at 12c	$ 45.12
Time of men handling freight and driver	225.00
Insurance on truck	24.00
Depreciation, at 5 per cent	40.00
Oil and grease	6.00
Interest on investment, at 6 per cent	48.00
	$388.12

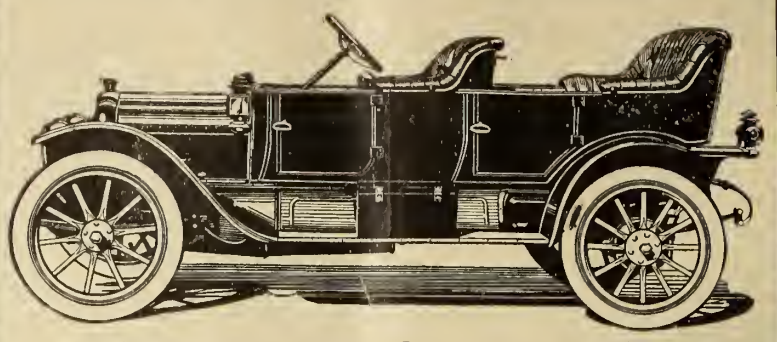
This cost has been materially reduced, as a new man who had never driven a motor vehicle had to be taught how to operate the truck, and of necessity a good deal of time was wasted, as the truck was not loaded to full capacity until the man became fully competent in its management.

The truck was put in operation at practically the end of the farm season. From April until September is the busiest time in farming. The truck on these farms makes it possible to keep the horses at their proper work and does the work of at least three teams. It hauls freight at much less cost than is possible with horses, but a greater factor even than this is the great amount of time saved. The farm work is better done; the crops are put in more promptly; and the harvest is much easier handled. In all road work to and from Geneva the truck easily does the work of five teams, but Mr. Lewis is certain that in general average work on the farm the truck will keep three teams more than busy.

New York. G. M. DAVIS.

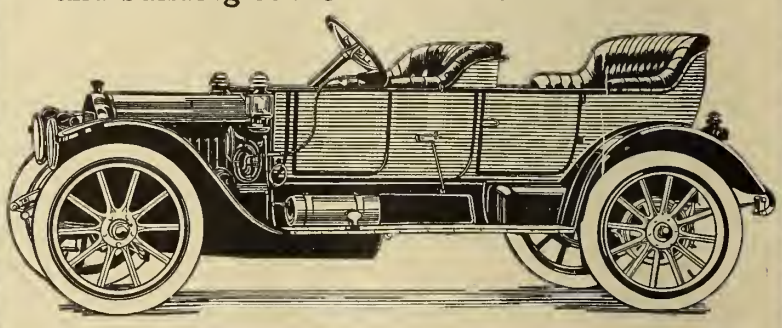
A Pierce-Arrow truck load of cabbage on farm of Alfred G. Lewis, near Geneva, N. Y.

The converted touring car on the White Spring Farm, near Geneva, N. Y., which first proved to Mr. Lewis the necessity for a motor truck.



The Farmer's Car—A White

THERE are certain fundamental advantages which the farmer demands of a motor car before he is interested to the point of buying. Probably no class of men are more critical of the mechanical principles involved than the farmers, because of their constant operation of farm machinery. To them—the simplicity of White motors—the total absence of complicated parts—appeals at once. They know it means that the engine is easy to care for—that adjustments are made without any waste of time or energy. Trained to value mechanical excellence as well as economy in operation, farmers are quick to grasp the possibilities of the medium-sized cylinders and the long-stroke engine of the White car—quick to see the economy in a transmission having four forward speeds instead of three. In other words, the farmers are better equipped by their experience to appreciate the designing and building of the White car.



A Farmer Wants the Best

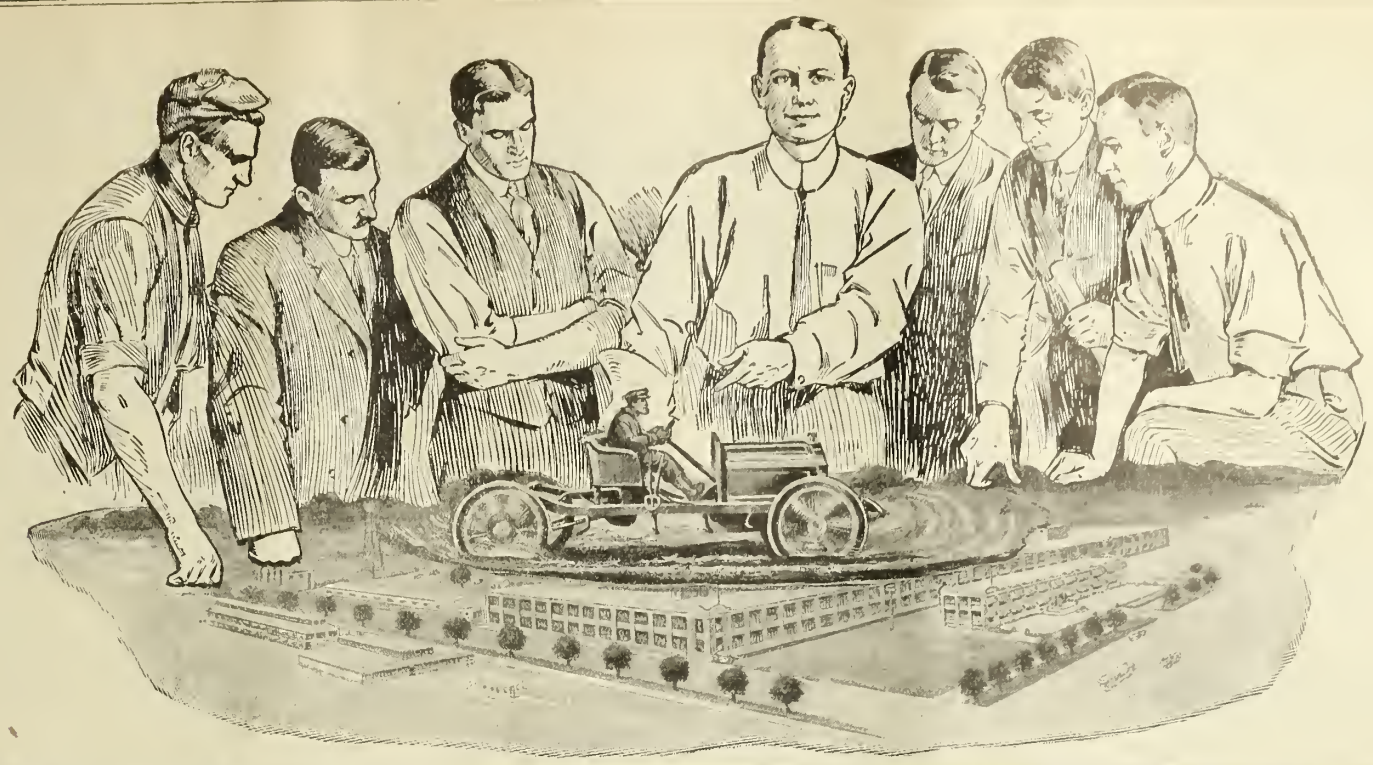
BEING a judge of principles and construction, a farmer is willing to pay for the car that comes up to his expectation. Size for size, or power for power, the White gasoline cars are the most economical motors to operate. No design has yet been found equal to the long-stroke engine—no method of building equal to the cast en bloc cylinders—no materials used equal to the chrome-nickel steels and vanadium steels, heat-treated. Even the frames of the White cars are heat-treated. Nothing but ball-bearings are used throughout. If there is a kind of steel—kind of radiator—any refinement of manufacture—which you know would make a car better, you will find it in the White, and that is why the White gasoline cars are so wonderfully efficient and cost so little to operate and maintain.

Let us send you our latest catalogue and testimonials of the actual experience of users—hundreds of them—they know.

The White Company

East 79th Street, Cleveland

Big orchards don't pay. A little orchard well cared for is worth a great deal more than a big one that has been neglected—and it is a better money-maker.



This Body of Engineers Build a *New* "33"—Self-Starting

Howard E. Coffin and his Board of Engineers have built their master car—a car you start by merely pressing a button.

These men practice the highest engineering principles the world knows.

Engineers from abroad come here to study under these men. Their chief—like Thomas A. Edison in electricity—drives the milestones of automobile advancement. He and his men in other years designed the motors for more than a dozen manufacturers. Eighty per cent of all the better quality American cars have on them features designed by Mr. Coffin.

He had *previously* built five famous cars—the industry's *leaders*. Each, in their time, was the car of the year. They were so far ahead of their day that several are still sold as leaders in their class.

The latest and greatest achievement of these skilled engineers is the ***New Self-Starting HUDSON "33."***

You Press a Button to Start the Motor

That explains the operation.

A child can do it as easily as it can push a button that rings an electric bell.

It is like switching on the current that runs an electric fan.

Yet the self-starting device of the New HUDSON "33" is not operated by electricity nor is it operated by compressed air.

It has neither the weight nor complications common to all starters of those types.

It weighs but 4½ pounds and has only 12 parts. Electric starters weigh 175 to 200 pounds—as much as the weight of an extra passenger. Compressed air starters weigh 60 to 75 pounds.

Starts Instantly in Winter

Our engineers tested all types of self-starters. None other was acceptable.

This one started the motor 98 times in every 100 trials. Thousands of tests were made. Cold weather did not affect it. A motor was kept in cold storage for a week. The temperature was 5 degrees below freezing. Ice covered the cylinders. But the motor started at the first operation of the starter.

Other types were not so successful.

Ask any owner of a New Self-Starting HUDSON "33" how his self-starter operates these cold days.

All distinctive features cannot be enumerated here. Their number is too great. But among them is an advance design which eliminates almost 1000 parts—Demountable rims—BIG tires—an accessibility that puts all important parts and all oiling places within easy reach. Enclosed valves, dust-proof bearings throughout. Fan in fly wheel. A clutch so good that drivers never know they have a clutch, because of its freedom from trouble.

The Quietest, Simplest and Handsomest of All

It is the quietest automobile built. It has power that will shoot it—with full load—up mountain sides—through sand and mud and always with a sensation of strength and of flying that is utterly lacking in many cars.

The springs are of the most flexible, yet non-breakable, vanadium steel. People compare the New HUDSON "33" in riding comfort to cars of double its weight and cost.

It is pronounced by experts as the most graceful in line of any car regardless of price. In finish, in upholstery and in every detail of luxurious convenience it ranks in the class of $2,500 automobiles.

Haven't you at least a curiosity to see Howard E. Coffin's New HUDSON "33?"

Its great simplicity will be a revelation to you.

At all the important automobile shows this year it will have its most advantageous display, for there it can, at close hand, be compared with all other cars.

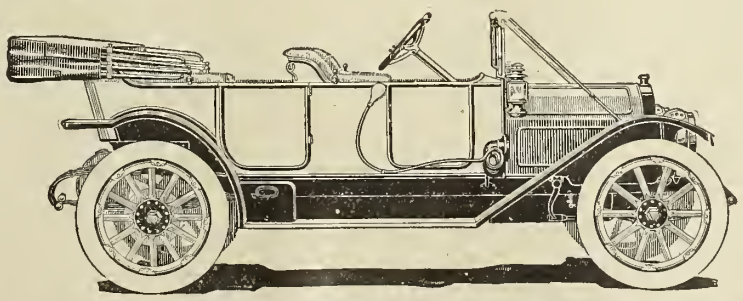
Printed descriptions—advertised promises and pictures are often too alluring and many cars do not fulfill the expectations the advertising has created.

We cannot do justice to the car in a printed description, and therefore ask you to go to see it, compare it with other cars you think well of.

You will marvel at the value Mr. Coffin has incorporated in this last creation.

Go see the New Self-Starting HUDSON "33" NOW. So popular was this last year's "33" that more than 2000 failed to get the cars they had ordered, for we could not build them fast enough.

We are leaders today in the number of new cars delivered and still the shortage continues. Better see the New HUDSON "33" before all these models too are sold.



The price for either of three models—Touring, five-passenger—Torpedo, four-passenger or Roadster, two-passenger, is $1600. Not a cent more is needed to equip either car before it is ready for use for top, "Disco" Self-Starter, Demountable rims, BIG tires, windshield, large gas tank, magneto—dual ignition system—and all things usually listed as extras are included. Write for illustrations showing how the New HUDSON "33" is simpler than any other car.

HUDSON MOTOR CAR CO.

7226 Jefferson Avenue, Detroit, Mich.

Your Orchard Deserves a Windbreak

A Spruce, Pine, Fir or Arborvitae windbreak around your orchard will eliminate nearly all windfalls and storm damage; go far to prevent frost and permit spraying and picking on windy days. Such a shelter-belt is worth three times as much as the outside row of fruit trees.

Shelter Belts Worth Five Times Their Cost

They conserve moisture, check destructive winds, protect stock from rain, sleet, wind and sun and make excellent fences. They prevent snowdrifts on roads and walks, make houses and barns warmer and save paint.

Learn How to Build Windbreaks

Get our 56 page Planter's Guide for 1912. We are evergreen specialists and grow more evergreens than any other firm in the world—as well as timber seedlings, shade trees, shrubs and hardy fruit trees. Our book and list of 50 Great Bargains free to intending planters. Don't wait till spring—SEND NOW for them.

D. HILL NURSERY CO. Inc.
EVERGREEN SPECIALISTS
Balsam Street Oundee, Illinois

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing

Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*

M. BRUNSWICK & CO., Rochester, N. Y.

Save Money on Berry Boxes and Baskets

Fruit and Vegetable Packages and Growers' Supplies of all kinds. Write for free money-saving catalogue and price-list.

Largest Factory of its kind in the country.
NEW ALBANY BOX AND BASKET CO.,
Box 104 New Albany, Ind.

BERRY BOXES

CRATES AND BASKETS, CHERRY, PLUM AND APPLE BOXES, CLIMAX BASKETS, BIG OR SMALL —AS YOU LIKE THEM.

We have the best equipped mill in the Northwest, and manufacture the **Ewald Patent Folding Berry Boxes**, the only folding berry box made of wood veneer that gives satisfaction. A liberal discount on early orders. A postal brings our Price List.

FRUIT PACKAGE CO. CUMBERLAND, WIS.

Get Rid of San Jose Scale

We guarantee it can be done with only one or two thorough applications of **San-U-Zay Scale Oil**. Easy to mix and apply. In use since 1907. Sold direct to you at wholesale prices. Special offer to trial users. Send for booklet C and learn what San-U-Zay is doing for fruit growers everywhere.

THE GARDINER-JOHNS COMPANY,
1132 Granite Bldg., Rochester, N. Y.

Strawberry Plants Forty-six Varieties

Many varieties in Raspberries, Currants. Early and Late Seed Potatoes. Standard vigor, hardy varieties: Northern grown. Illustrated Catalogue free.

Mayers Plant Nursery Merrill, Michigan

NEW STRAWBERRIES

1912 catalog free to all. Reliable, interesting and instructive. The **New Everbearers** and other important varieties. Address
C. N. FLANSBURGH & SON, Jackson, Mich.

FRUIT TREES

12 Strong Budded Cherry, only $1.00; 50 Concord Grape Vines, only $1.00. For long list of snaps and premiums, send for free catalogue, with due bill. **Benson-Omaha Nursery, Dept. 7, Benson, Neb.**

Money in Buying Best Nursery Stock Grown Trees, Vines and Ornamental. None grown that excel ours. Handsome catalogue free.
GRANO MERE NURSERY, BAROOA, MICHIGAN

FRUIT TREES FROM GROWER TO PLANTER. All kinds. Small sizes, 4c up. Best No. 1 stock cheaper than others. Extra fine Apple, Peach, Cherry. Est. 1858. Catalog free. **Fremont Nursery Co., Fremont, O.**

Secure and Profitable

These essentials of a good investment are combined in our

7% First Mortgage Gold Bonds

Paying Interest of 7%

payable every six months in coupons attached, which can be collected through your local bank. Issued in denomination of $100, and fully protected by the entire assets of the company. These bonds are dated July 1, 1907, and run ten years.
Write for full details and booklet.

THE FRUIT-GROWER
St. Joseph, Missouri
Capital Stock, $100,000.00, Fully Paid

In the Berry Fields

In his article on strawberries in the December Fruit-Grower, F. E. Beatty recommends an amount of fertilizers to the acre that would dismay many commercial growers. On soil that is rather poor he advises 20 tons of stable manure together with 900 pounds acid phosphate and 300 pounds muriate of potash. To those to whom this may sound excessive let us recall the statement of T. C. Kevitt, the advocate of the hill system. In the renewal of old beds, he uses 30 tons of stable manure for a mulch alone. This is going some further and leaves Mr. Beatty, who advises straw or marsh hay for mulching, quite out of sight.

For myself I have no fault to find with this high fertilizing for I have never been able to make the soil too rich except for the extra earlies and not all of these, for the Gill flourishes on high feeding, and the others may too if forced to make their runners late in the season.

As for commercial fertilizers they have never proved their value here in connection with plenty of stable manure and a naturally rich soil. In commercial centers I believe many growers are losing money by not feeding their plants liberally enough. Plants are a good deal like live stock; it generally pays best to give them all they will eat. Fertilizing can be done with no cash outlay, by turning under heavy crops of clover, and indeed

The fruit of Ealeagnus Longipes and an Early Richmond cherry.

there is no fertilizer probably quite so good for the health and quality of the crop.

Stable manure from livery stables means sowing billions of weed seeds that call for much scarce and high priced labor to subdue. Years ago when T. B. Terry, the potato grower of Ohio, turned his genius to the strawberry with phenomenal success, his only fertilizer was the same clover sod which yielded him a fortune out of potatoes. I remember he cut his wheat straw in short lengths for mulching. This would be ideal but is too costly for the commercial grower.

Mr. Beatty says "In the spring rake the mulching off the plants, leaving it close around the plants and between the rows." And following that, "Open the mulching just enough to permit the plants to grow without any interference." The latter injunction is the one to lay to heart. It is most important to resistance to drouth and the development of big berries that the mulch should hug right up against each plant, swathe it up to the neck. And the plants, too, will push their way through a thicker cover than might be expected. How thick this cover may be should be ascertained by experiment, but it should be borne in mind that loose long straw offers very little impediment to upgrowing plants that have considerable lifting capacity like all their class. A close raking off of the mulch, such as I have occasionally seen, is one of the most injurious forms of treatment that can be devised.

My young Cumberland raspberries planted last spring a year ago are not going into winter quarters as vigorous as could be wished. The drouth of last spring curtailed the growth of all plants and trees for it came just at the period of their rapid growth. How far this affected the raspberries I can't say but I am looking for them to reach spring with an unusual percentage of dead canes. I should like to experiment with the survival of the fittest by selecting tips only from those which endured the winter with the least loss of wood. In theory this should be the very best practice we could follow in endeavoring to increase the stamina and vitality of our plants. The principle of selection has always proved itself sound and it should be successful here.

The reds here are not subject to this drying out of their canes in winter. Speaking of varieties, the Worthy was one of the best this year and I am surprised that this berry has not been more extensively disseminated. It has good size and color, is productive and has strong vigorous cane. The Iowa or Eaton, was more dwarfish than ever under the drouth. How far its canes could be forced by high fertilizing I cannot say. Its bearing canes excel all other kinds in productiveness and its berries are the largest of all. Yet as it behaves here I cannot recommend it for market though elsewhere of course it might be of value. Its most serious weakness is its deficiency of wood growth. The short canes loaded with fruit allow the berries to lie upon the ground. The berries ripen very slowly, too slowly, and are subject to a soft rot peculiar to this variety. Still I should advise the trial of this well-marked kind for it may do better in other soils and climates.

The Manitou with its excessive growth was quite able to cope with the drouth. The season just suited its style and it bore a fair crop. Evidently I have not the best and most productive stock of this new sort but am promised it for planting next spring. The Cuthbert and Loudon did as well as could be expected from the season. The latter still maintains its reputation as the finest berry on the list and its foe, root-gall, has never invaded this place notwithstanding the many varieties tested. The Ruby has been grubbed out as worthless on account of poor quality. The Miller and King both bore well, the latter on young canes. So far as tried here, the King, Cuthbert and Worthy are the best of the lot, always excepting Loudon where it is not subject to root-gall.

The purple kinds I consider quite indispensable on every fruit farm and in every private collection. While their flavor is not quite so agreeable to most palates as the straight blacks or reds, they are certainly very good eating, and for canning, first-class. Their great productiveness gives them a high value for in this they exceed all other kinds. This they owe to their more vigorous growth, far surpassing either of their parents in this respect. No doubt they would rank much higher if it were not for their unattractive color with its dusty hue. I find they die back as readily as do the blackcaps, notwithstanding their much greater size of cane but their inherent vigor enables them to send up fruiting shoots in the spring that will bear a fair crop.

Schaffer's and Columbia have been tried here without noting much difference; both die back with equal readiness. Latter I procured the Haymaker and find it apparently quite re-

GET 35c TO 50c MORE PER CRATE FOR YOUR RASPBERRIES

BY PLANTING OUR VIGOROUS NEW EARLY

"BLACK PEARL"

Crops very heavily and is a firm shipper. Free from blight, never crumbles, and is five to ten days earlier than other varieties. Never winter killed. Large as the Cumberland, but more prolific, and jet black. Tested nine years under our own observation. Sells on the market for 35c to 50c more per crate than all other varieties. Write for full information. Free catalogue and price list of fruit trees, small fruit plants, ornamental shrubs and flowers.

Trade Mark, registered. Serial No. 84394.

Established 20 years.
HOLSINGER BROS.
Box 69, ROSEDALE, KAN.

Seedless Melons

It's irresistible. You wish to eat melons with no seeds and you realize to stay abreast and succeed in business you must keep daily accounts. My Daily Expense Record, with Monthly and Yearly Summaries, Servants Accounts and Memorandum pages, will be sent any address prepaid on receipt of 50 cents. Directions to grow Seedless Melons free with each order.
W. GHORMLEY, - HOPKINS, MISSOURI

GOOD Strawberry Plants

Is what you want for spring planting, we have them at the right price. Our fall trade was larger than ever before. We are now booking orders for spring. Send today for our spring catalogue.
LOUIS HUBACH Route 2 Judsonia, Ark.

STRAWBERRY PLANTS

Nearly 100 varieties to select from. We guarantee our plants to be high grade and equal to any. Write for our 19th annual catalogue.
FLANSBURGH & POTTER CO.
BOX 345 LESLIE, MICH.

STRAWBERRY PLANTS

Klondyke, Excelsior, Lady Thompson, Aroma, and other varieties for the South. Best and largest stock. Lowest prices. Special prices for nurserymen. Write me for prices.
A. Horn, Rt. 3, Soddy. Tenn.

Strawberry PLANTS

Money making varieties, true to name. Asparagus Roots. Seed Corn from prize winning varieties, for largest yields. Write today to the square deal Plant, Seed and Poultry man for his 32nd Annual Catalog, full of valuable information.
JOHN W. HALL
Marion Station, Maryland

Trees and Plants

Do you want the best at prices that are right? If so, look at this Apple and Peach at 5c each. Plum, Pear and Cherry at 12c and 15c each. 40 Concord Grape for $1.00. All of our trees are grafted or budded from good bearing stock. Get our catalogue and price list. They tell the rest. Give us your order. We will save you money.
THE ROEDER NURSERIES, OSCEOLA, MO.

PAPER POTS

Your garden three weeks earlier if started in Paper Pots. Over two million sold last year. We have a little folder telling all about them and we would like to send you one.
P. B. CROSBY & SON
1000 Ingleside Ave. Catonsville, Maryland

Cherry Picker

Attention, growers, some of our pickers are an absolute necessity in your orchard. Note—Cherry stems cut with rough ends drop into sack hung from corrugated shears attached to light glove and are removed from the bottom by simple device. For a limited time we will fill all orders at the extremely low price of $1.00 each or $5.00 per half dozen, by express. Address
RICHARDSON CHERRY PICKER CO.,
Dept. B. Benzonia, Mich.

STRAWBERRY PLANTS

guaranteed as good as grow, at $1.00 per 1000 and up. Catalogue Free.
ALLEN BROS., PAW PAW, MICHIGAN

sistant to the weakness of dying back in the winter. The berry, however, is not so large as that of the Columbia. The Cardinal has not been fully tested here though sent for long ago. Some years ago I tried the Hoosier but it showed no signs of superiority. The St. Regis red introduced by Lovett of New Jersey as an everbearer, has not borne for me yet. H. Rockhill of Iowa spoke well of its qualities last year but I have seen no other authentic reports.

The everbearing black caps never seemed to make much headway. As a matter of fact there are few plants whose fruit out of season is satisfactory and no fall bearer of any species can ever be depended upon in this climate without irrigation. An Idaho grower writes me that any of the standard strawberries can be made to bear a second crop by depriving them of water and thus keeping them dormant for six weeks or so. Then irrigate well and with the new growth will come a second crop of buds. It looks like western growers could make a specialty of such second crops by making use of the new breed of everbearers.

Last summer our attention was attracted to a fruit that might properly enough be ranked with the small fruits although it grows on a bush that is six feet or so tall. Its name is the Elaeagnus Longipes. I remember some years ago when it was first introduced from Japan, I believe, reading some descriptions of it but have forgotten the opinion then expressed, but from its behavior the last two years I am led to think that it is a new fruit of real value. In the first place it makes a handsome shrub with ornamental leaves of two shades (green above, silvery beneath) and is valued for its beauty alone. In addition to its good looks it bears a heavy crop of red berries unlike any other of our old sorts in flavor. When you first try one you are not captivated at first taste but the flavor grows on your palate until you find yourself going back and lingering longer in partaking of the pleasant acid of these berries. The picture which shows these berries grouped around an Early Richmond cherry will give an idea of their size. They are crimson in color but of a duller hue than the cherry. They contain but one long seed about an eighth of an inch in diameter. Each berry grows on a single stem about an inch long and the bush is loaded with them. How many gallons grew on our bush I cannot say but there were several. Another valuable quality is their persistence to the bush. For weeks after the first ripe ones there were berries in perfect condition and quite undisturbed by the drouth. I see no reason why this berry should not become of commerical value and it should certainly have a place in every yard. How many crates an acre of this fruit would produce I should not hazard a guess, but the number should be great. L. R. JOHNSON.

Missouri.

Meeting of Washington Horticultural Society.

Six hundred and two of the foremost fruit growers of the State of Washington met in Clarkston, Washington, January 4th to 6th inclusive, the occasion being the Eighth Annual Meeting of the Washington State Horticultural Association, one of the most powerful and influential organizations of "big red apple" growers in the United States.

Though not so largely attended as some previous meetings the annual session was by far the most instructive and therefore interesting ever held. Good addresses and interesting and most intelligent discussions of every phase of the fruit industry marked each session, while Clarkston proved a most loyal host and entertained the visiting members in the true Western spirit.

The two principal subjects dwelt upon were, the re-classifying of varieties of apples, reducing the number to fifty, and to the report of the committee appointed last February at a special meeting held in Walla Walla, Wash., as to the progress that has been made towards the organization of a Central selling agency, an organization of the growers which aims to control the entire output of fruit in the Northwest.

J. L. Dumas, for years the owner of the largest Commercial apple orchard in the Northwest, and one who is looked upon as being authority on such matters made a strong plea, and set forth a plan, for the doing away of the 300 odd varieties of apples now being marketed and enlarging the classifications so as to have but fifty varieties. A special committee was appointed to go into the matter thoroughly and make a report in time for it to appear in the yearly horticultural publication which will be off the press in about sixty days. The majority of the members favor such a step and it is thought by using the plan as outlined by Mr. Dumas, and endorsed by the American Pomological Society, of which he is a member, that the fruit growers of Washington will be the first to devise and adopt a system whereby the number of varieties will be reduced.

Mr. L. E. Meacham, of Walla Walla, secretary of the committee appointed to work out a system by which the Northwest apple crop could be controlled by the growers instead of commission men, made quite a lengthy report, and a small booklet giving a more detailed report was handed each member, but as to the concrete progress nothing was said. It is understood several large deals are pending and if they go through successfully the organization will be a reality. Though the idea was first to apply to Washington only, now, so it is understood, the scope has been enlarged to include the entire Northwest.

Much interest was shown by the members in pre-cooling, for they now realize that as each year sees hundreds of cars of apples added to the crop of the Northwest, to say nothing of strawberries, cherries and other more delicate fruits, some system will have to be devised by which the less hardy apples and small fruits can be shipped to the Atlantic coast and southern points. Burr H. Platt of the Department of Horticulture, gave an interesting address on pre-cooling and gave the results obtained the past year from the several experimental pre-cooling stations operated in the Northwest by the government. L. R. Anderson, formerly identified with the Earl Fruit Company, but now of Clarkston, was one of the principal speakers. He pointed out how the fruit growers of the Northwest were losing hundreds of dollars annually in not making use of the by-products of their orchards.

P. J. O'Gara, the blight expert, stationed at Medford, Oregon, gave a lecture in which he dealt with the most vital difficulties of this dreaded fruit malady, giving his experiences at Medford, and how he superintended the uncompromising warfare against it.

Never in the history of the Association has the membership been so large or financial condition so good. This is due principally to the excellent work of Secretary L. M. Brown, of Walla Walla. He had entire charge of arranging the Clarkston meeting.

North Yakima was the successful bidder for the next convention while the following officers were elected: President, W. P. Sawyer, North Yakima; First Vice President, L. M. Tickeral, Wenatchee; Second Vice President, J. D. Taggard, Waitsburg; Treasurer, E. P. Watson, Clarkston, and Secretary L. M. Brown, Walla Walla.

Hornless Talking Machine Free

You can have this grand home entertainer for your family and friends—and it costs you not one cent.

We give you this **Splendid New Model Imperial III Hornless Talking Machine** because we want to introduce to you our wonderful D & R Records (Double and Reversible).

We guarantee the reproduction of words and music to be as clear and distinct as any talking machine ever made — regardless of price.

We manufacture these D & R Records, but we do not manufacture any kind of Talking Machines. In selecting the one we would present to our customers we carefully inspected all different makes, and then took the very best $25 Machine on the market.

This Hornless Talking Machine uses D & R disc records, and it is upon disc records that all the greatest singers and orchestras record their music. D & R Records have music on both sides—you get two pieces of music when buying one record. This makes your music cost you just one-half the old price.

You must have records for any Talking Machine, and we know you will be delighted with D & R Records, for they produce the loveliest, sweetest tones, and you can choose selections from all the greatest Bands, Orchestras, Opera and Concert Singers, Quartettes, Solos, Soeeches, Vaudeville Jokes, etc. We keep 500,000 records always on hand.

You receive at once this Splendid Imperial III Talking Machine absolutely free by merely agreeing to buy D & R Records for a few months. Write today and we will send you our list of D & R Records. All the latest and standard music. Select which ones you wish sent with the machine, and we will ship all at once.

A Machine with Horn Supplied, If Preferred.

D. & R. RECORD CO.

217 Ohio Street Chicago, Illinois

SAVE MONEY on FRUIT PLANTS

Healthy, northern-grown stock, which will produce money-making crops. Strawberry, Raspberry Blackberry, Currant, Grape Plants, Etc

READ OUR GUARANTEE

Every plant we ship is guaranteed to be first class and true to name, packed to reach you in good growing condition (by express), and please you, **or your money back.**

You can make big money growing good berries, but you cannot expect to grow good fruit by planting and replanting small inferior stock.

Our plants are all grown on new ground (this being the first crop) and are large, heavy rooted and free from disease.

We grow them by the million on our own ground and know what we are selling. That is why our business has nearly doubled every year for the past twenty-two years.

We can save you money on 100 plants or a car load. Our large illustrated catalogue is instructive and is free to all fruit growers Write for it today

O. A. D. BALDWIN, R. D. 12, Bridgman, Mich.

A Hotbed Yard of 3½ Acres near Philadelphia

Grow Better Vegetables

Big Money In It

There are big opportunities everywhere for men who can produce **better** vegetables. Successful gardeners are making their land return $300, $400, $500 and even $1,000 per acre yearly by meeting the demand for high-grade produce. Consumers pay the price for fresh, wholesome vegetables, just as they pay the price for fancy boxed apples. But there are hundreds of towns and cities now poorly supplied that are waiting to welcome the gardener who will satisfy the hunger for home-grown vegetables—**better** vegetables.

How about your market? Is it supplied with **better** vegetables? Why not meet the demand yourself? Why not reap the rich harvest that awaits the man who will cater to the desire for quality vegetables? If you grow fruits, so much the better; fruit and vegetable growing go well together and having one will help you sell the other. You can learn how to grow **better** vegetables; you can get posted on the intensive gardening methods, that are making money for other men, by becoming a reader of the only paper published exclusively for vegetable growers

THE WEEKLY

Market Growers Journal

This is the paper that will help you grow and market **better** vegetables. Hundreds of gardeners say, "Just what I've been looking for." Every issue brimful of practical information, suggestions that you can apply in your work. Prof. R. L. Watts, Prof. W. F. Massey and other authorities write timely hints every week. Through it you can keep posted on what vegetable growers everywhere are doing, crop and market conditions, latest investigations of experiment stations and the Department of Agriculture.

Then there is the "Gardeners' Club." Think of having the advice of eight or ten successful gardeners on growing some vegetable crop. That's what you get each week in the "Club." Topics are assigned in advance and we pay cash prizes for the best articles.

The M. G. J. is official organ of the Vegetable Growers' Association of America. It is not published for any one section, but for all sections. No other paper can take its place. It fills the place for vegetable growers that The Fruit-Grower fills for fruit growers. Even if you grow vegetables for home use only, you will find its help invaluable.

If you would grow **better** vegetables, can you afford to let $1.00 stand between you and the wealth of information this paper will bring you every week for a year? Mail us $1.00 today (check, money order, stamps or dollar bill), and we shall send you this helpful paper a year. **We guarantee you satisfaction. If at any time during the year you think you are not getting your money's worth, notify us and we will return your dollar and stop the paper.** Could there be a fairer offer?

Do it now. Address

Market Growers Journal

600 Walker Bldg. Louisville, Ky.

Bigger Fruit Profits

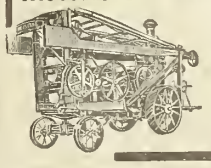
Here is a spray pump invented by fruit growers. It was our endeavor to secure the best spray pump to use on our 300 acre fruit farm that produced the

ECLIPSE SPRAY PUMP

It overcomes every defect found in other makes—it has proved itself best in actual work. Put an Eclipse to work on your trees and earn bigger profits. Write for our fully illustrated catalogue. It tells why you should spray—and why you should do it with an Eclipse. It's free. Write to-day.

MORRILL & MORLEY MFG. CO., Benton Harbor, Mich.

MAKE BIG PAY DRILLING WATER WELLS



Our Free Drillers' Book with catalog of Keystone Drills, tells how. Many sizes; traction and portable. Easy terms. These machines make good anywhere.

Keystone Well Works
Beaver Falls, Pa.

60 VARIETIES Strawberry Plants

Send for Catalog. D. J. HENRY, LaPorte, Ind.

KENTUCKY ORCHARDING

A Minister Proves That Apples Can Be Raised at a Profit in that State

A signal success in apple raising has been made by Rev. E. McCollom of Henderson County, Kentucky. The results he has obtained on a farm of less than a hundred acres have conclusively demonstrated that apple growing in Kentucky can be made very profitable. Now that he has proven this to be so, others are not slow to follow his lead and orchards are being put out in numbers and the fruit industry promises to become one of the important ones of the state.

Mr. McCollom entered the apple business sixteen years ago. At that time he was fifty-one years of age and since early manhood had been engaged in the ministry of the Cumberland Presbyterian Church, giving his entire time and attention to that calling. But he suffered for years from a chronic throat trouble which seriously impaired his voice. This, together with approaching old age, prompted him to seek some other avocation that promised more substantial returns when his usefulness as a minister was passed.

In this frame of mind he learned of an orchard in Henderson County that was for sale. He investigated with the result that he bought it at what was even then considered a very reasonable price. As soon as he closed the trade for it, he resigned his pastorate at Sturgis, in Union County, and took possession. But the place was in bad condition. The house was a small one story cottage that needed much repair. The out-buildings and fences were dilapidated and the soil showed the lack of proper husbandry. There were thirty acres planted in apple trees that were two years old and growing nicely. They were principally the regulation Winesaps and the big Stayman Winesaps, with a considerable number of Ben Davis trees and several scattering varieties. In addition there were about sixty old trees that were practically valueless on account of their age and lack of attention.

When Mr. McCollom took charge of the place he had everything to learn. His mission had been the saving of souls and he had never given a thought to horticulture in any of its branches. But he tackled the proposition with vim and enthusiasm. Having to learn it all, he properly decided to learn right and he studied only along scientific lines and after the most successful growers. As fast as he gained knowledge he would put it into practice to determine its suitableness to his needs. But his partiality for the ministry would not be so easily put aside and for twelve years, along with his apple growing, he continued to serve churches in Henderson and Daviess Counties as supply.

Now, he is one of the best informed apple growers anywhere and he is so recognized. His orchards are exponents of the value of scientific culture and the fruit which they produce is known and eagerly sought in many of the larger cities because of its general excellence. His place is one of the most attractive in the country and its value has nearly trebled, though the splendid offers he has received for it from time to time have failed to tempt him for a moment. The house has been enlarged into a commodious two story structure, that is modern in all its appointments. The outbuildings and fences are in the best of condition and the soil is kept in a high state of productiveness. At the age of sixty-seven, Mr. McCollom, as he has always done, exercises personal supervision over everything about the place.

THE McCOLLOM HOME

Since buying the farm Mr. McCollom has put out nine more acres of apple trees, these producing their second crop this season. Still the demand exceeds his output and he is preparing now to increase his acreage again this spring to the extent of seven acres. The Winesap apple, because of its many good qualities, is his favorite, both the ordinary variety and the improved species as shown in the big Stayman. He does not like the Ben Davis and says he would prefer that those trees were replaced with his favorites.

In growing his fruit, he employs the most approved scientific methods. The trees are cultivated as any other crop would be, though as their peculiar nature demands. They are kept trimmed and thus made to branch out and be low. They are sprayed at proper times to destroy insects and to kill fungi, and in every way is their health looked after and safeguarded. As a result, the fruit is very large, perfectly shaped, rich in color and luscious.

Mr. McCollom thinks this region an ideal fruit country. He was asked to explain how the apples which he grows compare with the famous Hood River product that have a world-wide reputation. "Well," he replied, rolling one of the big, rosy-cheeked Staymans in his hand as he talked, "out in the Hood River district they have the advantage of us in sunshine and their apples therefore show a richness and perfection in color which ours cannot have. But Kentucky soil and climate produces a fruit that for sweetness, firmness, juiciness and all around excellent eating qualities far surpasses the Hood River apples." And after eating one of Mr. McCollom's luscious Winesaps, you will agree with him.

The business has proven highly profitable. For one year's crop from his orchard Mr. McCollom received approximately $10,000; while this is the best he has ever done yet, his receipts every year are well up into the thousands and always show a handsome profit above the cost of production. The yield this past season was something over 3,000 bushels, which is far short of the usual amount. This shortage was caused by the excessively hot spring. Yet the prices are correspondingly higher and his receipts were full.

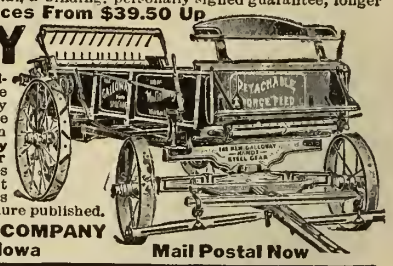
With his present orchard at its best, a year's crop should be something like

EARN $50
When You Buy a Manure Spreader

Fred Hansen of Tremonton, Utah, writes: My neighbor borrowed my Galloway spreader to try against his neighbor's new spreader which cost $50 more, but he sent you his order. Get your spreader direct from Galloway's Great factory at factory price and make the middlemen's commission yourself. No easier way to make money—no such sure way of getting quality. I'll quote on a price $20 to $50 below the dealer, according to quality, style and capacity. I give you a free trial, a binding, personally signed guarantee, longer and stronger than anybody. Prices From $39.50 Up

GALLOWAY

Is saving hundreds of thousands of dollars for his customers every year—the proof is yours for the asking. Why not save your share now on one of these Great Galloway Spreaders No. 5 with Mandt's New Gear. No spreader at any price any where can touch it. Write for Big, Free Catalog at once and the prices that make dealers tell foolish tales about Galloway. You'll also get Galloway's new Book—"A Streak of Gold"—most valuable book on manure published.



Wm. Galloway, Pres., THE WM. GALLOWAY COMPANY
1039A1 Galloway Station Waterloo, Iowa Mail Postal Now

"The Kind That Works While You Sleep"

No refilling or adjusting during the night. There are many more good reasons why you should use the

UNDERWOOD ORCHARD HEATERS

WE CAN'T TELL YOU ALL ABOUT THEM IN THIS SPACE. ASK US

Underwood & Viles Cold Storage Co., Hutchison, Kansas

The Fruit-Grower One Year and Garden and Farm Almanac $1.10

The best thing we know of in the way of an Almanac for 1912, is the Garden and Farm Almanac, just published by Doubleday, Page & Company. This Almanac comprises 303 pages, replete with data which will be of interest to every member of The Fruit-Grower Family. By special arrangements with the publishers, we are enabled to offer The Fruit-Grower for one year, and this Almanac, prepaid, $1.10. Address

THE FRUIT-GROWER
ST. JOSEPH, MISSOURI

APPLE TREES

You want the kind that bear fruit and win ribbons at the shows and bring the best prices on the market. Seven plates I exhibited at Louisiana, Missouri at the Apple Growers' Association, I won 5 firsts and 1 sweepstake. Men who showed fruit at all the state shows grown on trees bought of me, were all winners. All kinds of trees, Peach, Pear, Plum, etc. No better grown; prices right.

SUNNY SLOPE NURSERY
HANNIBAL MISSOURI

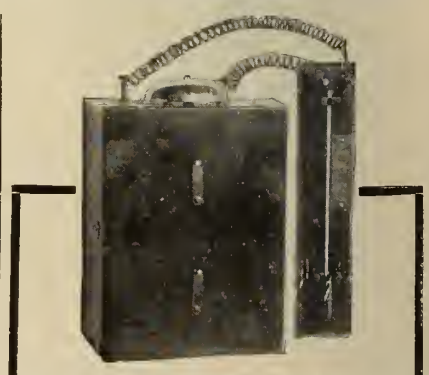
RIFE RAMS

give all the water needed for irrigation without pumping expense or bothering with an engine.

Cost little to install—nothing to operate. Raise water 30 feet for every foot of fall. Land lying above ditches watered at little or no expense. Pump automatically day and night, winter and summer. Fully guaranteed.

If there is a stream, pond or spring within a mile, write for plans, book and trial offer, FREE.

RIFE ENGINE CO.
2521 Trinity Bldg. New York



THE Cederborg Frost Alarm

is the best watchman—and the cheapest. It saved many a night sound sleep last season. You will need it to get the full benefit of that new smudging outfit of yours. Write us for full information.

THE CEDERBORG ENGINEERING COMPANY,
22 Clayton Block, Denver, Colorado

In writing advertisers please mention The Fruit-Grower.

GENUINE EVERBEARING
Strawberries

My catalog, plain and true, tells all about them and other new fruits of sterling value. Look out for the plant fakers. It's a new field for them. Come where you will be safe.
EDWIN H. RIEHL, Station 4, ALTON, ILL.

15,000 bushels, and as he sells for fancy prices according to grade, which never average less than a round price of $1.00 per bushel, a close estimate can be had of what his receipts ordinarily would be. This is not counting the additional seven acres which he will set out this spring and which in due time should add their 2,500 bushels to the above figures. And all of this on a cultivation of less than fifty acres. Still, some people say fruit raising won't pay in Kentucky.

Of course Mr. McCollom had his troubles in learning how to handle and care for his orchard. One thing especially which bothered him was in securing competent labor. This was not to be had anywhere about him for apple growing was as little understood as was the culture of cotton or some other foreign crop. So he had to send to those sections where fruit raising was a chief industry and get men who were thoroughly conversant with it. This state of affairs still exists and the workmen on his place today have been imported.

A suitable method of marketing was another problem over which he studied much. The first crop which he harvested was about 1,500 bushels and not having had any experience in selling, he was at a loss how to proceed. Finally, he disposed of the lot to an Evansville commission house for $1.00 per hundred pounds, or about 45 cents per bushel. He had to pick the apples and load them on cars at a station about half a mile from his place.

But the next year, with a larger crop, he made better arrangements and received $2,500.00 for his apples as they hung on the trees. This time the buyers shipped some of his purchase right back to Henderson and realized a nice profit on every barrel.

Since then, Mr. McCollom has employed another plan. He gathers the apples very carefully, sorts them into grades, such as extra fancy, fancy, select, choice, etc., Each apple is packed one by one in clean, new barrels and the barrels placed in cold storage until the time to sell arrives. The Christmas trade pays the best price for fancy apples and when it opens, Mr. McCollom advises his brokers in Louisville, Ky., Memphis and Nashville, Tenn., Birmingham, Ala., and other cities as to what he has to offer and quick sales at top prices never fail to follow. After the fancy stock is barreled and put in cold storage, the rejected apples are sold as a lot to peddlers who dispose of them locally. As a rule, this is about all of Mr. McCollom's apples that Henderson people get.

From a clergyman, dependent upon his annual salary for a living, Mr. McCollom has become an apple grower who is independently well-to-do. His success has attracted wide attention and comment. Yet, he is very modest about it and when questioned is very reluctant in stating figures and declares that many "fairy stories" have been told as to fabulous amounts he has received from his orchards. That he is proud of his achievement, there is no denying, but he looks upon it as something which any other man may do if he will.

He has raised a large family, the youngest daughter now being in Cincinnati, completing her musical education. His wife is his daily companion and adviser and she personally looks after the household affairs with an energy and ability that younger women might emulate to their advantage.

That his apple orchards have proven a blessing to Mr. McCollom in more ways than the financial return is evidenced by his rare physical powers. At sixty-seven, he is as active and tireless as most men half his age, and the out-door life which he leads will doubtless prolong his life materially.

M. E. BACON.

PACKING APPLES

"LION BRAND" TRADE MARK SPRAYING MATERIALS

Purity, Strength, Effectiveness At It Since 1889

Destroy Insects, Prevent Disease Do Not Injure Tree or Delicate Plant

Millions of Dollars are Lost Annually by Fruit Growers and Vegetable Gardeners Because They Do Not Realize the Enormous and Increased Profit in Persistent Spraying With Properly Made Insecticides and Fungicides

When it comes to fighting insect pests in your orchard, you cannot afford to experiment with unknown insecticides of doubtful value. If the enemies of your fruit trees get a good start, all the spraying you can do will not control them. If you are fighting San Jose Scale, and use poor materials, the fact that they were poor will likely not be apparent until too late to spray again, and an entire season has been lost, and a number of trees injured if not destroyed.

Your first spraying for Codling Moth is done some little time before the insects appear. If they are not destroyed just after hatching, because you have used a poor quality insecticide, you will not know it until too late to kill the first brood, and one Moth which escapes lays about fifty eggs for a later brood. Hence the value of using "Lion Brand" Insecticides and Fungicides of long tested and known reliability.

This is not the idle talk of a poorly posted advertisement writer, but a plain statement of facts that can be proved by any reader of The Fruit-Grower who cares to have it proved.

Lime-Sulphur Solution is for San Jose Scale particularly, and Apple Scab. Has a wonderful tonic effect, and makes the bark of apple trees smooth as can be. The only spray that destroys Scale and does not injure trees. Ready for use, and more economical than home-made solutions.

The stickiest Arsenate made. Preferable for Codling Moth, Curculio, Elm Leaf Beetle and Chewing Insects of all sorts, on trees, shrubs, vines, bushes and vegetables where it is desirable that the poison should remain longer on the foliage than is possible with other insecticides. "Lion Brand" Arsenate of Lead does not burn most delicate foliage.

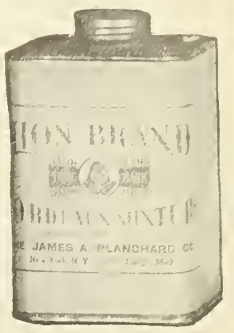
Blanchard's "Lion Brand"

Insecticides and Fungicides

have been the Standard of the World for more years than any other manufacturer in this line has been in business

BLANCHARD'S PRODUCTS

"LION BRAND" Arsenate of Lead	"LION BRAND" Grafting Wax
"LION BRAND" Pure Paris Green	"LION BRAND" Sticky Binding
"LION BRAND" Lime-Sulphur Solution	"LION BRAND" Weedicide
"LION BRAND" Bordeaux Mixture	"LION BRAND" Powdered Tobacco
"LION BRAND" Kerosene Emulsion	"LION BRAND" Insect Powder
"LION BRAND" Whale Oil Soap	"LION BRAND" Cattle Content
"LION BRAND" Pure Powdered Hellebore	And a number of Specialties



Bordeaux Mixture prevents Blight, Mildew, Rot, etc., from destroying Potatoes, Beans, Peas and Melons, keeps spots and specks off Apples, Peaches and other fruit, and makes crops surer and larger. One gallon to 49 of water.

WE MAKE A SPRAY TO DESTROY EVERY INSECT ENEMY AND FUNGUS DISEASE OF TREES, VINES, SHRUBS, PLANTS AND VEGETABLES

THE JAMES A. BLANCHARD CO., is the oldest, most responsible and best equipped manufacturer of Insecticides and Fungicides in the World.

None but the purest and best-for-the-purpose ingredients are used. Every formula is scientifically correct and thoroughly tested to be the most effective, and safest for its purpose. For 23 years we have made nothing but Insecticides and Fungicides.

Insects and fungus diseases have become so numerous, so destructive, persistent and aggressive that it is admitedly impossible for fruit growers and vegetable gardeners to get crops that can be profitably sold without using Insecticides and Fungicides, and those who grow profitable crops do use them, and know it is plain common sense, and a most economical safeguard to do so.

LION BRAND INSECTICIDES AND FUNGICIDES cannot be surpassed in uniform quality, and are guaranteed under the Insecticide Act of 1910.

We want every one who has a fruit tree of any character, or a bush, or a vine, or a shade tree, and every one who grows vegetables, even if only potatoes, to have a copy of our

FREE SPRAYING BOOKLET

wherein we explain why and how spraying insures larger crops and better quality. Just send your name and address to our nearest office.

Blanchard's Products are sold by dealers and agents everywhere, or direct, if your dealer cannot supply them. Look for the Lion Brand Trade Mark and take no other.

"Lion Brand" Pure Paris Green contains absolutely not a particle of filler or adulterant of any sort, and is accepted the World over as the Standard.

THE JAMES A. BLANCHARD CO.

564 Hudson Terminal, New York 565 Broad Street, St. Joseph, Michigan

Factories: New York and St. Joseph

Soy Beans.

Some difficulty has been encountered in the Mesilla Valley as well as in some other localities in the production of soy beans. The first important feature in the production of this crop is good seed, and considerable difficulty is encountered in securing it. The seed therefore should be tested by placing in a pan of damp soil in a warm place to determine how much will germinate. If less than 80 per cent good seed is found, either better seed should be secured or a larger amount in proportion to the quality should be planted.

The seed bed should be in the best condition for the sprouts of soy beans are very tender and any obstacles such as lumps, stones or crust on the surface of the ground will materially impede the growth. Seed should be planted from one inch to one and one-half inches deep in the heavier soils and two to two and one-half inches deep in sandy soils. Irrigation water should be applied before planting so that a crust will not form after the seed has been planted. This is important.

Soy beans may be planted in rows two and one-half to three feet apart or may be drilled or broadcasted. Planting in rows and cultivating will give the best returns in seed, but for feeding purposes, the entire ground may be covered. When planting in rows about 60 pounds per acre will give good results. If planted broadcast, considerable more, about 150 pounds should be sown. The roots of soy beans are not deep, usually not more than thirty inches, so that frequent shallow irrigations are preferred to heavy irrigations and at longer intervals. This is usually true if the crop is planted on the sandier soils.

It will be found exceedingly beneficial to cultivate the soy beans when they are planted in rows. This should be done two or three times during the early part of the growing season, both to break any crust that may form and to keep out weeds. It will be found most beneficial to cultivate as soon as the soil is dry enough after irrigation.

The soy bean plant is a legume and is therefore a nitrogen gatherer for the soil. If properly handled it should leave the soil in better condition than before. This is particularly true of sandy soil which is generally somewhat deficient in nitrogen. The crop usually does well on the lighter soils as compared with the heavier soils.

Soy beans mature in from ninety to one hundred and fifteen days. They may be planted any time after danger of the last killing frost is passed. The crop on the mesa land at the College was planted on May 25th. Slightly more than thirty bushels of seed to the acre were produced on this soil where the seeding about 60 pounds to the acre in rows three feet apart.

Rabbits and gophers are particularly fond of the young beans and if there is danger from these pests, it will be well to plant enough for yourself and the pests also.

New Mexico. REX E. WILLARD.

Earlier Vegetables.

A correspondent suggests a method of having certain tender vegetables several days, or even weeks earlier than your neighbors. The method is simple, and consists of making large cones out of heavy paper or cardboard. Start your vegetables, such as tomatoes, peppers, corn, or other crop that usually comes in at mid-summer, in the hotbed if necessary, transplanting to the field very early. Cover the plants with the paper cones every night, when the temperature is low enough to chill the plant or when the frost is liable to occur. Sweet corn can be had a couple of weeks earlier than usual by this method, and there is almost no limit to the earliness of tomatoes if one has the assistance of a good hotbed in which to start the plants.

Don't let the danger of frost damaging the plants deter you from trying this method. You cannot go in very heavy on such a plan as this, and the little time and expense on such paper cones transplanting and covering will be more than offset by the deliciousness of the earlier than usual vegetables which you will get.

Subscription expired? Don't miss big special issues. Renew today.

HANDLING A TOMATO CROP

During the summer of 1904, while on a visit to my boyhood home, I purchased forty acres of land, all but seven acres being in virgin timber, and this seven acres had been cut off the previous year, so the stumps still remained and good tough ones they proved to be, with a tenacious desire to remain in the soil. I had spent thirteen years in Chicago, in a confining office position, and had watched with interest the continued increase, year by year, of the cost of foodstuffs and other necessities, while wages did not rise in the same ratio and most men of my acquaintance considered themselves fortunate if they began each year with an even balance sheet.

I had for a number of years a desire to return to the country, and plant a commercial orchard of my own, as I had when a young boy been greatly interested in one set out by my grandfather, and had in fact set out a good many of the trees myself and had watched them grow and bear bountiful crops.

In the Fall of 1904 I made the beginning of what is now a well established young orchard of four hundred trees of all kinds, which bore their first crop last year (1911). In another issue I will tell the readers of The Fruit-Grower just how this orchard was planned, established and cared for from the time of planting to the present.

In this issue I will tell all readers interested in saving everything grown in a garden of our experience with a small canning outfit made especially to meet the requirements of the fruit-grower and gardener.

My wife had read in the summer of 1910 an article "Canning Fruits and Vegetables on the Farm." by Mrs. Mabel E. Moore, containing more sound sense and advice than similar articles we had ever read on this very important subject. We had always produced in greater quantities than we could sell while fresh, such crops as beans, tomatoes, corn, etc. In season everybody had them, and the sale was limited and the prices low.

Having a large acquaintance in a large city, we felt reasonably certain that we could dispose of all we could can at better prices than we could get from a wholesaler and at the same time sell to the consumer at less than he paid the retailer. This theory has worked out with much satisfaction to both producer and consumer. We determined to concentrate all our efforts on tomatoes, so early in March began preparations for raising the plants. We first constructed a hotbed, but had no success with this method, raising only a few plants and they were not of the right sort to plant. A hotbed is rather expensive to construct, and when one is raising tomatoes for canning purposes, I would advise the use of cold frames, as these can be gotten ready and the seed sown the first week in April. If good soil, a little fertilizer and careful cultivation is given, plants will be ready to set in the field by the tenth of May.

Our cold frames were made four feet square out of lumber eight inches wide, and filled with about five inches of soil dug from around old stumps. Seed was planted the first week of April and the sash put on. At the same time we planted a large quantity of seed in the open ground on the south side of a building so the cold north winds would not dwarf the tender plants.

On the tenth of May we had ready for planting about 12,000 fine strong plants, and just at this time is where all our calculations were upset.

The drought which began on the first of May had a serious effect on the plowed ground, which by the 15th had become so dry and baked that setting plants was almost impossible, and those we did set were planted late in the afternoon in deep holes filled with water.

Up to the 31st of May we had out less than 200 plants, but on the night of the 31st a fine rain fell with the following day dark and cloudy, but warm, and on this day we set 500 plants. The weather again turned hot and dry, with the next rain on June 10th. We set no plants after June 19th, but had planted on that date a total of 1475, but losses from dry weather brought our living plants on September 1st, down to 1444.

These plants were set four feet apart each way in ground which had been in clover for two years. We cultivated both ways, to keep clear of weeds as these have a habit of persistent growth in any kind of a season. Tomatoes I have usually cultivated but twice and had a good crop. The crop raised last year was cultivated six times with a one-horse cultivator and hoed twice. We always kept a dust bed of about four inches deep to hold all the moisture possible.

The first ripe tomato was picked on July 4th, a small dried up article, and at this time we did not expect to raise a bushel from our entire field, as the drought at this time was at its worst.

The vines would blossom and a tomato about the size of a pea would form, dry up and fall. Readers of this paper remember conditions at this time, for in the succeeding paragraphs I will tell you of the wonderful vitality and yielding quality of the tomato —king of the vegetable crops.

On July 19th the long drought ended in a great rain, followed by more on July 23rd and 31st; August 7th, 23rd, September 4th, 6th, 10th, 15th, 16th, 17th, 18th. These are the rains which made all farm crops in this section, and turned a land of barrenness to one of plenty and rejoicing.

We began canning on August 15th, and ran several days each week until the last of October. Our output was 1812 quarts and 102 pints of tomatoes, and in addition we put up 312 one-half pint bottles, 151 pint bottles and 18 quart bottles of catsup. We estimate one-third of our crop was caught by the frost as our vines were well loaded with good sized green tomatoes when the first freeze caught them.

The entire output has been sold. Tomatoes brought us $1.00 per dozen delivered without cases, $1.15 per dozen packed in cases holding one dozen. Most of these went direct to the consumer. Catsup brought $1.80 per case of 2 dozen half-pints and $3.00 per case of 2 dozen pints.

I have been asked: "Did your venture pay and how much could you sell if you had a great quantity?" Most certainly it paid and I could sell very easily 100,000 quarts. True 1 would have to wholesale a lot of it at a less price than we received this year, but could do that and still make money.

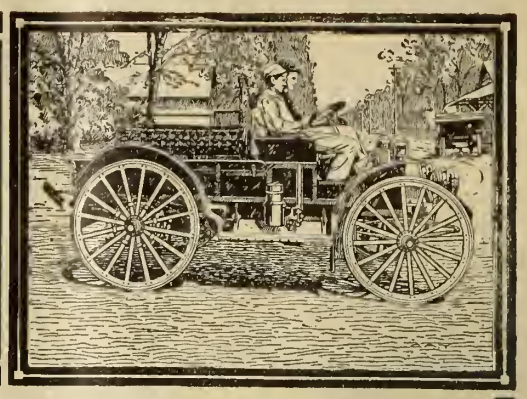
Raising tomatoes and canning them yourself is far more profitable than raising eighty bushels of corn to the acre, and the work is no harder. We made one mistake. Our canner was too small and not the right kind. We bought a square machine without a cover and lost valuable time waiting for the water to boil. A round machine is far better and there are a number on the market, which will heat up almost as quickly as steam.

Any person with ambition and especially one with a small farm can make more money off of five acres of tomatoes, than he can on a forty-acre farm devoted entirely to diversified farming. There is no danger of overproduction. This country is growing at a tremendous rate and must be fed, and the man who can produce good foodstuffs is the man who will make money. All fruit was plentiful here this year, and we put up a goodly quantity, which has been sold, and our customers tell us Missouri fruits are better than those coming from California.

Dry weather got our beans, but at that we put up 186 pints. Next year we are planning on a greater output and with a larger canning machine can handle a larger crop, as we are convinced that the farmer is the natural canner, and can put out an article which is first-class and with which the city canning factory cannot compete as regards quality.

Missouri. S. C. PRESTON.

QUICKER TRIPS MEAN MORE TRIPS AND BIGGER PROFITS



WITH an International Auto Wagon you can make a trip in one-third the time that you can with a team. You can catch the early trains or boats and the early markets. You can go to whatever market pays you best—10, 15, or 20 miles is practically nothing for an International. And you can keep your horses working in the field. The

International Auto Wagon

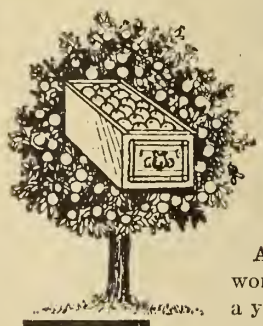
is always ready, winter and summer, 24 hours a day if necessary. Roads, hills, sand, or weather do not stall it—it never tires.

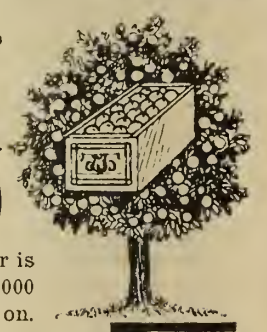
The wheels are sufficiently high to give abundant road clearance. The solid rubber tires eliminate tire troubles and expense. There are no delays or expense on account of punctures and blow-outs. The air-cooled engine does not freeze in winter. The International Auto Wagon will give you more service than you could secure in any other way for the amount invested. Whenever desired, it can be converted into a pleasure vehicle by adding an extra seat and top.

There are many International Auto Wagons in the hands of farmers and fruit-growers all over the country. Let us send you facts and figures showing what they are doing. Write for catalogue and full information.

International Harvester Company of America
135 Harvester Bldg (Incorporated) Chicago U S A

Make Your $5,000 Farm Worth $25,000





A farm that yields $1,000 a year is worth, say, $5,000; if it yields $5,000 a year, it is worth $25,000 and so on. It takes good management and many acres to produce $1,000 net each year raising grain and stock. Good management on only a few of the same acres will produce $1,000 a year growing fruit, with no more work.

Orchards Do It; They Are Safe and Profitable

With modern methods you can produce large crops of perfect fruit every year. Market demands are such that you can sell this fruit for at least three times the producing cost. Granted that you have the ambition and the energy, and sufficient capital, you are absolutely safe in planting an orchard. If you know how, so much the better; if not, don't let that hinder you; go ahead and plant, and we'll tell you how.

"How to Grow and Market Fruit"

Explains what is needed, why it's needed, and then directs you how to do everything required. Nearly 150 pages, 24 pages of pictures that show how, strongly bound, will last for years. Free to customers who buy $5 worth or more of trees. To others the price is 50 cents, subject to rebate on $5 order. Get it now.

Our live 1912 catalog tells you what you ought to know when you plant trees. Ready in February and sent free. Write for it today.

HARRISON'S NURSERIES
Atlantic Avenue BERLIN, MARYLAND

Valuable Maryland and Delaware Farms for Sale
Write for Particulars

SUCCESS ON TEN ACRES

A Story That Shows That It Is Not Always the "Big" Farmer Who Is the Most Successful

Although he has but ten acres of tillable ground, Mr. H. M. Howard, the proprietor of Dix Farm, a few miles from Boston, is fast coming to be one of the best known and most successful market gardeners in New England. So highly are his methods thought of that he has just been honored by being asked to write a special bulletin for the State Department of Agriculture on growing squashes, melons and cucumbers.

Mr. Howard is a graduate of the Massachusetts Agricultural College, and conducts his farm in a most business-like way, keeping a careful record of the cost of operation, so that he is able to determine the exact profit from every hill of beans. He sometimes has fifteen men working on his ten acres, but a careful account of each man's time and what he accomplishes is kept and the fact that the men know this stimulates them to increased activity.

Mr. Howard is a self-made man. After leaving school, he worked on farms of various sizes and when he had acquired the necessary practical experience, leased the place in West Newton, which, after a few years, he was able to buy. His plant of ten acres now brings him a yearly return of one thousand dollars an acre, with a satisfactory percentage of profit. Until a few years ago, he depended mostly upon field crops, although he grew a few violets under glass during the winter. Now he has several greenhouses and a large battery of hotbeds. He grows large crops of radishes, beets, lettuce, spinach, tomatoes, beans, cabbages and squashes on his open land, which is on a gradual slope and all in one piece.

The owner of this successful little farm is exceedingly particular about the preparation of his ground, which is plowed and dragged perfectly level and heavily manured. Great care is taken to have the manure piles of equal size and the same distance apart. When the manure is spread, every inch of the ground is evenly covered to the very edge of the field. Next the manure is plowed under, but not over six inches deep, and the land is again dragged until level. After that, plowing for the crops begins, and the plowman is followed by six laborers armed with rakes, who smooth down each furrow as it is turned up and rake all stones or rubbish into the furrow. This practice gives a fine seed bed, and is followed by most of the best market gardeners in the vicinity of Boston.

Another point which is made much of is the necessity of covering the seed with moist soil, in order to secure quick germination. For this reason the seed sower follows close after the men with the rakes The sowers use seed lavishly, it having been found that there is no economy in trying to save on seed. The amateur would be surprised to see the amount used.

Cultivation begins promptly and is kept up religiously, sometimes as often as once in five days. That is one secret of Mr. Howard's success. The crop receives the most careful attention from the time the ground is prepared until the market wagons roll into Back Bay, or one of the fashionable suburbs of the "Hub." Mr. Howard is careful not to cultivate when the crop is wet or when the soil is wet enough to create clods.

Much of the time the gardens are artificially watered, the land being laid out with mains and cross feeds so that the water may be distributed to all parts of the field. The little farm is near enough the town to have running water, which is a great help, although Mr. Howard also has a force pump and water system of his own.

Lettuce and beets, which are highly profitable, are planted about the first of April with the lettuce between the rows of beets. As soon as these crops are marketed the ground is prepared for another crop. It may be said incidentally that Mr. Howard does not thin his beets to the extent generally advised, not finding it necessary to do so.

Like all successful market gardeners he tries to get his crops on the market early and to meet the demand of the hour. He has been able to do much to hasten the ripening of the crops by a careful selection of seeds and by the liberal use of water. He saves the seeds of tomatoes, summer squashes and corn, selecting the best type of plants and the best specimens on the plants. He states that he has been able to get the greater part of his tomato crop to come in August, instead of in September, as formerly, by selecting seeds. He has had much success with Livingston's Perfection. Corn has been forced ahead by at least a week by the free use of water, making a much greater profit, sometimes double what it would otherwise be. Accurate accounts have enabled him to ascertain the exact profit in these advanced methods. For instance, he stated in a public address, that the returns for tomatoes during a given season were thirty cents a plant.

Mr. Howard considers squashes, melons and cucumbers easy and profitable crops to grow. The first, he says, can be made more profitable than corn or potatoes, although it is necessary to have a good storage plant, well built and heated, so that there is considerable outlay. He calls attention to the fact that squashes are easily hurt in harvesting, often being cut or bruised if handled at all roughly. Summer squashes are sold by the dozen, hundred or barrel, while the winter varieties are sold by the barrel or by the hundredweight during the winter. Great attention should be used in storing the latter, and they should be hauled to the squash house in spring wagons and resting on mats or blankets. The smallest and most immature ones should be placed on the top shelves. If these precautions are observed, he says, and the house properly heated and ventilated, no difficulty in keeping squashes is found.

Hotbed yard on the farm of Mr. H. M. Howard, who is making a good living from ten acres of vegetables.

Of late years Mr. Howard has been growing muskmelons with profit. He starts the plants in a hotbed or greenhouse, and transplants them to pots, setting the plants in the field after the first of June. In this way he has been able to circumvent the bugs and beetles, which often do much damage when the seeds are sown in the open ground. Moreover, he is able to use the land for radishes or lettuce before the melon plants are ready.

For the most part the laborers employed on Mr. Howard's place are Italians, who are quick, intelligent and industrious and who come out from Boston each day, the car fare being but 5 cents each way. The wages range from a dollar a day or less to perhaps $35 or more a month. Women and boys are employed at some seasons.

The market produce is brought from the fields to a shed near the house, where it is carefully gone over and trimmed and washed as may be necessary in order to make it salable in a high-class market. Mr. Howard was shrewd enough when he began business to find a market in the environs of Boston which had been rather neglected. He is a good salesman, a pleasant man to do business with, educated, clean and well-read. He is strictly a business man, running a garden factory on business principles, keeping a complete set of books and a careful cost account. All this has helped him to succeed where many other men would have failed, but it serves to emphasize the fact that one of the greatest needs on all classes of farms, large and small, is a use of good business methods. Much as most farmers hate figures, they often spell the difference between failure and success, or at any rate, only a limited instead of a marked success.

E. I. FARRINGTON.

Massachusetts.

A Twin Automobile Seat Top Buggy

For Only $33.65

Stylish, Strictly Up to Date

Sold on Thirty Days' Trial

This is just one of the hundred great bargains we show in our 1912 Price Reduction Vehicle Book, the greatest printed vehicle showroom in America, describing in detail the most stylish, up to date line of buggies, phaetons, surreys, road carts and wagons ever manufactured.

If you have the slightest intention of purchasing any vehicle, by all means write at once, today, for this great vehicle book. It's free. All you need to do is to ask for it. This book will positively offer you the greatest values and very latest styles at the lowest prices ever quoted on strictly high grade vehicles. We are able to give you these great special bargain prices

BECAUSE, we own and operate the largest vehicle factory in the world—61,000 vehicles built in this factory last year—over 20,000 more than were made by any other concern in the United States. Naturally our factory cost is much lower than that of any other concern, due to our exceptional manufacturing facilities.

BECAUSE, we sell DIRECT from our factory to you. We cut out all dealers', agents' and jobbers' profits. We aim only to secure ONE PROFIT, the small factory profit, and consequently we ACTUALLY SAVE YOU from $20.00 to $50.00 on ANY VEHICLE of ANY KIND.

Saving money for the buyer in every conceivable way is our principle of doing business, and that is the secret of our tremendous success.

GET OUR 1912 PRICE REDUCTION VEHICLE BOOK No. 90F68

Send postal or letter today, at once, for our large 1912 PRICE REDUCTION VEHICLE BOOK No. 90F68 SENT FREE, and contains ONE HUNDRED GREAT BARGAINS. Simply ask for it and we will send it to you prepaid by return mail.

SEARS, ROEBUCK AND CO., CHICAGO, ILL.

WANTED!

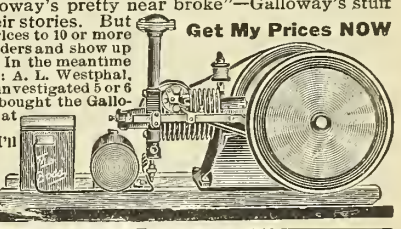
I want 10 men or more in every township to write me **quick** for a special offer on the sized engine they need. When you get this offer you'll **buy.** I make it practically irresistible. Then **everybody** in your neighborhood will know the **truth** about Galloway—his quality and savings—and all will **understand** the foolish tales the dealer tells in order to get his big price and personal profit.

10 OR MORE MEN

Write Now to Galloway

You'll soon see the reason for the really funny things that dealers say of Galloway —"Galloway has no factory"—"Galloway's pretty near broke"—Galloway's stuff is poor quality"—those are a few of their stories. But I'm going to call their bluff and make such prices to 10 or more men in every township that will bring the orders and show up the dealers' "jokes" in their true light. In the meantime I'm getting hundreds of letters like this: A. L. Westphal, St. Francis, Minn., writes: Last winter I investigated 5 or 6 different engines on the market, but I bought the Galloway, and I am very well satisfied with it. I have saved at least $100.00 on it.

Get My Prices NOW

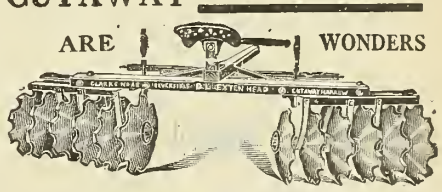


Write quick for Big Engine Catalog and special prices. I'll also send my fine new General Line Catalog in five colors.

WM. GALLOWAY, President

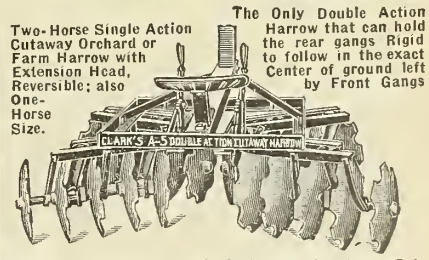
THE WM. GALLOWAY CO 1035 A J Galloway Station, WATERLOO, IA.

CLARK'S CUTAWAY HARROWS ARE WONDERS



Two-Horse Single Action Cutaway Orchard or Farm Harrow with Extension Head, Reversible; also One-Horse Size.

The Only Double Action Harrow that can hold the rear gangs Rigid to follow in the exact Center of ground left by Front Gangs



The Only Genuine Double-Action Steel Jointed Pole Cutaway Harrows. (Can be Extended.) For orchard or farm. Send for catalogue—Fruit Growers Supplies.

E. G. MENDENHALL,
General Distributing Agent for the West
Box 360. KINMUNDY, ILLINOIS

HAMILTON MADE

Spraying HOSE

is strong enough to stand any pressure of power or hand pumps and lasts indefinitely. Is much cheaper (because of long service) than the cheapest priced hose, much better than any other's best.

Every length will stand 600 lbs., guaranteed for 300 lbs. working pressure.

½-Inch.....15c per ft.
⅜-inch.....14c per ft.

In 50-foot lengths; coupled complete; freight paid.

Vulcan Spraying Hose

Stands 350 lbs., guaranteed for 150 lbs. working pressure.

½-Inch.....12c per ft.
⅜-Inch.....11c per ft.
50-foot lengths, coupled complete.

Order from your dealer, or shipped direct from factory, cash with order.

Hamilton Rubber Mfg. Co.
TRENTON, N. J.

SAVE

Your Trees and Shrubs

KILL SQUIRRELS!
—and gophers quick! Don't let them kill your trees and shrubs. Spend 50c, 75c or $1.25 for box of Mickelson's Kill-Em-Quick, the world's cheapest and most effective

Poison for Gophers and Squirrels

Its taste and smell draw pests like a *magnet*. The merest atom means *death* to any rodent pest. Ask druggist or order direct, express prepaid. Mail postal for free booklet.

MICKELSON KILL-EM-QUICK CO. 1481 Washington Ave. Minneapolis, Minn.

Ladders, Baskets
Crates, Presses
Picking Bags

EXCELSIOR CUSHIONS
If You Want the Best Send a Card for Catalogue

Bacon & Company
Appleton New York

TALKING DOLL FREE SEND NO MONEY

I want to send every little girl a Speaking and Sleeping Doll; will say "Mama" and "Papa." Stylishly dressed; lace trimmed hat and gown; shoes and stockings; 17 inches tall. Send your name and address and say you want a "Mama" and "Papa" Talking Doll and I will tell you what to do.

EXTRA PRIZE for promptness. Do not delay and we will send you another dolly as big as a real baby—is 2½ feet tall. Both dolls yours in a few days.

Not one cent of your money is required. Write

UP-TO-OATE, Dept. 5, INDIANAPOLIS, INDIANA

AGENTS AMAZING Invention!

An entirely new lamp burner. Changes ordinary kerosene illumination into beautiful large white light. Rivals gas or electricity. Scientifically made. Beats the old style lamp. Not a mantle. CAN'T BREAK.

BIG PROFITS—Easy to show, quick to sell. $8 to $10 daily for you. Experience unnecessary. Sample outfit, 35c, prepaid. Particulars Free. THE RADIOLITE CO., Dept. Z, Toledo, Ohio.

DAHLIAS Dahlias Exclusively. Over 600 varieties. The best to be had. 40 first prizes from 45 entries in 1911. Write now for Free Catalogue.

GEO. L. STILLMAN, DAHLIA SPECIALIST
Box P Westerly, R. I.

CORN AS A CATCH CROP

An Oregon Reader Raised Corn Between Trees Until They Came Into Bearing

The starting of a new orchard and carrying it to maturity is a matter of considerable outlay and expense. Unless one has plenty of this world's goods salted down to be used as needed, it will require some good planning and careful management to keep up the expense. In fact it would be good economy to make a few dollars on the side anyway. As we are now situated, we, I say "we" for I have a wife and four little girls, are developing an orchard in the dry farming fruit districts of Oregon. Many if not most of the small crops that can be raised in the East cannot be successfully raised here. The long summers without rain necessitate continuous fallowing or "dry, dust-mulch cultivation," as we call it.

In studying the matter and looking the situation over pretty thoroughly I concluded that corn could be raised to the best advantage. Finding that some of the neighbors had raised it in a small way at times I secured some seed that had been thoroughly acclimated. Seed brought from a great distance does not do well for two or three years, and here we need a variety that has short stalks and requires a short period for maturing. This is because it must have finished its growing season before the dry season sets in. A flint variety seems to do the best in this part of the country where the nights are sometimes a little bit cool. The yield is not as large here as in the great corn states and this with other features mentioned calls out only a small planting of this, one of the greatest of grains.

As we have quite a number of chickens and fowls it was thought to be much better if we could have some corn to give them and as none could be bought we undertook the task of raising it on our own ground.

After securing the most suitable seed to be had I first plowed early after the spring rains had ceased and with a marker lined out four rows between all the tree rows and with the implement cross marking the same ground so that the crop could be cultivated both ways. The seed was planted with a hand planter and in due season came up well. It was a pretty sight, the little blades lined up in all directions and it would seem to take a new start every time we ran the single horse cultivator through it. Cultivation was repeated every ten or fifteen days through the summer. In fact we would have done this cultivating anyway because of the trees. Thus it was very little extra expense to tend the corn.

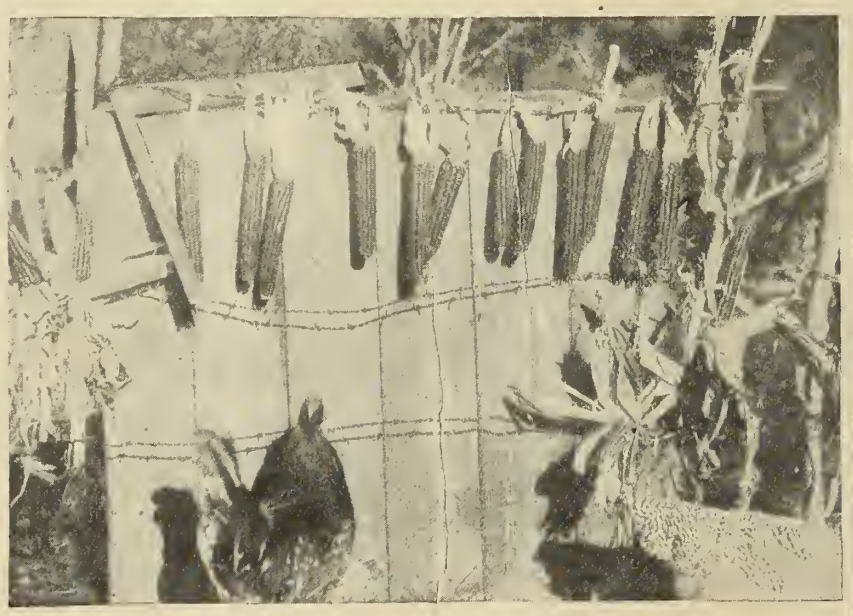
The trees were young, in their first year, and the corn was not planted nearer than four or five feet to them. The corn matured a good yield from the eight or ten acres and was harvested in proper season. Now we have a fine lot of grain for fattening broilers and feeding the laying hens through winter, besides the fodder makes the best of winter feed for two cows and add variety to their diet in the long winter months.

I wish to mention a point right here about feeding corn fodder. Cut it up and they will eat the stalks and all, then, too, if you will add a little salt by sprinkling it on after the fodder had been dampened a little for each feed they will relish it much better. In fact, they do much better by this little attention; it helps to increase the milk and then it makes their coats so much sleeker. This little seasoning is worth while just to see bossie eat with such vim and relish, smacking her chops and lowing for more, her best way of thanking you for any little kindness.

I recommend to all who want a little side product to try the corn proposition. Don't get discouraged even if you are told that it "is no corn country." For once just "be shown" by yourself. AMOS AVERY.
Oregon.

Early Bunch Onions.

I note your answer to Mr. Chamberlain of Illinois in regard to the growing of bunch onions for the early market, and I will have to disagree with you in regard to the Potato Onion.



SOME OF THE CORN WHICH MR. AVERY GREW

While it may be a southern product it does quite well as far north as central Illinois and I have no doubt that it will do well as far as northern Illinois.

A great many of the old settlers around here came from the Carolinas and Virginia, and they brought with them the Potato Onion, and it has been propagated here for the last seventy-five years at least, and does quite well yet.

One groceryman in our town has made quite a success growing these onions for his early trade. As it is well known, the large onion makes sets when set out, there being anywhere from two to fifteen sets from the single onion; these sets in turn when planted the next season make onions. That is the reason they are so often called multiplier onions.

Potato Onions to do their best must be set in the fall of the year, and are usually set as late as the ground will work, and are mulched with rotten straw or manure. They come up early, and make the finest and earliest shallots. A large onion ought to make a bunch large enough to sell for a nickel, in fact, that is what the grocer mentioned got for his.

Indiana. OMER R. ABRAHAM.

One of the first essentials in the successful management of any business is for the manager to have "a clear vision of the causes which affect the result of his activities." This applies just as certainly to the successful management of a farm as it does to a factory or print shop.

Use Compressed Air SPRAYERS

and Save **Money, Time, Labor** and Trouble in the Orchard

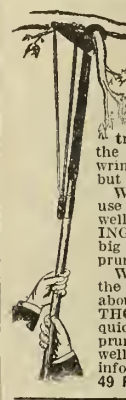
W. H. Owen Sprayer Co.
SANDUSKY, OHIO

The Monarch Pruner

WHY bruise the limb, strip the bark and injure the tree, when you can avoid it all by using the **MONARCH? Now** is the time to investigate this ideal pruner. A simple, durable and speedy tool, with keen cutting edge and detachable saw. Cuts largest limb or smallest twig. Will last a lifetime. Satisfaction guaranteed. Write us for circular and special thirty day offer.

The Monarch Pruner & Mfg. Co., Inc.
Box 1463 Spokane, Wash.

In writing advertisers please mention The Fruit-Grower.



Killed While Pruning

That has been the fate of many who climbed to do the work in the old way, saw and axe fashion.

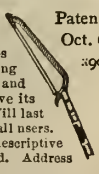
NOW the up-to-date operator stands on terra firma where he is safe, where he can shape a tree correctly and without mutilating the bark with his shoes. This bark wringing process can't be seen at once, but the damage is done just the same.

WHAT has brought the change? The use of the any length handle, automatic, well made, up-to-date KANSAS PRUNING KNIFE improved. This knife does big work, doing it fast and easy. Really pruning with it is a pleasure.

We would like to tell you more about the KANSAS PRUNING KNIFE, also about its little companion, the HAPPY THOUGHT PRUNING KNIFE with its quick pump gun action. Now while the pruning season is on, for your good as well as ours, drop us a card for more information. **The International Tool Co., 49 Porter St., Detroit, Mich.**

PRUNING SAW

Patented Oct. 6th 1903



Operates from ground. No breaking of limbs by climbing. No moving of ladders. No sawing of wrong limbs. Can reach topmost branches and shape tree better than by old methods. Will save its cost in one day. Nothing to get out of order. Will last for years. Thousands in use. Recommended by all users. If your dealer can't furnish it, write for full descriptive circular and prices. Satisfaction guaranteed. Address

FRUITGROWERS' SAW CO., Scottsville, N. Y.
J. A. SCHROER & CO., St. Joseph, Mo.
General Agents for Western States

"LIGHTNING"
SPRAYERS

At Your Dealer's or Write us. This Pump quickly attached to any barrel by bolting to staves at upper end of barrel. All working parts brass. Requires no priming. Brass ball valves and valve seats, paddle agitator. 5-ft, 5-ply hose. Brass Vermorel Nozzle, throws any size spray or stream 50 feet and impossible to clog. Adapted for spraying fruit trees, whitewashing stables and various other styles to select from. For spraying garden vegetables, trees, shrubbery, washing wagons, windows, etc. Write for free catalog and agents' proposition on full line.

No. 25 fig. 300-bbl. Spray Pump.

D. B. Smith & Co., 54 Genesee St., Utica, N. Y.

AGENTS! BIG PROFITS

The only stropper that strops any razor diagonally Guaranteed for Life.

Brand't patented Automatic Razor Stropper Automatically puts a perfect edge on any razor, **old style or safety.** Big seller. Every man wants one. Write quick for terms, prices and territory.

G. R. Brandt Cutlery Co., 84 W. Broadway, New York

Forage and Grass Seed

Seed Corn—Seed Oats—D. E. Rape

Originators **BROAD GUARANTEE** plan selling Farm Seeds by Mail. A full line of standard, high germination vegetable seeds. Send names and addresses of six of your seed using neighbors and receive coupon good for six half-ounce packages different varieties Watermelon Seed, your selection. Write today for catalogue. Address

EIKENBERRY BROS., 18 Hendrix St., CAMDEN, O.

TREES TRUE TO NAME SOLD DIRECT to planters. Ask for Catalogue.
BOONVILLE NURSERIES, Boonville, Mo.
Peyton Bros. & Barnes

Genasco

The TRINIDAD-LAKE-ASPHALT Ready Roofing

"Dead or alive?"

Which has greater strength and resisting power—a dead tree or a live one?

Every man who answers that question right knows why Genasco stays waterproof. The *natural* oils of Trinidad Lake asphalt give Genasco its *lasting life.*

Mineral or smooth surface. Several weights. Genasco comes in rolls ready to lay—no experience needed. Ask your dealer for Genasco. Write us for the illustrated Good Roof Guide Book and samples—free.

Ask for the **Kant-leak Kleet** packed in the roll of smooth surface roofing. It makes the seams water-tight without cement, and prevents nail leaks.

The Barber Asphalt Paving Company

Largest producers of asphalt, and largest manufacturers of ready roofing in the world

Philadelphia

New York San Francisco Chicago

Soil Salvation

25 years practical experience back of Bostrom's book entitled "*Soil Salvation.*" After studying it, you will know how to make useless land grow as big crops as the best, by **DITCHING, TILE DRAINING, TERRACING** or **IRRIGATING.** This book is **FREE** to interested land owners who write for it—it fully explains the use of

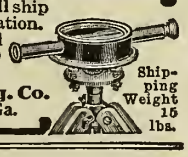
The Bostrom Improved

$15 FARM LEVEL

With Telescope

A perfectly SIMPLE, ACCURATE and DURABLE outfit which includes Level, TELESCOPE with magnifying lenses enabling you to read target a quarter of a mile or more away—also Tripod, Graduated Rod, Target, Plumb Bob and full instructions. Is used and indorsed from the Atlantic to the Pacific for all sorts of farm leveling.

If not sold in your town, will ship direct on receipt of price, $15—or will ship C. O. D., subject to examination. Money back if not satisfied AFTER ACTUAL FIELD TRIAL.



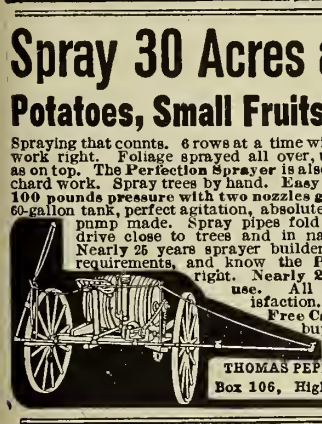
Shipping Weight 15 lbs.

Bostrom-Brady Mfg. Co.
151 Madison Ave., Atlanta, Ga.

Spray 30 Acres a Day

Potatoes, Small Fruits, Vines

Spraying that counts. 6 rows at a time with force to do work right. Foliage sprayed all over, under as well as on top. The **Perfection Sprayer** is also great at orchard work. Spray trees by hand. **Easy to maintain 100 pounds pressure with two nozzles going.** Strong 60-gallon tank, perfect agitation, absolutely best spray pump made. Spray pipes fold up—you can drive close to trees and in narrow places. Nearly 25 years sprayer builders. We know requirements, and know the **Perfection** is right. **Nearly 2000 now in use.** All giving satisfaction. **Write for Free Catalog.** Don't buy any sprayer till it comes.



THOMAS PEPPLER & SON
Box 106, Hightstown, N. J.

$4 Puts a Set of Steel Wheels on Your Wagon

Try wheels 30 days for heavy hauling on roughest roads. If wheels are as represented, pay balance. If not, back comes your $4. Write for Free Measuring Device.

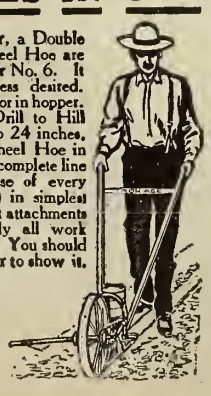
EMPIRE STEEL WHEELS

Made in one piece! All sizes, to fit any axle. Save 25% of draft. Thousands sold. Owners delighted. Life-savers for men and horses. Book Free.

Empire Mfg. Co., Box 912, Quincy, Ill.

FOUR TOOLS IN ONE

A Drill Seeder, a Hill Seeder, a Double Wheel Hoe and a Single Wheel Hoe are all combined in Iron Age, our No. 6. It drills accurately any thickness desired. Shut-off on handle, brush agitator in hopper. Changeable instantly from Drill to Hill Seeder or reverse. Drops 4 to 24 inches, as desired. Changed to Wheel Hoe in three minutes. Is but one of complete line that fits the needs and purse of every gardener. Can be purchased in simplest form and added to as different attachments are needed. It does perfectly all work after breaking up of garden. You should see this tool. Ask your dealer to show it. Write us for special booklets.



Complete line of farm, garden and orchard tools.

BATEMAN M'F'G CO.
Box 5062 GRENLOCH, N. J.

DRAINING THE FARM

A year ago last August I started to drain one of my lots in the lower part of which was a Kieffer pear orchard, and which needed to be drained. About a dozen of the pear trees were merely existing, making a growth of not over three inches. When the drain had been dug to about three feet deep, and before it had an outlet, water gathered to a depth of several inches, showing how much the land needed ditching. In less than a month after the ditch was completed I noticed the trees nearest to it, and consequently the driest, had started to grow, and before the end of the season had made a growth of several inches and were looking more healthy. These trees have now advanced so rapidly, that there is no difference between them and trees on higher land.

In laying out the drain on this land, the ditches were dug diagonally across the hill, so as to catch the water as it came down towards the lowlands, the outlet being through a ditch about 800 feet long, and in some places five feet deep, so as to get sufficient fall.

During the past fall we had several heavy rains, and the water flows freely, keeping the surface of the drained land as dry as the higher ground. When the proper depth at the head of the ditch has been decided upon the outlet must be several inches lower, or the water will not flow easily. To get this grade a heavy cord or fine wire was used. This was fastened to a stake firmly driven into the ground about a foot from the edge of the ditch. A second stake was driven about a hundred feet away and a cord fastened to it a few inches above the surface of the ground. The cord was then drawn tight and evened up with a level, and between these two stakes several smaller ones were driven and the cord or wire tied to them to prevent sagging. To get the proper grade in the bottom of the ditch, a square was made which would reach from the cord to the bottom of the ditch, and by means of which the tiles were laid on an even grade.

If the land has no natural fall the ditch needs to be dug so that there will be a drop of at least three inches to the hundred feet, and more if possible. Where large stones are encountered they must be removed and the hole filled with clay and pounded down so as to insure a solid bed for the tile. In the final levelling of the bottom of the ditch, a hoe or scoop can be had which will save time and enable better work to be done, as the bottom of the ditch must be smooth and of an even grade, otherwise the tile will not fit together snugly. In laying the tile, those sections which have rough ends, either from being chipped, broken, or left rough in the firing, should be turned to the bottom, so as to prevent silt from entering the tile.

A common mistake is made in supposing that water enters through the pores of the tile. This is not the fact for it gets in through the joints at the ends. Where the fall is slight and the tops of the tiles do not fit closely silt may get in, and if but little water is running the drain might become filled up, requiring it to be dug up again and replaced.

A ditch for tile is generally made wider at the top than at the bottom, which saves labor, besides the tiles are easier to lay when the bottom of the drain is nearer the size of the tile. The small tile is easier to lay than the larger size, and a long hook may often be used to place them, although this method is not considered as good as laying them by hand, as it does not insure good joints. In making connections with branches it is better to do so at a sharp angle, so as to use a "Y" rather than at a right angle, where a "T" must be used. The sharp angle allows the water to flow more freely. The size of the tile depends on several circumstances, such as the quantity of water to be drained and the area and slope of the land. In land which has but little fall a larger tile is required than one where the fall is good. But in general it is better to not use a tile that is too large, as it needs to be filled with water at least once a year to wash out the sediment that may collect.

In stony ground the ditches are usually dug wider than in clay soil in order that the stones may be removed, and where large rock are encountered these must be blasted if they cannot be removed otherwise. In digging the ditch for my five-inch tile, it was dug three feet deep by two feet wide, while the outlet was not over five feet.

In laying the tiles, large flat stones were placed along the sides, then the tiles were laid on them and small stones carefully wedged in between; then the space that was left was filled level with the top of the tile when a large flat stone was laid over it all, with more small stones on top. Then the remainder of the ditch filled with soil. In sections where stones for covering the tile are not on hand, coarse gravel serves the purpose, and must be carefully thrown in and packed around the tile so they will not be displaced when the earth or stones are plowed in later. If stones are plentiful it is a good way to get rid of them by filling the ditch above the six inches of gravel. In fact the ditch is all the better, as it allows the water to filter away all the faster.

If there is only loose sand or earth, and it has been thrown out on both sides, the easiest way to plow it into the ditch is by the use of a heavy board scraper which straddles the ditch and pulled by a horse on either side of the ditch. The board acts in the same way as a road scraper.

In some of my ditches no tile was used, there being plenty of flat stones. These were arranged in the ditch so as to leave a V-shaped channel, then covered with other flat stones, and filled around the outside with smaller stones to a depth of 15 inches. Such a method as this, when well done, will make a drain that will last for a great many years. In fact, there are many such ditches in my vicinity which have been in operation for thirty years and are still in good order. One such ditch as this was put in on my farm and has drained the land in a satisfactory manner. At the head of this ditch a small well was dug and filled with large rocks, while the top was covered over with smaller ones to prevent rubbish from choking it up. This well collected the surface water from the surrounding land and drained the place very much more quickly than a ditch could, and is a better method than to leave the end of the ditch open or cover with large stones.

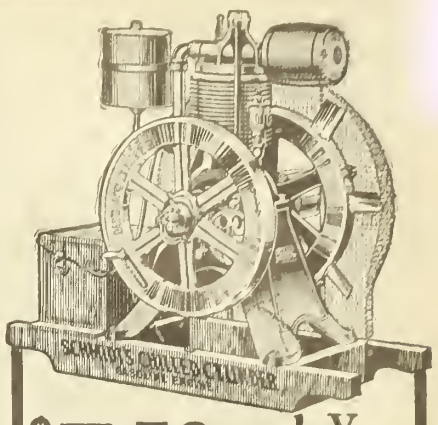
Of the many kinds of tiles made for drainage purposes the round, unglazed tile is the best to use, and they should be well burned or they will crumble and choke the ditch. The glazed tile is too expensive to use, and the water cannot enter it as freely. Other styles are used, such as the "sole tile" which is made in the shape of the letter "D" with the flat side down. These are seldom used, as the water flowing on the flat side will not have the force necessary to keep them clean as in the case of the round tiles. The hexagon or six-sided tile is not worth the trouble required in laying them, besides they are heavier.

At the outlet of the ditch it is best to make the last five or six feet of glazed tile to prevent the frost breaking the soft ones, and a grating made of a few iron bars driven across the end will keep animals from getting in the drain.

The cheapest way to dig a ditch is by the use of a ditch machine, drawn by two or more horses on each side of the ditch. These implements work nicely in soil that is free from stones, but where large rock may be encountered at any moment they are not so satisfactory. In these machine dug ditches, tiles must be used, as the ditch is too narrow to permit the use of the stone drains.

Ditching is expensive work, but it soon pays for itself, even in meadow or grass land for the crops will show what it means to get rid of the surplus water quickly.

New York. ARTHUR E. BELL.



$7.50 and You Keep This Great Engine

We will ship you Schmidt's Chilled Cylinder Gasoline Engine on your simple request without an order or any promise from you. You use the engine 10 whole days. Then if you don't want it send it back at our expense. If you do wish to keep it, pay us **only $7.50 and you can pay the rest in the easiest monthly payments**

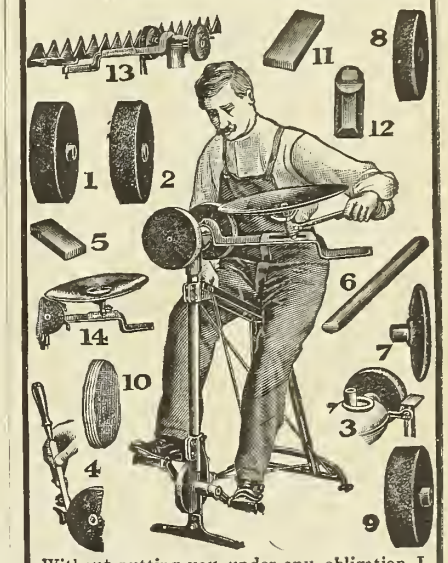
We send you the engine free, to prove to you that it is the greatest **air cooled** 3-horse-power engine on earth. Also your choice of 1½ H. P. and 7 H. P. engines. We want you to see for yourself that it is better than any other engine that costs twice and three times as much. It is the only engine that has the marvelous, powerful **chilled cylinder.** The only engine for farm use with a **spark retarder.** The new type gasoline engine that has revolutionized the gasoline engine industry.

Ten Days Trial FREE

This is the first genuine free trial ever offered on gasoline engines for farm and shop use. We want you to see that women and children can run this engine. Use the engine to run the pumps and any other machinery you may have. Schmidt's Chilled Cylinder Gasoline Engine is absolutely **guaranteed for five years** in every piece and part. The biggest bank in Iowa backs our $1000 challenge offer on our engines. Write to us promptly for particulars and we will send you a copy of our new book, "How to Use Power," free and postpaid. Write to us today.

SCHMIDT BROS. CO. ENGINE WORKS
DEPARTMENT 3662 DAVENPORT, IOWA

New Labor Saving Farm Machine



Without putting you under any obligation I will send you this new, all steel, shaft drive

LUTHER FARM TOOL GRINDER

for try-out on your farm, just to show how easy it is to keep farm tools keen and bright with the rapid **Dimo-Grit** sharpening wheels, how much better you can do your work and the time and money it will save.

Use the machine for **30 Days Free,** put every tool in fine shape—if you don't want to keep it, send it back—guaranteed for 5 years. Money back any time within 1 year.

FREE TRIAL OFFER—Write for 40 page book, also circular containing special introductory offer. Write today. Address C. J. Luther, Pres.

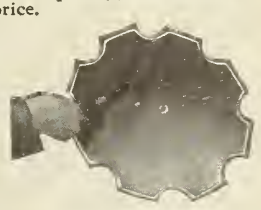
Luther Grinder Mfg. Co., 364A Stroh Bldg., Milwaukee, Wis.

In writing advertisers please mention The Fruit-Grower.

FORGED DISK BLADES

There is as much difference in the quality of the material used in the blades of disk harrows as there is in pocket knives. Some knives are made to sell at ten cents and others at a dollar. Many disk blades belong to the ten cent pocket knife class, but are worked off on buyers with the rest of the machine at the same price for which the best are sold. Consequently, the farmer cannot be guided by price.

The Cutaway Harrow Co. has built its remarkable reputation largely by the quality of the disks on its tools. It has had a real sincere ambition to give to the farmer the best disk blade he could buy. Their motive for so doing has been as much one of pride as of profit. The latter came because the policy of high quality paid.



The edge is forged, not rolled and ground.

Their one object has been constantly in view—the best blade possible. To accomplish that, forging the edges became a part of the process. Now all Cutaway Harrow Co.'s disk blades are forged. If you don't fully realize the advantage of forging, ask your blacksmith why a forged edge is better than any other. He will tell you why no other method is so good. This forged edge feature shows how the Cutaway Harrow Co. is doing the things necessary to produce the best tools. It is an indication of merit throughout every tool they make. Every buyer should demand Cutaway forged disks. They cost no more, and are many times better. If you will write them at 968 Main St., Higganum, Conn., they will send you complete information on the construction of Cutaway machines. It would pay every farmer to give them his ear. Write a post card today.

PROFIT IN OLD ORCHARDS

Old Orchards Can Be Made Profitable By the Use of Pruner, Sprayer and Cultivator

"Is The Fruit-Grower saying too much about the renovation of old orchards, to restore them to profitable fruit bearing?" We asked ourselves this question recently, and when we came to consider the thousands of apple orchards in this country which should be made to produce profitable crops, and which are now producing nothing, we answered in the negative.

In every state of the Union shrewd men are buying up old orchards and are cleaning up and are making big money on their investments. In the Middle West business men are leasing these old orchards and as the leases usually cover a term of from five to ten years, they are well repaid for the work done in pruning, fertilizing and cultivating the trees.

At the recent meeting of the New York State Fruit Growers' Association, Dr. F. H. Lattin, a practicing physician of Albion, N. Y., read a most interesting report of his work in cleaning up some old orchards in Orleans and Oswego counties. It seems that Doctor Lattin has gone into this business quite extensively, and his experience is most helpful. Some persons have claimed that to clean out one of these old orchards costs more than to plant and care for new orchards. Doctor Lattin's experience, however, is quite the contrary, for he doubtless makes the old orchards pay for themselves several times over before young trees would reach bearing age.

We have not space to tell of the various orchards which this gentleman has bought and leased, but several examples are typical of the entire lot. We quote from his paper:

"Orchard No. 2 contains 200 trees, about fifty years old, of the following varieties: Sixty Baldwin, 60 Russet, 30 Greening, 10 King, 10 Tallman Sweet, 5 Northern Spy, 15 fall varieties and 10 winter assorted. This orchard came also under my care in the spring of 1903, and had previously received fairly good care. The orchard was recognized locally as only a fair one; the soil varied from a light sand to a clay loam; at least 25 per cent of the original planting having been killed from lack of proper drainage. For several years previous the returns from this orchard had averaged about $300 per annum. That is, when the fruit was cheap the crop was such that the gross returns were about that amount and when high it was about the same. The fruit of this orchard harvested, or marketed, since coming into my possession has been as follows:

1903...451 barrels	1904...495 barrels
1905...477 barrels	1906...468 barrels
1907...493 barrels	1908...500 barrels
1909...552 barrels	1910...360 barrels
1911...711 barrels	

A nine-year average of 488 barrels. The annual gross receipts have averaged $1,102.93.

"Orchard No. 5 contains 120 trees about forty-five years old and consists of the following varieties: Eighty Baldwins, 25 Russet, 10 Greening, and five other varieties. This orchard is located across the road from Orchard No. 3. Soil stony clay loam, with good drainage. While working in the latter during the fall of 1905 and spring of 1906 the owner had at various times endeavored to induce me to take charge of this one and finally, in May, 1906, at the time the blossom buds were showing pink he offered to give me a five years' lease and furnish stable manure for its immediate covering (of which there was a year's supply in his barnyard) at an annual rental of $100. This I accepted. The land on which this orchard had been set was ideal for orchard purposes, but the orchard itself had been neglected and the land used for pasturing cattle and other stock and was nearly ruined. The total returns for the three years previous had been less than one hundred barrels of fruit. The Baldwin trees, in particular, were in such a bad condition that all of the large lower limbs were dead and had to be removed. I have marketed fruit from this orchard as follows:

1906...311 barrels	1907...232 barrels
1908...600 barrels	1909...191 barrels
1910...550 barrels	

A five-year average of 377 barrels. The average annual returns have been $951.60.

Doctor Lattin also took charge of some old orchards in Oswego County, with equally good results. He tells his experience with several of these orchards, as follows:

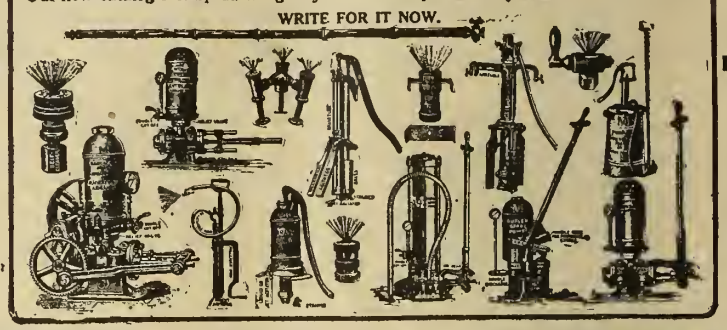
"Orchard A—Soil stony, gravel loam. Contains about 150 trees forty years old: 60 Baldwin, 60 Greening and 20 Fall Pippin. This, with forty acres of land, was purchased in 1908 for $700. During the preceding five years the crop consisted of less than 100 bushels of cider apples per annum. Soil was in an impoverished condition and trees in such a bad state that no new wood had been formed during the past few years, and were actually dying back. It was with difficulty that the pruners could take out the dead from the live brush from the terminal branches and, in fact, wanted to quit pruning entirely until I could examine the trees, as they regarded them as worthless and that the time spent in pruning them as wasted. The orchard was, however, heavily pruned, has received annual applications of either 500 pounds of stable manure or 100 pounds of wool waste fertilizer per tree; has been sprayed and tilled thoroughly each year. The returns have been as follows:

"1908—About 150 barrels; 1909, this orchard was visited by one of the worst infestations of the aphis I have ever witnessed, completely covering the entire tree, not only ruining a fine crop of fruit, but also weakened or destroyed the fruit buds then forming on the Baldwins for the crop of 1911, as well as those already formed for 1910; 1910, about 250 barrels, mostly Greenings; 1911, 500 barrels of very fine Greenings and Fall Pippins were packed from the eighty trees. The Baldwins, as before stated, had not recovered from the severe onslaught of aphis in 1909 and from them we harvested only about 30 barrels.

"Orchard B—Consists of 50 King trees; soil, age, tillage, fertilization and spraying practically the same as in Orchard A. I only mention this block of orcharding from the fact that when pruned in 1908 most of the tops were entirely dead and the present ones were formed from the water sprouts selected for the purpose, which at that time were three or four years old. The crop of over 100 barrels in 1911 was practically the first one for many years.

"Orchard C—Soil stony, gravel loam, consists of 80 trees about forty-five years, set 40x40 feet. The varieties are about one-third Greenings, one-third Baldwin, and the balance Tallman, King, Twenty Ounce and early fall varieties. This orchard, which is one of my best in either Orleans or Oswego County, is a portion of a tract of 160 acres of pasture, timber and farm land purchased in 1909 at $7 per acre. Thoroughly pruned in 1909; 1910 plowed and tilled thoroughly; yield about 175 barrels. Had the orchard been sprayed and fruit properly harvested the yield would have been nearly or quite double this amount. 1911 was an off year for the orchard. From less than forty of the trees which fruited, we packed 300 barrels of

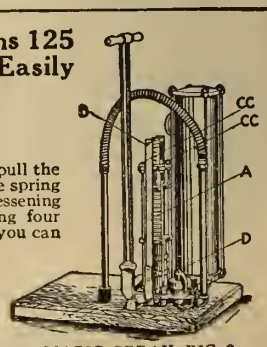
MYERS
SPRAY PUMPS AND NOZZLES
are made in many styles and sizes to meet every spraying need from the small knapsack or bucket outfits to the large power rigs. They have all been developed in line with modern spraying requirements and have long since passed the experimental stage. We show here a few types of our complete line of Spray Pumps, Nozzles, Bamboo Extensions and Accessories. Our new catalog No. Sp-12 will give you full descriptions and prices.
WRITE FOR IT NOW.



LOOK FOR THE NAME
MYERS Pumps
Force or Lift, Hand or Wind Mill, Well or Cistern, House Tank, Plain or Ratchet Handle.
MYERS
Power Pumps, Belt or Direct, for Gas Engines or Motor, Hay Unloaders, Double or Single Steel or Wood Track, Hay Slings, Forks, Pulleys, Hay Rack Brackets, Stayon and Tubular Door Hangers and Track, Cushion Tire Store Ladders, Etc., Etc.
Distributed By Over 30,000 Dealers
Write for Complete Catalog and Circulars
F. E. MYERS & BRO.
Ashland Pump and Hay-tool Works
160 Orange Street ASHLAND, OHIO

Spraying Trees
with the H. P. SPRAMOTOR means that the trees will be adequately protected. The horse does everything but direct the nozzle, and that you will prefer to do yourself. The SPRAMOTOR can be operated by hand where preferred. Has eight nozzles with 175 pounds pressure. The number of nozzles can be arranged to suit size of trees. No tree too large. The SPRAMOTOR is equally efficient for vineyards, row crops or grain, and the nozzles will not clog.
Get our free treatise on crop diseases. AGENTS WANTED.
SPRAMOTOR CO., Ltd.
1315 Erie Street BUFFALO, N. Y.

The One Hand Spray Pump That Maintains 125 Pounds Pressure and Can Be Operated Easily
PORCELAIN-LINED, NON-CORROSIVE CYLINDER; INDESTRUCTIBLE HARD-BRASS BALL-VALVES WITH REMOVABLE AND REVERSIBLE SEATS; NO STUFFING BOX OR OUTSIDE PACKING.
In the illustration, note powerful spring shown at A. As you pull the handle you compress the spring only. When you push it back, the spring expands and helps you force the liquid into the air-chamber—lessening labor by a third. By pulling out two cotter pins, B, and releasing four nuts, C, you can pull out the plunger. By releasing set screw, D, you can open valve-chamber and take out both valves, seats and all.
Write today for new 1912 catalog of famous Bean line of hand and power sprayers.
THE BEAN SPRAY PUMP COMPANY
East of Missouri River, address 101 Front St., Berea, Ohio
West of Missouri River, address 524 Walnut St., Kansas City, Mo.



MAGIC SPRAY, FIG. 9
Read description at left.

DISTINCT FUNGICIDAL PROPERTIES
Circular No. 7 of the Virginia Agricultural Experiment Station, March, 1910, speaking of San Jose scale, says: "The Lime-Sulfur Wash, either home-made or commercial, and the soluble oil sprays are the most satisfactory remedies for this pest. The soluble oil sprays, either home-made or commercial, are probably best for treating the apple, because the oil spreads better on the downy twigs of the apple." "Scalecide" is the acknowledged leader of all soluble oils—the only one containing distinct fungicidal properties; standing the test for the past six years on all kinds of fruit trees. "Scalecide" has no substitute. There are other reasons. A postal request to Dept. E will bring you by return mail, free, our book, "Modern Methods of Harvesting, Grading and Packing Apples," and new booklet, "SCALECIDE, the Tree-Saver." If your dealer cannot supply you with "SCALECIDE" we will deliver it to any R. R. Station in the United States east of the Mississippi and north of the Ohio Rivers on receipt of the price; 50-gal. bbls., $25.00; 30-gal. bbls, $16.00; 10-gal. cans, $6.75; 5-gal. cans, $3.75. Address, B. G. PRATT CO., 50 Church Street, New York City.
H. J. WEBER & SONS NURSERY CO., WESTERN DISTRIBUTING AGENTS, NURSERY, MISSOURI

choice winter fruit, a number of the trees picking eight to ten and one twelve barrels.

"Orchard D contains 230 trees about forty-five years old, set forty feet apart consisting of the following varieties: 115 Greenings, 95 Baldwins, 10 Kings, 10 Roxbury Russet; soil stony, gravelly clay loam. This orchard is located about three miles north of Hannibal on the Hannibal-Oswego road, was previously used for pasture and had produced little or no fruit during the past five years—actual crop of 1910 was less than 50 bushels of cider apples; the previous owner for eighteen years assured me that about once in seven years the orchard had a fair crop, except the west half, which never produced any fruit. After purchasing, a local fruit grower and produce dealer encouragingly informed me 'that apples could be more quickly grown on fence stakes.' This orchard was perhaps below the average of over fifty acres of neglected ones within a radius of one-half mile. From previous experience, however, it looked like a good proposition two or three years hence, if properly handled.

"The trees, while containing much dead brush, were actually growing an inch or two of new wood annually. It came into my possession Nov. 1, 1910; was plowed during that month, but froze up solid before the furrows could either be rolled or leveled with a drag—was manured thoroughly with 500 lbs. of well rotted stable manure per tree during the winter and spring of 1910 and 1911—an additional 200 lbs. of wool waste fertilizer was applied per tree in the spring of 1911.

"During the month of December, 1910 it was severely pruned, and perhaps for the following six or seven months this pruning was even more severely criticised. While this pruning was very conservative from a standpoint of thoroughness and the future good of the orchard, I was confidentially advised a number of times that the orchard had been damaged all the way from $1,000 to entire ruination. Sprayed properly and thoroughly five times during the season. Harrowed every week or ten days until July 15th, followed by a cover crop of rag weed.

"In October we harvested from less than 150 of the trees from this worthless (?) orchard over 950 barrels of apples, as fine as we ever grew.

"The trees have made eight to ten inches new growth during the past season, and are well loaded with fruit buds for 1912.

"I am neither a theorist, experimenter nor scientific horticulturist—just a plain, practical fruit grower and, like others, endeavoring to raise the maximum amount of good fruit at minimum cost.

"Our methods and ideals pertaining to the proper pruning, tillage, spraying, thinning and fertilization of orchards are as follows:

Pruning.

"Our pruning in Oswego County has been, perhaps, too severe to be advisable for the average farmer or fruit grower to follow. Our work has been for the future; that is, for three to five years hence rather than for the following year; and for the beginner to attempt to follow our excessive pruning without a definite purpose or plan in view might prove disastrous. The best time to prune is in the early spring months; any time after the middle of February until the leaf buds begin to open in the spring. Cut out all dead wood and all injured, broken limbs caused by wind, spraying or harvesting of fruit and in doing so always cut back to a main limb or to a leader, as conditions may require. Make your cuts clean and close to the main limb or trunk and parallel, leaving no stubs. In doing this it is often advisable to make two cuts, the first one, perhaps, a foot or two from the permanent one. Never remove a large limb without cause. If you have no good reason for removal, better leave it alone. The wounds caused by the removal of large limbs, at least those of three or more inches in diameter, should be painted over with white lead, coal tar or concentrated lime-sulphur solution.

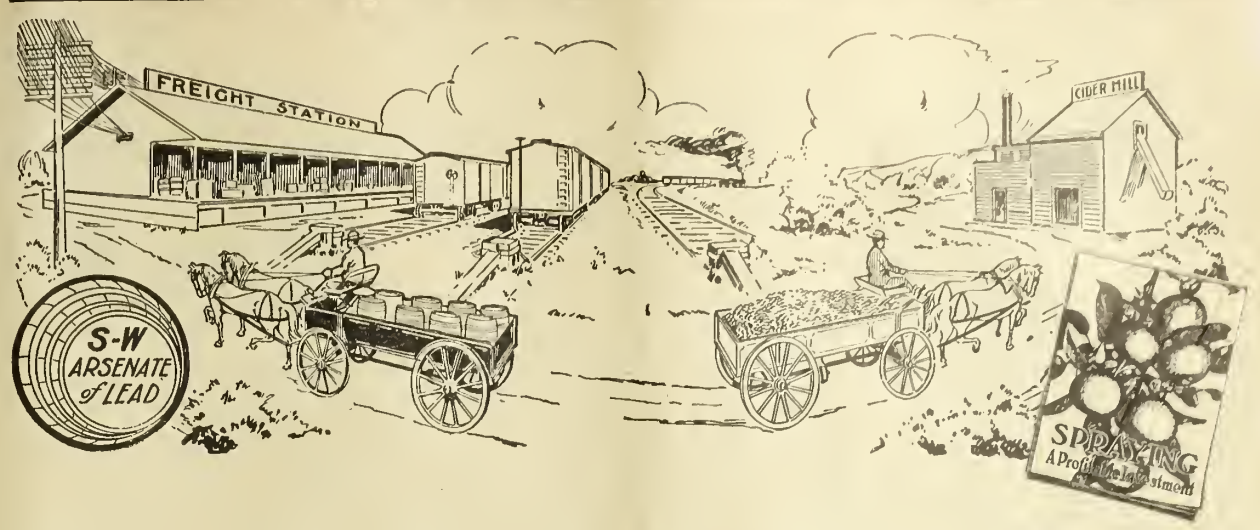
Tillage.

"The orchard should be plowed any time after the fruit has been harvested in the fall, or as early in the spring as frost conditions of the ground will permit. Plow as shallow as furrows can be turned, roll down and harrow. The orchard should then be cultivated or harrowed every week or ten days until about the middle of July, at which time a cover crop of clover or other suitable material should be sown. Or, perhaps the easier method of allowing a crop of weeds to grow and take the place of the cover crop would practically answer the same purpose.

"Some advocate the sod mulch system. This is not advisable in the western New York district, and is questionable if in any other, where the ground is not too rough to allow of tillage. Thorough tillage renders a portion of plant food in the soil available and in condition for the trees to absorb this natural store of fertility. Remember, however, that tillage does not take the place of fertilization, but simply aids in exhausting the supply provided by nature—which we must replenish.

Spraying.

"Without thorough and intelligent spraying the work in pruning, tillage and fertilization, in most years, would amount to nothing, and, in order to get control of the fungous diseases and insects with which your orchards are infested, it will be necessary, for a few years at least, to spray five times. The past two seasons have demonstrated the fact that the lime-sulphur solution for fungicidal purposes and the arsenate of lead as an insecticide are the proper preparations for us to use. Any of the leading commercial brands of these preparations are reliable. Spraying is better and more economically performed with a power sprayer, using the angle nozzle and, with the exception of the first spraying at least, the disc with smallest aperture. Spray number 1 should be applied in the spring before the fruit buds begin to open and the tree should be thoroughly drenched with one part lime-sulphur solution to 9 of water. This spray is for the blister mite, San Jose scale and fungous diseases. Spray number 2 should be applied at the time the buds begin to show pink just before opening. Lime-sulphur should be used in strength



Where do Your Apples Go?

The time has passed when good fruit could be produced with little or no attention given to the growing. Fruits are good or bad, depending largely on the methods of culture and spraying you adopt. If you want fruit fit for the most exacting markets you must spray—and for best results use Sherwin-Williams New Process Arsenate of Lead for combating the codling moth and all other leaf-eating insects.

SHERWIN-WILLIAMS NEW PROCESS ARSENATE OF LEAD

is a safe, sure and economical poison. Safe because it contains practically no free or uncombined arsenic which causes burning of foliage. Sure, because it has the maximum amount of arsenic which will combine with lead in an absolutely safe material. Economical because it is thoroughly combined and spreads evenly over the foliage and because of its excellent adhesive qualities. If properly used, S-W Arsenate of Lead will produce the best possible fruit which will sell at the highest prices.

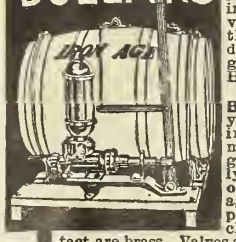
SPRAYING, A PROFITABLE INVESTMENT

a book of 120 pages and over 50 illustrations, tells in a clear and concise manner how to spray profitably. That is, how to get the best results at the least expense. It specifies when to spray to check or eradicate the different destructive insects, and furthermore it mentions a specific material for over a hundred distinct insects and diseases. This book was compiled from data gathered by experts and is perfectly reliable and impartial. It has been endorsed by a number of the State Experiment Stations throughout the country.

Write for a copy of "Spraying, a Profitable Investment," mailed free for the asking, and for our Agent's name in your locality.

THE SHERWIN-WILLIAMS CO.
MAKERS OF INSECTICIDES AND FUNGICIDES
667 CANAL ROAD 1217 CLEVELAND, OHIO

SPROUTING DOLLARS



YOU have dollars that never "sprout." Are you going to leave them lie and rot? They are in your fruit trees, vines and gardens. Give them a chance, and the dollars will sprout, and grow, and bear dollars. How? By spraying.

With the IRON AGE BARREL SPRAYER you can kill injurious insects and fungi, and make your trees and gardens bear abundantly. All working parts outside, except the agitator. High pressure pump. Parts with which chemicals come in contact are brass. Valves are bronze ball.

This practical Sprayer is only one of a complete line of orchard, garden and field tools.

Write to-day for Booklets.

BATEMAN MFG. CO., Box 506 H GRENLOCH, N. J.

In writing advertisers please mention The Fruit-Grower.

"KANT-KLOG" SPRAYERS
Something New
Gets twice the results with same labor and fluid. Flat or round, fine or coarse sprays from same nozzle. Ten styles. For trees, potatoes, gardens, whitewashing, etc. Agents Wanted. Booklet Free.
Rochester Spray Pump Co. 196 Broadway Rochester, N. Y.
Spraying Guide Free

LIME-SULPHUR HYDROMETER Used By All Progressive Fruit-Growers
Price By Mail With Test Jar and Instructions.... $1
Agents Wanted Everywhere
CARBONDALE INSTRUMENT CO., Carbondale, Pa.

1 to 40 with 2 or 3 pounds of the arsenate of lead added to each 50 gallons of the solution, as prepared for spraying. This spray is of especial importance for the bud moth, case bearer and other leaf and fruit-eating insects. Spray number 3 should be applied immediately or within three or four days at least after the petals of blossoms fall. It is most important that this spray should be a fine mist and driven deep into the calyx, and is the principal spray to protect us from the ravages or damages of the codling moth and in average seasons is probably the most important application for apple scab. Spray number 4 should be applied a week or ten days following spray number 3 and will catch the few codling moths and leaf-eating insects which escaped the previous spray. Spray number 5 should be applied the last week in July or not later than the first week in August, and is to kill the late brood of codling moth and to kill the spores of the fungi, which, under favorable conditions, sometimes begin to develop at this time. The strength of the lime-sulphur solution and arsenate of lead used in sprays number 3, 4 and 5 should be practically the same as that given for spray number 2.

Thinning.

"Our thinning of fruit has been limited to one systematic and two or three spasmodic or sporadic attacks—enough, however, to convince that proper early thinning of fruit is one of the essential factors in successful fruit growing. While proper thinning will not only pay a handsome profit in money returns the first year, it will induce a tendency for annual instead of biennial crops—produce fruit of maximum size, color and quality; will insure against serious breaking of limbs on heavily loaded trees and eliminate the necessity for usage of props.

"In one of our reclaimed orchards the past season proper thinning would have prevented a damage of several hundreds of dollars in the breaking down of unpropable limbs.

Fertilization.

"The best fertilizer or material to use for the fertilization of orchards, is stable manure, which should be applied annually at the rate of a large farm wagon load to four trees, or at least 500 pounds to each tree. Where stable manure cannot be obtained other manure or commerical fertilizer must be used. As there are no rootlets, or feeders, within 3 or 4 feet of the trunk of a large tree, the material applied within that distance is practically wasted. The balance of the ground, however, should be completely covered. If in doubt, it is better and safer to apply double this amount of fertilizer per tree than a smaller one. Liberal applications of stable manure to your orchards furnishes humus to make the soil warmer, checks sudden changes of temperature, makes hard soil more pliable and loose soil more compact, adds plant food in the most available and desirable form, holds moisture and renders available plant food which has been lying insoluble in the soil. Papers have been written, many talks given and irreparable damage done by able and honest men on the waste of fertilizers in our orchards. I have as yet, however, to find a single fruit grower in the Western New York fruit belt whose annual crop will range from 400 to 1000 bushels per acre over a series of years, who is an advocate of the unprofitable fertilizaztion of orchards or who would dare to plan or extend their operations over a future series of years, with a full understanding of the inroads of the soil depletion which their large crops are making without liberal and judicious application of fertilizers annually."

Saved the Crop on a Home Orchard.

The writer lives in Lancaster County, Pa., and the limit of his property is confined within less than one acre, so his experience cannot be to a very large extent. We have only one dozen apple trees all told, and their ages range from those which are too small to bear, to trees about 27 years of age. Five years ago the greater part of them were affected with San Jose scale, some to such an extent that if nothing had been done by this time to baffle the scale, they would likely all be dead, for one of them, a Baldwin was loaded with apples, and not one of them was fit to eat.

Our first experience in spraying was with caustic soda with the result that two of my smallest trees were killed outright, and two others almost ruined. My second experience was with lime-sulphur and salt, home boiled, with better results in killing the scale, but a miserable thing to handle.

Next I tried the preparation called "Scalecide," diluted 1 to 16, applied in the fall of the year, and with excellent results. Today the trees are almost perfectly clean of scale and from a crop of 146 bushels of apples scarcely half a bushel showed any scale, although the trees had had no treatment for two years. Early this winter another treatment was made of the same material.

Last spring the trees were full of blossoms and as soon as they dropped we sprayed them with "Pyrox" 1 to 8 gallons of water, making one application. The results were excellent. The trees during the past summer, were loaded with the finest fruit we ever raised. On one of these trees we harvested 41 bushels for which we received $29.50 in addition to a quantity that we kept for use in our family. These apples were sold to dealers at wholesale prices. Had I received for them what the dealers did I would have received from $35 to $40 for the apples from this one tree.

A Grimes Golden tree had all it could mature nicely, and one of the apples on a Delicious tree weighed fourteen ounces. From six trees we received 140 bushels of apples, averaging from 90 to 95 per cent free from codling moth.

We also fertilized our orchard soil with phosphoric acid and potash, using a mixture containing 10 per cent of the former and 1 per cent of the latter, applied in the fall of the year. Our orchard is in grass and is used as a poultry yard.

Our experience the past season proves that the soil and climate in southeastern Pennsylvania is better adapted to growing fruit than the tiller of the soil adapts himself to the art of raising it. I would say, do not forget the old adage, "feed the land and it will feed you," which is just as true with apples as with any other crop, and yet how few think of ever feeding the orchard.

HENRY HERSHEY.

Pennsylvania.

STRAWBERRY PLANTS

We have an unusually fine stock of Strawberry Plants, chiefly of the commercial varieties, such as Aroma, Gandy, Excelsior, Klondyke, Lady Thompson, etc. These plants are well rooted, are perfectly healthy and free from insects, and are in every way desirable. Write for prices on the quantity you want. Order early, and be sure of getting the varieties you want.

Peach and Apple TREES

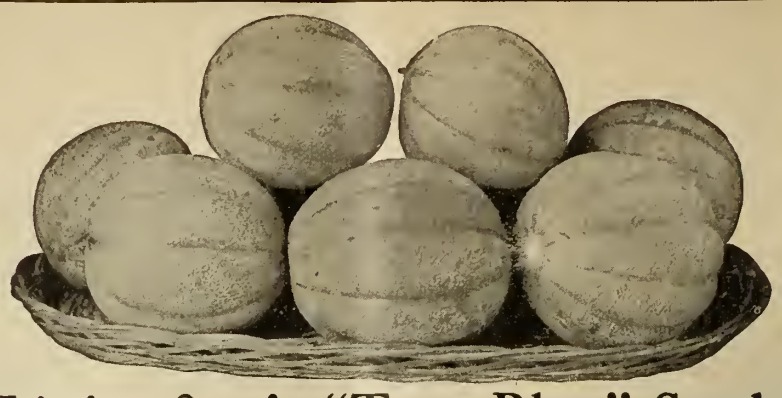
Our line of nursery stock is very complete, and we have an especially fine lot of trees of commercial varieties. In peach trees, we have June-budded and one-year trees, of all standard sorts. We can supply apple trees in any quantity. Send list of your wants for prices.

Cabbage Plants

If you grow early cabbage, write us for prices of our frost-proof plants. We are specialists in this line, and will have millions of strong, stocky plants for spring delivery. You save time and money by using our plants. Write for prices and state when you want plants delivered.

Chattanooga Nurseries

D. W. Hunter, Prop. Chattanooga, Tenn.

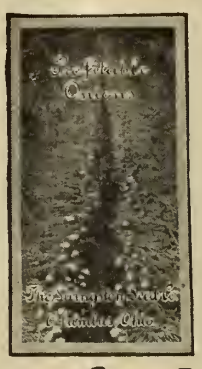


Livingston's "True Blue" Seeds

are carefully selected to meet the requirements of the most critical. No efforts are spared to make them truly "Pedigreed." Large quantities of important American vegetable seeds are grown on our own farms while the most reliable European growers have standing orders to save the choicest for us. A careful study of booklet and catalogue described below will show you why "true blue" seeds deserve your confidence.

Ohio Sugar Melon

illustrated above, is one of our gilt-edged specialties. Has been called by experienced growers the "sweetest green-fleshed musk melon that grows." Seeds we offer have been saved on our own farms from finest specimens. Produces beautiful, good-sized, symmetrical fruits of deliciously sweet and aromatic flavor. Flesh thick and firm, eatable to the thin outside rind. Outsells every other melon on market after its superb qualities become known. Illustrated in natural colors on page 9 of our large catalog described below. Be sure to give "Ohio Sugar" a fair trial. It'll prove a money-maker for you. **Pkt. 10c, ½ oz. 20c, oz. 35c, postpaid.**



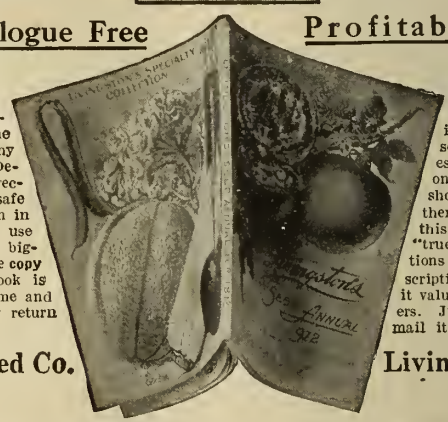
Ohio Grown Onions

are the finest that can be grown. Rich soil, ideal climate, constant selection and careful methods in seed production give our onion strains characteristics not found in the common article. Whether you raise onions for profit or for home use, you should plant Livingston's Ohio-grown Seeds for best results with this crop. Procure booklet and catalog described below and learn some more about it.

Ohio Yellow Globe is a heavy cropper of distinctly shaped handsomely colored bulbs of even size. They have small necks, ripen early, are firm and solid and most excellent winter keepers. Often yield 800 bushels per acre. **Pkt. 5c, oz. 20c, postpaid.**

Superb Catalogue Free

A handsome book of 130 pages. Nearly 300 pictures from photographs and honest description make it one of the most trustworthy seed books issued. Dependable culture directions render it a safe guide to a good garden in which you should use "true blue" seed for biggest returns. **Your free copy** of this big garden book is reserved. Send us name and address and get it by return mail.



Profitable Onions

is the title of our new onion booklet. It tells all about the old and new method of growing large onions from seeds, describes the finest strains of American onions procurable and shows how we produce them. Procure a copy of this booklet sure. Its "true to nature" illustrations and dependable descriptions of methods make it valuable to all onion growers. Just ask for one! We'll mail it free!

Livingston Seed Co.
431 High Street
Columbus, Ohio

Livingston Seed Co.
431 High Street
Columbus, Ohio

Better tools mean bigger crops

The successful farmer and gardener works with the *best equipment*. The day of old-fashioned tools is past. On the best-tilled farms and gardens the world over, Planet Jr tools are doing the work.

Planet Jr

stands everywhere for the latest-improved, most useful and economical farm and garden tools. Products of 35 years' experience by a practical farmer and manufacturer who has made a science of tool-building. 55 tools; guaranteed.

No. 4 **Planet Jr Combined Hill and Drill Seeder, Wheel Hoe, Cultivator, and Plow** does the work of almost all garden tools combined. It sows accurately *all* garden seeds, cultivates, hoes, furrows, and plows. Indestructible *steel frame.*

No. 8 **Planet Jr Horse Hoe and Cultivator** does more kinds of work better, quicker, and easier than any other cultivator. Indispensable on the up-to-date farm.

FREE! **A 64-page illustrated farm and garden book!** It's yours for the asking! And it's brimful of the most valuable farm and garden information. The latest tools for *all* cultivation shown. **Send postal for it today!**

S L Allen & Co
Box 1107C
Philadelphia Pa

Wragg Nursery Company

312 Good Block, DES MOINES, IOWA

Large Stock APPLE, CHERRY, PEACH

GRAPE VINES, CURRANTS, BLACKBERRIES, Etc.
CAROLINA POPLAR, ALL SIZES, LARGE STOCK

Specialties Wragg Cherry and Jonathan Apple, one and two year old for commercial planting. We are the introducers and headquarters for Wragg Cherry. Apple grafts made to order. We grow a complete line. Submit list of wants for quotations. Ask for our new catalogue. Largest Evergreen nurseries in Iowa.

SPECIAL PRICES ON KLONDIKE AND AROMA

Strawberry Plants

I have a very large stock of these two kinds, I can furnish large orders. Send your list for special prices. I have all varieties.

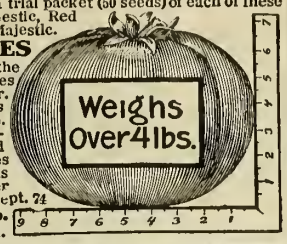
J. A. BAUER, Box 15, JUDSONIA, ARKANSAS

Grow These Wonderful Prize Tomatoes.

We have the largest varieties of tomatoes in the world. Specimens have been grown weighing over 4 lbs., and of superior quality and flavor. Can you do as well? It's certainly worth trying. Send 10c, stamps or silver, and we will send a trial packet (50 seeds) of each of these varieties, viz.; Majestic, Red Majestic, Yellow Majestic.

$75 IN PRIZES

are offered for the largest tomatoes grown this year. Full particulars with each package. Ask for our complete illustrated catalog of novelties and standard sorts vegetable, flower and farm seeds. Dept. 74



Iowa Seed Co.
Des Moines, Iowa.

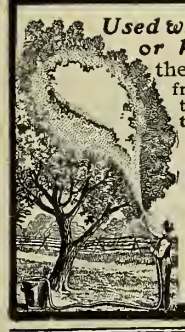
Fruit Trees at Bargain Prices

HERE'S AN EXAMPLE

1 Red Astrachan Apple	1 Bradshaw Plum	Home Garden Collection 10 Trees $2.00
1 King Apple	1 Lombard Plum	
1 Montmorency Cherry	1 Bartlett Pear	
1 Yellow Spanish Cherry	1 Duchess Pear	
1 Crawford Peach	1 Elberta Peach	

A WORD ABOUT OUR TREES
You can't buy any better anywhere. They're grown in northern climate, hardy, free from scale, healthy.
HOW WE DO BUSINESS
We have no agents. All we ask is one small profit for ourselves—not the three or four agents' profits.
GET OUR ORCHARD ENCYCLOPEDIA
That's what we call our latest catalog because it gives so much information about fruit growing. Most valuable book of its kind ever published.
ALLEN L. WOOD, Woodlawn Nurseries
579 Culver Road, Rochester, N. Y.

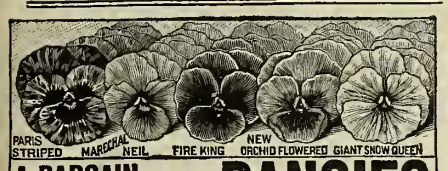
Standard Spray Pump



Used with bucket, barrel or knapsack. Sprays the tallest fruit tree from the ground. Does the work in half the time. Sprays whitewash and cattle "dip." Made of brass and warranted for five years.

Write for special offer or send $4. Expressage prepaid. Money refunded if not fully satisfied.

STANDARD STAMPING CO.
541 Main St., Marysville, O.



A BARGAIN COLLECTION OF PANSIES

Five full size packages, marvelous and striking varieties. Gigantic in size, richest, novel and unique colorings for **ONLY 10c**

FREE PANSY BOOKLET HOW TO GROW BIG PANSIES

and the handsomest Seed and Plant Guide ever issued. Hundreds of illustrations, many in colors, true to nature. Mention this paper. Send today. Don't wait.

GREAT NORTHERN SEED CO.
2316 Rose St. Rockford, Illinois

Great Crops Of STRAWBERRIES And HOW to GROW THEM

is a complete treatise on strawberry culture written by America's greatest strawberry expert. Indorsed by agricultural colleges and strawberry growers of highest authority. It tells all about our big branch strawberry plant farms in

IDAHO AND OREGON

Where the pure Kellogg thoroughbreds are grown to perfection for our *Pacific Coast and Inter-Mountain State customers.* Government reports show that strawberries yield more dollars per acre and give quicker returns than any other crop. Get our book and learn how.

IT'S FREE!
R. M. KELLOGG CO.
Box 305 Three Rivers, Mich.

HUNDREDS OF CARLOADS OF FRUIT AND ORNAMENTAL TREES

Evergreens, Shrubs, Hardy Roses, Etc. 1,200 acres, 50 in Hardy Roses, none better grown. 47 greenhouses of Palms, Ferns, Ficus, Everblooming Roses, Geraniums, and other things too numerous to mention. Mail size postpaid, safe arrival and satisfaction guaranteed. Immense stock of SUPERB CANNAS, the queen of bedding plants. Acres of Pæonias and other Perennials. 50 choice collections cheap in Seeds, Plants, Roses, etc. For Fruit and Ornamental Trees ask for Catalog No. 1, 112 pages; for Seeds, Everblooming Roses, Cannas, Geraniums, Greenhouse and Bedding Plants in general, Catalog No. 2, 168 pages. Both FREE. Direct deal will insure you the best at least cost. Try it. 58 years.

THE STORRS & HARRISON CO., Box 312, Painesville, O.

ALPINE STRAWBERRIES

Grown from seed, producing berries the first season and bearing continuously thru the summer. No garden complete without a bed of these delicious berries. For 10c we will send postpaid a generous packet of the above, also our new 120 page Fruit and Vegetable Growers Guide for 1912. The most complete line of Nursery Stock at wholesale prices.

FARMER SEED & NURSERY CO.,
524 Fourth Ave. Faribault, Minn.

HOW TO GROW OKRA

Okra is a very desirable vegetable to grow in the home garden. Its principal use is for flavoring soups, and although it may not be liked by some at first, a taste can be easily cultivated for it by eating it a few times. Okra or gumbo prefers a rich moist soil, although it can be grown successfully on dry upland soil that will produce a good crop of tomatoes or cotton. But unfortunately it is a plant that is subject to the cotton wilt disease, and therefore care must be used in the South to avoid planting it on soil infected with this disease.

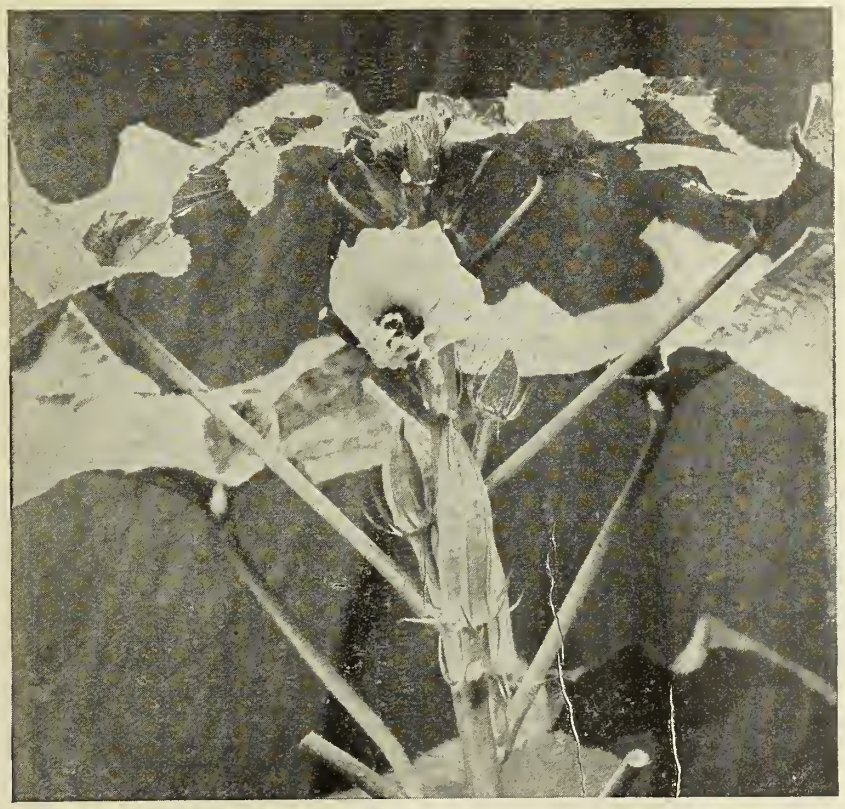
For fertilizers, cow manure combined with commercial fertilizer gives good results with okra. The soil should be broke deep, and the fertilizer put in several days before planting. The seed may be sown on the level of the soil, or on ridges about three or four inches above the level of the land. Sow the seeds thickly in the drill, and when well started to grow thin to one plant every eighteen inches or two feet. The rows should stand two and one-half to three feet apart, the distance to be governed by the fertility of the soil, and the variety that is planted. One to one and one-half ounces of seed is required for every fifty feet of row. Plant when trees are well out in leaf and all danger of frost is past.

Okra should be cultivated frequently and shallow, but the cultivation needs to be continued up to the middle of July. By doing this, and by keeping pods cut off and not allowing any to make seed, the plants will continue to bear through the season. However, the pods which come late in the summer are not as tender as the first. The pods must be cut with a sharp knife, and not pulled or broken off the plant. Early in the morning is the best time for gathering, as the pods are more brittle at that time than during the warmer hours of the day.

The young pods of okra can be dried for winter use, and are very satisfactory in that condition. Old pods are not desirable for drying, as they are tough and woody and never soften up so as to be edible after they are dried. But for winter use, it is better to can the okra. It can be canned in just the same manner as corn, beans, etc., in which condition it is very delicious. In canning this vegetable, Farmers' Bulletin, No. 232, of the U. S. Department of Agriculture says that no copper, brass or iron cooking vessels should be employed in preparing okra, as the metal will discolor the pods or even render them poisonous. The cooking should be done in agate or porcelain ware.

There are several types or varieties of okra, the most popular, and probably the most desirable is the "Lady Finger," the plant of which is very bushy; pods long, slender and of a pale green color. This variety is quite similar to "White Velvet." "Kleckley's Favorite" is very prolific, with short jointed, white pods and the plants average about two and a half feet high. "Dwarf Prolific" is very early, very dwarf and stocky, with short, green pods. "Perkins' Mammoth" is long podded, grows tall, well fruited with very long pods. This sort is popular for shipping.

Georgia. THOMAS J. STEED.



OKRA, THE LARGER PODS OF WHICH ARE READY TO USE

To Fall Tomato Growers.

Some of the readers of the Fruit-Grower who raise tomatoes for fall market, especially those in the West and Southwest may not know how to ripen green tomatoes which accumulate on the vines in great quantities just before frost. When you are notified of a freeze coming, or just when your thermometer shows the approaching cold, pull the vines, stack them in a pile and cover.

If you have the time, pull all of the fruit that is near maturity and bank the pile in as follows: Scoop out with a hoe or shovel a shallow pit, pile the tomatoes in and cover with canvas or sacks, and then with enough dirt to retain the moisture. Every few days assort and re-cover the green ones. The idea is to retain moisture and keep an even temperature. In fact this method pays even when no danger of a freeze, especially in fields where the vines are not staked and where showers come and the cool nights followed by warm days tend to crack the fruit and spoil it for shipping.

Of course the fruit will have to be handled with care and be well washed before shipping. Have plenty of water handy and dump the tomatoes into a tub of water, stir them with the hands, lift them out into a box and let them dry. Then crate as per ripeness. Last season a freeze caught me early, and by this method I saved nearly $100 per acre on two-thirds of a total crop. I had, however, anticipated the early freeze, and with help had gathered the best of the crop several days beforehand, expecting to smudge, but by 8 o'clock p. m. it had begun to freeze, and my son and I began pulling vines, and we were able to save a large quantity of fruit before it was frozen. This season my main crop came early, but I used the same methods for the late tomatoes.

By this method a half-grown tomato will ripen to a beautiful pink, while the large ones are beauties and have a delicious flavor. I ship my fruit to commission men, express agents and to merchants all over Southwestern Texas, and the checks I get are "proof of the pudding."

Texas. B. T. KILLOUGH.

CHILDS' RESPLENDENT TOMATO

Fruit of all colors, green, white, lemon, pink, orange, yellow to deep ruby-red, borne on the same plant in wonderful abundance. Showy and attractive beyond description. Plant dwarf, stout, upright with novel foliage. Fruit large with more solid flesh and less seed cavity than any other. By all odds the richest, meatiest and finest flavored Tomato.

We are introducing **Resplendent** as the best and most beautiful Tomato, novel and distinct at only **10c. per pkt., 3 pkts. for 25c.**

With each packet of seed we mail a booklet which tells how to grow and use Tomatoes. One hundred Receipts for cooking and using the fruit are given, many entirely new. Also Catalogue.

Our Catalogue of Flower and Vegetable Seeds, Bulbs, Plants, Shrubs and rare new Fruits mailed free to all who apply. We offer many startling Novelties, including the most beautiful and unique Rose, Dahlia, Aster, Celosia, Sweet Corn, Melons, Cannas and Gladiolus yet seen. Liberal premiums, discounts and Universal Coupons given. Address:

JOHN LEWIS CHILDS, FLORAL PARK, N. Y.

Once Grown Always Grown

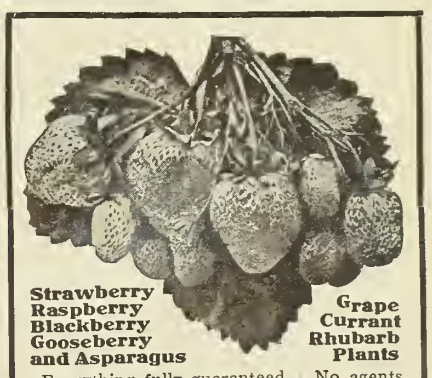
Maule's Seeds

Fruitmen in all sections pronounce them the best ever

My new Seed Catalogue is a wonder. Contains everything in seeds, bulbs, small fruits and plants worth growing. 600 illustrations; 176 pages. Anyone sending his name on a postal card can have it for the asking. *Send for it today.* Address

WM. HENRY MAULE
1707-09-11 Filbert St., Philadelphia, Pa.

Send 5 cents (stamps) mention this paper, I will enclose in the catalogue a packet of the above GIANT pansy.



Strawberry Raspberry Blackberry Gooseberry and Asparagus

Grape Currant Rhubarb Plants

Everything fully guaranteed. No agents, premiums or schemes of and kind. All plants sold strictly on their merits, and IN LARGE LOTS AT WHOLESALE PRICES, 20th annual catalogue free.

A. R. Weston & Co., R. 11, Bridgman, Mich.

In writing advertisers please mention The Fruit-Grower.

FERRY'S SEEDS

Plant breeding and selecting has been our business for years. We market the results in the shape of thoroughbred vegetable and flower seeds. They grow good crops.

1912 SEED ANNUAL FREE ON REQUEST

D. M. Ferry & Co., Detroit, Mich.

6 PACKETS GARDEN AND FLOWER SEEDS FREE

Send your name and address today and we will send you FREE 6 packets Royal Quality Seeds and our 1912 Seed Catalog. We want you to try Royal Quality Seeds—the seeds of royal reputation. Field and Grass Seeds a Specialty. Royal Quality Chick and Hen Foods increase poultry profits. FREE samples also if you write today.

RUDY-PATRICK SEED CO.
1012 Hickory St. Kansas City, Mo.

ROYAL QUALITY SEEDS

OUR HOME FOLKS

Conducted by MRS. RUTH MOTHERBY. Address all Communications to Home Editor The Fruit-Grower

February Work for Flowers.

If you want a really fine flower garden, next summer, you must begin this month to get ready for it. Of course, if you are able to buy bedding plants, you need not propagate them; but to most flower lovers the work of propagation is anything but a trouble, and it certainly does save a lot of money.

In the fall you should have put a large box of rich soil in your cellar, to be used for this purpose; also a box of sand. You should also have taken up the best geraniums in your garden, and other plants that you wish to use for bedding plants another season. I give such plants just enough water to keep them growing nicely, but I try to keep them so cool that they will not bloom, for I want them to be well rested for the propagation process in February.

My propagation boxes are long, narrow and shallow. I had them made for the purpose, with handles at each end so that they can be easily lifted. I spread a layer of the rich dirt on the bottom, and cover that with sand; then I set the boxes in the oven to heat so that all insect life, or seeds of weeds, may be killed. When the soil has become cool enough, I stick in the slips quite close together and keep the soil moist but not wet, or the slips will rot. They will usually become well rooted in three or four weeks, and then they should be lifted from the box and potted. I can't afford small pots for this purpose, so I make cones of heavy building paper, and place them as closely together as possible in a box, sifting sand around them to keep them upright. You will be surprised to see how many of these cones can be packed into a box. There need be none of the vacant spaces that are found in boxes of small pots, and they are not so heavy to lift. If the plants are carefully watered these paper cones will be in good enough condition to be lifted when the plants are to be bedded. The plants should be well watered before they are bedded, so that the dirt will stay packed about the roots. They should also be well watered before the slip is to be transferred to the paper cones. When bedding these plants, I put them in cone and all. That keeps them from wilting; it also tends to keep worms away from the roots until they are old enough to be out of danger, and when the roots are large enough to require more space, they easily push their way through the wet paper.

After transferring the slips from the propagating box to the cones, pinch out the top so as to start side shoots, and when these are three inches long, pinch them back a little to keep the plant from growing too tall and spindling.

I use the paper cones for my bulbs, also, and I find them much more economical in every way, and equally good. I simply make them larger than the cones for plants, and use the paper doubled, so as to make them stronger.

When the slips have been removed from the propagating boxes, which usually takes place early in January, I then plant seeds of salvia, asters, annual phlox, and other flowers that I wish to bloom early. I actually get more pleasure raising these things in this way than in seeing them bloom after they have been transferred to the garden. RUTH MOTHERBY.

The Old-Fashioned Nurse—2.

Do you have many neighbors who give chamomile tea in cases of rash? I'll warrant, most of you have never heard of it; and as for raising chamomile in your garden—well, if you do it, you are wiser than most of your friends!

Yesterday, my niece called in a physician to prescribe for her two-year-old, who was suffering from rash—a common result of a disordered stomach. The doctor gave her a written prescription for chamomilla! She got it filled at the drug store, and paid a good price for it, too; and she might have given plain old-fashioned chamomile tea, if she had known enough to prepare for a disease common in most families where there are children, and by so doing have saved quite a sum toward baby's education.

Saffron tea, sage tea, sassafras tea, and sulphur mixed with cream of tartar are all good for any rash, and they do no harm, even when the rash turns out to be measles or scarlet fever or chicken pox. If, while giving any of the above named remedies, the rash fails to disappear, and there are indications of fever, look for symptoms of measles or scarlet fever. Measles usually starts in with what appears to be a heavy cold, or acute catarrh, while scarlet fever brings a sore throat, a high fever, and a disagreeable dryness of the mucous membranes. Measles break out on the fourth day, while scarlet fever begins to show a rash on the second day. In scarlet fever, the rash is of a lighter and brighter shade of red than the raspberry-red of measles. Measles appear in spots, like flea bites, while the rash of scarlet fever is smooth to the touch. As a rule, both these diseases are preceded by indications of illness, while with rash there are seldom preliminary symptoms of distress.

When you decide that you have a case of measles to care for, it is wise to put the patient to bed, even though he doesn't seem to be very sick. I have no patience with the mothers who take chances simply because measles seems to be such a harmless disease, for I have seen too many cases where even a mild attack left troubles that could never be entirely overcome. It is wiser not to take chances. Put the patient to bed, and keep him there until the worst is over. It is better to keep the room darkened even when he is able to be up, for measles are apt to be hard on the eyes. Of course, if you have a room that can be aired, without danger of drafts, and if the patient can be kept there in a steady temperature, and if it is kept darkened, the patient can be up when he feels well enough. But drafts are apt to send the rash in, or to so act upon the membranes that what started with the cold that ushers in measles will become a settled condition.

I give cold drinks exclusively to patients suffering with measles. I do not believe it is a good plan to give both cold and hot drinks, and I am in favor of the cold because the patient likes them better. My idea is that the rash breaks out better and stays out if cold drinks are taken and the surface of the body is kept warm. I believe in warm baths, but only when the patient can be kept in bed afterward, and allowed to perspire a little.

A cold tea made of catnip and Virginia snake-root will be found excellent when the fever is high. When the rash is uncomfortable, sponge the patient with saleratus and water, and then powder the entire body with burnt flour. If the bowels are not loose enough, give grape juice; if too loose, give tea made of blackberry roots—and always give these teas cold. A nice drink can be made of the juice of stewed blackberries. It is efficacious when taken frequently, and is so palatable that the little patient seldom refuses it. Malted milk, toast water, rice water and broths are the best foods; but the latter are seldom liked when cold. I have found that few children will take milk when suffering from measles.

In bad cases of measles, there is diarrhoea with great pain and nausea—a condition that should be attended to at once. I give injections of starch water, containing a few drops of laud-

To Keep Milk Pails Clean and Sanitary

Sprinkle Old Dutch Cleanser on a rag or brush, rub pail thoroughly, rinse well and the pail is spick and span — "sweet" and hygienically clean.

Contains no caustic, alkali or acid to harm the hands.

Old Dutch Cleanser

Many uses and full directions on large Sifter-Can 10c

FARM with a TYPEWRITER

IT PAYS TO BE UP-TO-DATE

Pen-written letters are decidedly out of date for a live, wide-awake farmer.

WITH A TYPEWRITER YOU CAN

Sell your apples, potatoes, butter, eggs or stock—Typewritten Letters Bring Better Prices.

Order your 1912 grain, seed, machinery, repairs—Typewritten Letters Command Attention!

Trade. Work up a direct trade with town or city people by typewritten letters giving lowest prices.

Typewrite all your results. Know exactly what pays, what you spent, what you receive. Typewrite all accounts for easy reference!

Correspond. Typewritten letters look business-like and trustworthy. No better introduction than a good typewritten letter.

Copy Letters. A Typewriter will make a copy of your letter same time it writes. Copies protect you, remind you!

Educate the children. A Typewriter helps your boy or girl to spell, punctuate, write good English; fits them for good positions in city or town.

Improve the long winter evenings. Get busy with a typewriter. Let the boy or girl help you in your correspondence, etc.

Typewriting Easy to Learn

You can learn to work the typewriter in an evening and end by writing a letter. Speed comes with use.

NOW'S YOUR OPPORTUNITY!

In all the 25 years we have been selling Standard typewriters we do not know of such a Big Bargain as this Standard $100 Machine for $26.

The Smith Premier Typewriter Co. recently put on the market a new model and took these No. 2 machines as part payment.

By an extraordinary deal we secured all they had. They have been thoroughly rebuilt, refinished, renickelled in our own factory. Now they Look Like New, Work Like New and will give perfect satisfaction.

Our Guarantee is equal to the manufacturer's original guarantee.

THIS No. 2

SMITH PREMIER TYPEWRITER $26

Free Trial—Sign the coupon below and mail at once—no obligation, no expense to you,—

We are Responsible.

Look us up! In Dun or Bradstreet, or ask your own bank.

American Writing Machine Co.
345-347 Broadway, New York.

Please send me full particulars concerning Free Trial Offer of Smith Premier Typewriter for $26.00, without any obligation or expense on my part, as advertised in The Fruit-Grower

Name .....

Address .....

No More Drudgery in Washing

The EASY Vacuum Washer turns the gloom of Wash Day into sunshine, because it washes the clothes thoroughly without any fatigue or drudgery. The EASY *does the work* quickly and effectively.

EASY

Washes Clothes by Air

30 Days' Free Trial

There is no grinding or dragging of the clothes. The EASY principle is to agitate the water by suction and air pressure and force the suds through the fabric. This is tne only way known to thoroughly cleanse the clothes without injury. The EASY washes fine laces with the same facility as blankets. Write today to

DODGE & ZUILL, F-G 4 Syracuse, N. Y.

anum, alternated with injections of weak tea, and allow only toast water, milk, malted milk or blackberry tea in the way of refreshment for at least twelve hours following the attack.

Occasionally one finds a case where the patient is very sick, and there is no show of rash. In that case, use the hot bath, and allow the patient to perspire, but guard very carefully against drafts. Apply weak mustard plasters to the feet, wrists, abdomen and chest, and if this treatment doesn't bring out the rash in a few hours, and the patient still remains very sick, send for a physician, for all has been done that a nurse should undertake to do.

Next time, I'll tell you what I have learned about scarlet fever.

AUNT KETURAH.

The Housekeeper's Emancipation.

There will not be much progress in the work of making farm life easier for women, until women have been taught that it is an evidence of wisdom to know what not to do, and an evidence of Christianity to refrain from doing it! Mary forebore to perform her household tasks, and the Master said "She hath chosen the better part." But Martha censured her, and to this day, the majority uphold Martha's judgment of our modern Marys, instead of agreeing with the Master.

It is a great thing to know what not to do. We are so constantly being told about our duty being to do the work which lies at our hand, that many of us forget to look upward and outward at all. We spend our whole lives doing the petty little tasks, and vaguely hoping that something better will come to us sometime before we die as a sort of belated reward. The ability to do a great thing implies power to perform a lesser; we don't have to "show" every doubter who hasn't anything better to do than challenge us!

Don't rush at every petty little task as if your soul would be endangered if you didn't do it immediately. Dare to analyze it, and if it seems of small importance, let it go undone, and look for something really worth while. Dare to discriminate. Don't do anything simply because it presents itself as your duty. Never ask yourself if it would be wrong to leave it undone, but if it would be wise to do it. That is the only way to emancipate yourself.

The woman who does cheerfully that which she cannot avoid doing, who tries to make others happy, who is not too tired to laugh, and who realizes that she is something more than a machine, is of far more value to the world than the mere housekeeper who seldom finds time to get outside her spotless home. I'd rather have a greasy friend with a jolly laugh, than one who is as clean, yet as frigid as an icicle.

If there is ever to be any real improvement in the life of the housekeeper, it will come through those women who know how to discriminate in tasks, and who dare neglect a few of them. They are the only ones who ever find time to give a push to the wheel of progress.

Did you ever stop to think how much the world owes to its inventors? Well, inventors are those who seek easy ways to do the work they don't want to do as their grandfathers did it. We women have got to learn a lesson from them, and work out our own salvation from domestic slavery, or we'll never know the joys of emancipation—for it is a task that no one can do for us.

In my opinion, we shall find our salvation in organization. We are learning through the various women's clubs how to work together for pleasure, and soon we'll be organizing for mutual help in our everyday duties. The Woman's Exchange was a right step to this end, but most of us didn't recognize it as such, and so most of the Exchanges failed. But the Exchange was needed, and I fully believe it is destined, in the near future, to take a prominent place in the solution of the problem: "How to make farm life attractive to women." When that time comes, it will be more of an exchange and less of a money-making venture. And it will mean an exchange of labor as well as of the results of labor.

MABEL CADWALLADER.

February Work.

Many people complain that February, although the shortest month in the year, really seems to be the longest. They are so tired of the winter, and spring seems so far away, that they allow themselves to become discontented, nervous, and impatient. I know it was so with me, until I learned to make it my busiest month; since then, I often wish it were twice as long.

February is my month for doing the family sewing. It is understood that husband, and Raymond, the eldest boy, must do as much of the housework as they possibly can, so as to give me time to sew. Raymond has learned to run the sewing machine, and he is very proud of his work. He well may be, for few women can do better work on the machine. He never has to be coaxed to help me, for he enjoys doing it, and it is surprising how fast we get on, with me to baste while he does the stitching.

If there are to be new curtains to be put up after the spring cleaning, they are made in February. And it is then we plan how to use the best parts of the old curtains. In fact, we do a great deal of patching and making over of all kinds before we begin the new work. All sheets, table linen, pillowcases, and coarse towels for the year are made in February. I buy crash for everyday towels and hem them; they are cheaper and last longer than the towels we buy ready made. I have found a coarse, thin muslin, very like that of which flour sacks are made, that I buy for dish towels. Our flour does not furnish as many sacks as we need for dish towels. Raymond turns the hems of the sheets and bastes them before hemming them; but uses the hemmer wherever possible, and his work is very neat. I wonder why more mothers do not get their big sons to help them in this way? We get so very well acquainted, and I know my boy has told me things, while we were working together, that he would never have thought of mentioning had we been less intimately associated. We have good times together while sewing.

I buy good unbleached muslin by the bolt. That was a common practice with our mothers and grandmothers; but younger housekeepers do not do it. Some clerks will tell you that you really do not save enough worth mentioning to buy muslin by the bolt; but I find that it counts in large families. This is especially true when it is used for sheets. I make sheets for the boys' beds, also for the beds used by the hired help. When one of the seamless sheets is worn out in the middle, it is difficult to turn it. When you think of turning a sheet, it really seems like a foolish waste of time, but in the long run, you will find that it pays—more especially if you have a large family and keep help. Besides, the unbleached muslin washes much more easily than the bleached, and it soon becomes as white as the bleached. For underwear for every day, and for night gowns, you will find that good unbleached muslin will wear longer, wash more easily, and not soil as quickly as bleached muslin.

I shrink gingham before making it. All the dark gingham dresses and aprons for everyday wear, are made with square collars, and very plain—and they are all made in February.

I buy the ribbed material that is made for stockings. It adapts itself to the form, and wears much better than any stockings you can buy. I

The world's greatest artists
make records only for the world's greatest musical instruments—
Victor and Victor-Victrola

As the world's greatest opera stars make records only for the Victor, it is self-evident the Victor is the only instrument that does full justice to their magnificent voices.

And as the Victor reproduces the actual living voices of these famous artists in all their power, sweetness and purity, it is again self-evident the Victor is the one instrument to provide you not only the gems of opera but the best music and entertainment of every kind.

Whether you want to hear Caruso or Melba in grand opera, or "Alexander's Ragtime Band", or "Put On Your Old Gray Bonnet", or "Nearer My God to Thee", or "Onward Christian Soldiers"—whatever you want—you get it at its best only on the Victor.

Hearing is believing. Any Victor dealer in any city in the world will gladly play any Victor music you wish to hear and demonstrate to you the wonderful Victor-Victrola. Write to us for catalogs.

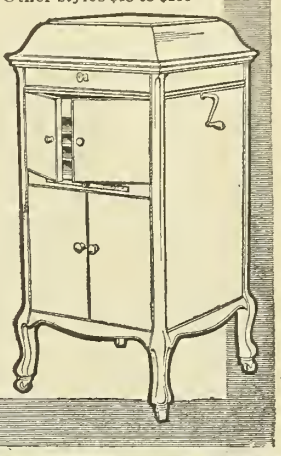
Victor-Victrola XIV $150
Other styles $15 to $200

Always use Victor Records played with Victor Needles—there is no other way to get the unequaled Victor tone.

Victor I, $25
Other styles $10 to $100

Victor Needles, 6 cents per 100; 60 cents per 1000

Victor Talking Machine Co.
23rd and Cooper Streets
Camden, N. J.
Berliner Gramophone Co.
Montreal
Canadian Distributors



LIGHT UP!

You can transform any kerosene (coal oil) lamp or lantern into dazzling brilliancy with our wonderful **Bright Light Burner.** 50 candle power invisible and **unbreakable Steel Mantle.** Brighter than electricity, better than gas or gasoline, and **perfectly safe.** No generating—simply light like any kerosene lamp. Nothing to get out of order. Positively will not smoke or flicker.

AGENTS WANTED EVERYWHERE. Sells like wildfire. An opportunity of a life time, work all or spare time. Experience unnecessary. Make big money—be independent. Write today. Act quick—territory going fast. Complete sample, postpaid, **30c, 4 for $1.00. Money back if not satisfactory.**

BRIGHT LIGHT CO., Dept. 46 Grand Rapids, Mich.

THE "BEST" LIGHT

More brilliant than electricity or acetylene and cheaper than kerosene. Costs two cents per week. **Casts no shadow.** Most perfect light for stores, factories, churches, public halls or the home. Makes and burns its own gas. Simple, durable and handsome. In use in every civilized country in the world. No dirt. No grease. No odor. Over two hundred different styles. Agents wanted everywhere. Write for catalog and prices.

THE BEST LIGHT CO.
277 E. 5th St., Canton, O.

"Seeing Is Believing"

"Bright. Soft, Easy on the eyes."

SUN Gasoline LAMP

Conforms to insurance underwriters' rules.
12 years of success.
Satisfaction or money back
Should be in every home. Equally good for store, office, church, school. 100 candle power each burner. 1, 2, 3, 4-burners—108 styles. Burns 90 per cent. air—10 per cent. hydro-carbon vapor. Hollow Wire Systems also.
Agents Wanted. Get Free Catalog.
SUN LIGHT CO. 1237 Market St., Canton, O.

HOW TO GET BETTER LIGHT From KEROSENE (Coal Oil)

Recent test by Prof. Rogers, Lewis Institute, Chicago, and Prof. McKergow, McGill University Montreal, on leading oil-burning lamps show the Aladdin Mantle Lamp is the most economical and gives over **twice as much light** as the Rayo and other lamps tested. It is odorless, safe, clean, noiseless. Better light than gas or electric. Every Aladdin Lamp fully guaranteed and protected by patents in nearly every country on earth. Our burners fit your old lamps. To introduce the Aladdin, we will give

ONE LAMP or BURNER FREE

in each neighborhood. Send postal with name and address, ask for cat. **AGENTS** Ball sold over 1000 on money back alogue M. guarantee; not one returned. Bruner sold $800 in 15 days. Ask for liberal agency proposition. Sample lamp furnished.
MANTLE LAMP COMPANY, 174 Aladdin Building, Chicago, Ill.

SUNSHINE LAMP FREE

to try in your home 15 days. Incandescent 800 Candle Power. Gives better light than gas, electricity, acetelyne or 15 ordinary lamps at one-tenth the cost. Unequaled for fine sewing or reading. Burns common gasoline. Absolutely safe. **COSTS 1 CENT PER NIGHT** Guaranteed 5 years. No wick. No chimney. No mantle trouble. No dirt. No smoke. No odor. A perfect light for every purpose. Take advantage of our 15 day free trial offer. Write today. **FACTORY PRICE.**
Sunshine Lamp Co., 63 Factory Bldg., Kansas City, Mo.

BEACON LAMP BURNER FREE

100,000 satisfied users
Incandescent. 100 Candle Power. Burns common coal oil. Gives better light than gas, electricity or six ordinary lamps at one-sixth to one tenth the cost. Fits your old lamp Unequaled for fine sewing or reading
COSTS ONLY ONE CENT FOR SIX HOURS
We want one person in each locality to whom we can refer new customers. Take advantage of our Special Offer to secure a Beacon Burner FREE Write today Agents Wanted. HOME SUPPLY COMPANY, 380 Home Building, Kansas City, Mo.

TRAVELING MAIL BOX

For those who have from 300 ft. to 1½ miles to go for their mail. Easily placed on telephone poles or 2 x 4's fastened to fence posts. The
OAKWOOD MAIL CARRIER
Made entirely of metal. Ball-bearing pulleys. Sold on thirty days' trial. Write for book "Getting the Mail."
Oakwood Mfg. Co. 13 Stanton Ave. Springfield, Ohio.

WATCH, RING AND CHAIN FREE

Our American made, stem wind watch beautifully designed case, factory-tested, guaranteed for 5 years, and this latest style double heart signet ring are given to boys and girls for selling 20 packets of high grade art post cards at 10c a packet. Order 20 packets to-day. When sold send us $2.00 and we will positively send you at once the watch, ring and chain.
Palace Mfg. Co., Dept. 79 Chicago

ANY MAN CAN GET $1,000.00

Who Joins Fritter's $1,000 Class

For goodness sake listen to me.

Reader, I Fritter, am talking to YOU!

—Am saying, that you; yes, you, can get $1,000; but be warned—only 5,000 can be accepted. So get mighty busy—write Fritter today. It costs nothing to investigate this remarkable $1,000 class.

5,000 Men Will Get $1,000 Each

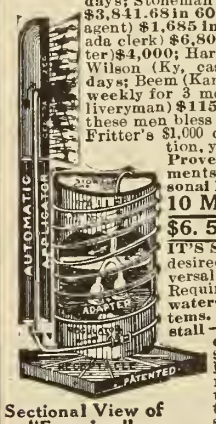
You, by acting now—today—can get the thousand allowed to your section. This money—$1,000 or more per man—goes to **mechanics, clerks, farmers, preachers, doctors, lawyers, teachers**—people from all walks in life—any man, anywhere—up to 5,000, who is willing to join Fritter's $1,000 class. Nobody barred. Not a fairy tale, fake or humbug; for I listen—it's going on daily—hundreds have received their thousand—some many thousands. If you can use $1,000—real money—payable $35 to $75.00 weekly—say so—don't hesitate—don't delay a minute; but get the thousand-dollar hustle—**get your first $1,000**—first start, first taste of real independence—power, influence, luxuries—get these through Fritter, just as hundreds have done. Poor men joining his wonderful $1000 class

Without Capital—Without Experience

—starting with only their nerve—finishing with thousands—yes, thousands of dollars. You, if willing to join hands with Fritter, can easily enjoy same abundant prosperity. Knowing the reason dispels all doubt—creates confidence—enthusiasm

Class Getting Over $2,000.00 Per Man

Korstad (Minn. farmer) received **$2,212.13 in 2 weeks**; Zimmerman (Ind. farmer) **$3,856 in 30 days**; Stoneman (Nebr. photographer) **$3,841.68 in 60 days**; Rasp (Kansas agent) **$1,685 in 73 days**; Juell (Canada clerk) **$6,800**; Oviatt (Iowa minister) **$4,000**; Hart (Va. farmer) **$2,000** Wilson (Ky. cashier) **$3,000 in 30 days**; Beem (Kans.) averaged **$164.25 weekly for 3 months**; Langley (Dak. liveryman) **$115 first day.** No wonder these men bless the day they joined Fritter's $1,000 class. Reads like fiction, yet it's the gospel truth **Proven by sworn statements—investigation—personal interviews.**



Sectional View of "Energizer"

10 MINUTES' WORK

$6. 50 Cash, Presto!

IT'S SOLVED. The long-desired, much wanted, universal bathroom has come. Requires **no plumbing, no water-works—no water systems. 10 minutes to install—$6.50 to buy. The equivalent of any $200 bathroom.** Self-heating—hot or cold running water facilities. Cleansing, friction, massage and shower baths in any room. No tubs to clean bowls or buckets to fill. Simple, durable, handsome, sanitary. The dream of millions come true. Modern homes, modern bathing facilities within the easy reach of every man, woman and child in the land. No experiment. **Used by U. S Government. Over 200,000 delighted customers.** With such an article, with exclusive selling rights, with Fritter's help and your nerve you're bound to make from $1,000 to $5 000 this year. **It's not a question of ability, location or capital** (for we give credit to active workers) **but whether you act quick enough to get into Fritter's $1,000 class. Once in you're good for a $1,000 anyhow.** Reese solicited 60 people—sold 55; McDaniels 20—sold 19; Lodewick 44—sold 39—17 orders in one day; Hart "16 in 3 hours;" Wilson, "102 in 14 days."

Address Fritter personally today—make him prove his claims and above all that you too can get $1,000. Don't accept anything without proof. First get Fritter's entire proposition—it's free. Then decide. Just a postal will do.

M. FRITTER, Secretary and Manager

ALLEN MFG CO., 3473 Allen Bldg., Toledo, O.

$584.00 Buys All Lumber, Lath

Shingles, Doors, Windows, Mill Work, Hardware and Nails needed to build this Modern Four-Room Bungalow, including Architect's Blue Print Plans and Complete Specifications.

Size—24x28, 4 Rooms and Bath

Get Our Book of Designs Our Design Book contains more than 50 Designs of Houses, Bungalows, Barns, etc., for which we furnish all Brand New Guaranteed Material.

Mailed on receipt of 10c Postage.

Read Our Free Building Plan Offer

GET OUR WHOLESALE PRICES ON LUMBER, MILLWORK, ROOFING, PLUMBING AND HEATING PLANTS

FREIGHT PREPAID

CHICAGO WRECKING COMPANY

4100 Gravois Ave., St. Louis, Mo.

Mention The Fruit-Grower.

COOK YOUR FEED and SAVE Half the Cost—with the PROFIT FARM BOILER

With Dumping Caldron. Empties its kettle in one minute. The simplest and best arrangement for cooking food for stock. Also make Dairy and Laundry Stoves, Water and Steam Jacket Kettles, Hog Scalders, Caldrons, etc. Send for particulars and ask for circular S. D. R. Sperry & Co., Batavia, Ill.

used to sew these up around the toes, to shape them, but I have since learned to take up stitches and toe them off like knitted stockings. They fit beautifully and there are no troublesome seams. It makes nice work for the evening. I use black mercerized knitting cotton for the purpose. It really takes only a comparatively short time to get enough for a year—such a fine box full of stockings—more than I could ever buy all at one time!

I hear women tell that it is as cheap to buy ready-made underwear as it is to make it. But I am sure they are mistaken. I tried buying it, and every week I spent as much time mending as it would have required to make it, and yet we never had any that looked really neat. If you buy anything that is as well made as that you make for yourself, you will find that you must pay more for it than it would cost if made at home. It does seem like a task when you try to do it at odd jobs and always have unfinished sewing lying about; but make a business of it, just as you do of cleaning house, and it is exciting. My son and I get so interested, that we often hate to be called down to dinner.

I use our spare bedroom for a sewing room during February. That is the one month in the year when guests are not welcome. We take our sewing machine up there, and arrange our cutting table, and give orders that no one is to come in uninvited. When our day's work is done, we leave things as they are, instead of breaking our backs trying to get everything in apple pie order—as is necessary when one sews in the living-room. Husband made two braces—guess that's what they are called. They look something like saw horses. One is placed under either end of a table-top of pine, three feet wide and six feet long. This forms our cutting table. When not in use, it is taken apart and stored in the garret. It is so high that I can stand and cut out my garments without bending my back. A wide-mouthed waste-basket under it catches the clippings. There is another basket near the sewing machine, and still another beside the chair where I sit to baste the garment, or to finish it. In that way, we keep our room tidy without effort. We made these baskets ourselves, so they cost almost nothing.

By subscribing to a good, up-to-date fashion magazine, one can get a pretty good idea, in February, as to what the summer styles will be, and all but the very best gowns for summer may be made then. I know, because I have followed this plan for ten years, and my children are always considered well dressed. I make all my own house gowns then too; but usually have a dressmaker for a week, later on, to make my best gown.

We do not buy work shirts for the men any more. They have found that they are more comfortable to wear knitted underwear and a shirt waist. I bought one of the waists worn by mail carriers in hot weather, and learned from that how to make them. During February, we make all that will be needed for another year. I use denim, galatea, duck and shrunk muslin for them—according to which material may be on sale when I am purchasing, for I like to get such things at a bargain.

It is hard to sew in hot weather, and almost impossible to find time for it in the spring when house cleaning, gardening, etc., claim attention, or in the fall when canning, pickling and preserving take all one's spare moments; but in February there is nothing to interfere—or need not be if you plan carefully. MRS. R. C. HILL.

Neighborhood Entertainments.

If you live in a neighborhood where there is scarcely any entertaining, and nothing going on, don't complain; for you are just as much to blame as anyone else! Instead of complaining, get busy. Plan something. Start the ball rolling. Many times, the only reason why a neighborhoood is dull and stupid is because there is no one to take the initiative. If you are not inventive enough to plan a campaign, invite two or three neighbors who are, and talk it over with them while you serve a dainty lunch. Make your luncheon such a success that they will all agree with you that something should be done to make the neighborhood a pleasanter place in which to live; and don't let them get away until a scheme for future entertainment has been definitely evolved.

Our neighborhood was the dullest place imaginable until this year; now, we have any amount of fun; the kind of fun in which the whole family can become interested. We found that the best plan, for us, was to divide the neighborhood into several groups, and make each group responsible for an entertainment. Such odd entertainments as we have had! The members of each group kept their particular plans to themselves, and so we have had a succession of surprises.

There was "Dickens Carnival" that deserved a big hall, and a much larger audience than our neighborhood could furnish. It would take a page of this paper to describe it. It was a surprise to many to discover how much Dickens is read in our neighborhood, and how quickly Barkis, Pickwick, Little Nell, Peggotty, Micawber, and a host of his quaint characters were recognized. Cards were furnished those who did not belong to the group getting up this entertainment, upon which each guest wrote the name of the entertainers, and the characters they represented. The one who succeeded in making the largest number of correct guesses was given a prize and later a correct list was published in the local paper.

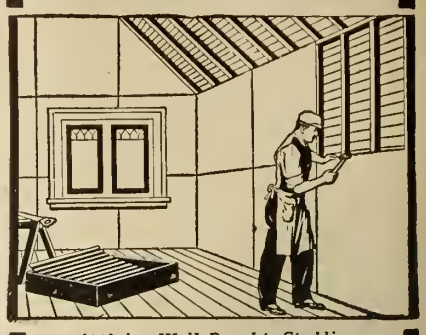
This entertainment gave an idea to the next group to entertain, and they had Madame Jarley's Wax Works. But instead of confining themselves to the characters usually found in this entertainment, they had something much more original. Roosevelt, Taft, LaFollette, and many others conspicuous in politics as well as in current events were present. They moved among the guests until after the refreshments were served, then they were obliged to climb a chair, one at a time, and here they were wound up and made to speak a few words. Of course what they said was usually what the papers had reported them as having said in some speech.

Another entertainment consisted of showing pictures by the old masters. These, of course, were tableaux representing famous pictures, or illustrating well known poems, a verse or two being read aloud.

I haven't space, or time, to tell much of these various entertainments, but it will doubtless interest you to know that they have been so popular that the elders in the neigborhood have decided that we must have an assembly hall, with a kitchen and dining room in the basement, a big hall on second floor for a sort of reception room, and another on the second floor for dancing. None of our homes are large enough to accommodate all the neighbors, and now it appears that all the neighbors in our once dull country place are anxious to take part in the festivities.

We are going to have a Victrola and a radiopticon for our hall, so as to have music and pictures when we want them. We have fashioned a board for an enlarged and improved "bean bag game" that has already proven a great source of merriment. It is four feet square, and has ten holes, each fitted with a pocket, and each bearing a number. The front of the board rests on the floor; the back is raised six inches on strong iron legs. The guests are divided into companies. There the six bean bags made of leather, no two being of exactly the same size or weight. A player stands ten feet from the board and throws the six bags, one after another, always trying to get them lodged in the pockets bearing the highest numbers; then add the numbers corresponding to the holes in the board through which the bags were thrown. The result is placed opposite his name, on a blackboard provided for the purpose. The players take turns throwing the bags, and each has three opportunities to throw them, before a game is ended. Two com-

Finest Walls Half Cost of Plaster



Applying Wall Board to Studding

Send for Free Book and Big Free Sample

BISHOPRIC WALL BOARD comes to you in sheets 4x4 feet, all ready to nail on studs. Any man can put it on.

Build right through the winter and save a month's time. Ready at once for paper, paint or burlap. Makes handsomest walls, ceilings and partitions in residences or cottages. Cell attic or cellar. Proof against cold, wind, dampness, rats or other vermin.

BISHOPRIC WALL BOARD

Better Than Plaster and Costs Less

Bishopric Wall Board is asphalt mastic (toughened asphalt in which kiln-dried dressed lath are imbedded). Surfaced with strong, well-sized cardboard. Lath is the only thing that makes wall board rigid and keeps it flat. Bishopric Wall Board is the only wall board made with lath.

Bishopric Sheathing Saves 75 Per Cent of the cost of application and is far better. No knot holes, no cracks. Made of the same materials as Bishopric Wall Board. Ideal binder for cement and stucco.

Makes rat-proof, bug-proof, moisture-proof bins, storehouses, barns, stables, dairy buildings.

Price of Bishopric Wall Board.—Each crate contains 16 sheets, 4x4 feet, making a total of 256 square feet. Price, $6.40 per crate of 256 square feet, or $2.50 per square of 100 square feet, f.o.b. Cincinnati.

Price of Bishopric Sheathing.—Each crate contains 16 sheets, 4x4 feet, making a total of 256 square feet. Price, $6.00 per crate of 256 square feet, or $2.35 per square of 100 square feet, f. o. b. Cincinnati.

Write Us—We Will Tell You How Much You Need

Tell us the length, width and height of the rooms you want to use it in and we will figure cost. Address

The Mastic Wall Board and Roofing Mfg. Co.

280 Este Avenue, Cincinnati, Ohio (8)

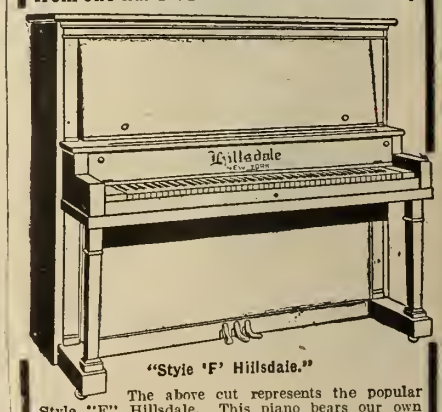
In writing advertisers please mention The Fruit-Grower.

Townsend & Wyatt Dry Goods Company

Our Piano Department has been a success from the day we opened. We find that the public likes to save money when they make a purchase for as large an amount as this.

On account of the small expense in operating this department in connection with the rest of our store we can save you from fifty to one hundred and fifty dollars on a piano.

New Pianos are Fully Guaranteed from one-hundred and nineteen dollars up



"Style 'F' Hillsdale."

The above cut represents the popular Style "F" Hillsdale. This piano bears our own name on the metal plate. It is manufactured especially for us.

The reputation that we have established after being in business forty-four years, is behind these instruments. The sweet round, full-toned Hillsdale will satisfy you, no matter how critical you are. Its plain, square lines will please the eye.

It is useless to pay $375 for a piano no better, when you can have this piano **Direct from the Factory to You**, no matter where you live, freight prepaid, new scarf and stool furnished, for $225 cash, or payments, if desired, 6 per cent on deferred payments. **Write Us Today.**

Townsend & Wyatt D. G. Co.

ST. JOSEPH, MISSOURI

AGENTS—$45.00 A WEEK

Don't Throw It Away

MENDETS

PATENT PITCH

Mend all leaks instantly in graniteware, hot water bags, tin, copper, cooking utensils, etc. No heat, solder, cement or rivet. Any one can use them. Fit any surface. Smooth. Sample box, 10c. Complete box, asstd. sizes, 25c, postpaid. Wonderful opportunity for live agents. Write today. **Collette Mfg. Co., Box 203 Amsterdam, N.Y.**

Allcock's PLASTERS

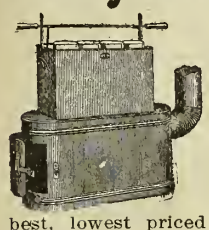
No matter whether the Pain is in the Back or Side, Chest or Limbs, you can always rely on an Allcock's Plaster. It is a standard remedy, sold by druggists in every part of the civilized world.

Constipation, Biliousness, Indigestion, etc.

Brandreth's Pills

Entirely Vegetable.

Raney Home Canner



Practical, successful, profitable for housekeepers, farmers, fruit and truck growers. Goods put up with Raney Canners have a quality and flavor secured in no other way. Complete outfits from $5.00 up, with daily capacities from 200 to 10,000 cans. The best, lowest priced and longest lasting canner on the market. Write for illustrated catalog and detailed information. We have a full line of canner's supplies at right prices.

THE RANEY CANNER CO.
Dept. 10 Chattanooga, Tenn.

Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per cent.

A Free Trial Package Is Mailed to Every-One Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manuf'r, 18 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write to-day.

Apply Western Methods to Eastern Orchards

Subscribe today for the ONLY magazine devoted EXCLUSIVELY to Fruit Growing and Irrigation in the West.

Learn the Secret of Success and how Western Fruit Growers realize as much per box as Eastern Growers get per barrel on their Apples.

Western Specialists write each month exclusively for us. If YOU contemplate coming West, you should certainly subscribe for the only periodical that sets forth the advantages and inducements of EACH important fruit district without favoritism.

Printed on heavy book paper and profusely illustrated.

Send 25c Today, Coin or Stamps, for Three Months' Trial

The Intermountain Fruit Journal

Subscription Dept., Denver, Colo.

FOR MENDING HARNESS

It takes a wax thread, feeds from spool and does the work of any harness maker machine. It is indispensable for farmers. Agents wanted. Sent prepaid for $1.25. Send at once for catalog.

shoes, tents, awnings, pulley belts, carpets, saddles, suit cases, buggy tops, dash boards, or any heavy material. STEWART'S AUTOMATO AWL is the only perfect Sewing Awl.

STEWART-SKINNER CO.
83 Hermon Street, Worcester, Mass.

Makes repairs neat, and quick. Mends harness, shoes, canvas. Myers' Sewing Awl makes Lock Stitch. $1 prepaid. Big money for agents.

The Awl For All

C. A. MYERS CO., 6344 Lexington Ave., Chicago, Ill.

panies, of six players each, take part in a game, representatives from first one team and then the other alternating. That keeps up the interest, for the onlookers are interested in watching the record on the blackboard. The winning team plays the next company of six, and keeps playing the different companies until beaten. You have no idea, until you see it played, how exciting such a simple game can be. Everyone in our neighborhood takes part, and often the children prove to be better players than the adults. FRANCES GUMAER.

Something Different.

It is sometimes hard to get girls interesting in cooking. And unless they are really interested they will waste so much good material that one can hardly afford to continue the instruction. I have a daughter who declared that she would rather take in washing than try to cook. When she did try, her food was so unpalatable that we couldn't praise it, as we praised her sister's food, and then she would cry, and beg me never to ask her to cook again. Then her aunt sent her a chafing dish, for a Christmas gift, and the girls invited her to join a club they were getting up. That served to supply the lacking interest, and from that time on my daughter spent her spare time poring over a little pamphlet devoted to chafing dish recipes.

It was a long time before she cared to learn how to make good bread, or cook any of the simpler things. Her father waxed very sarcastic because she could make fine angel food and cheese straws before she could bake bread or boil potatoes; but I wouldn't let him say too much, nor did I make any comments, myself, except to praise whatever she did that was really worth praising.

Today, this daughter is a much finer cook than her sister, who gave me so much less trouble at the start. Her sister does plain cooking very well; but this daughter gives a dainter touch, a more appetizing taste to even the everyday dishes, than any other member of our family. It is really "something different" when Alice cooks it. Now, her father calls her "the food artist," and she is seriously considering a plan, suggested by her aunt, of hanging out her shingle as a "Kitchen Captain." She thinks she will soon be able to earn five dollars a day, in the larger cities, going out to superintend dinner parties.

So, mothers, don't despair because your girls refuse to cook except when they happen to want to make "something different." Just let them make what appeals to them, and encourage them to enlarge their repertoire in their own way. They'll get down to the common dishes after awhile and very likely they'll do them all the better because they have already learned, on the fussy dishes, the value of being exact in their measurements and quick, careful, and dainty in their touch. MUMSEY.

Breakfast Dishes.

Experience has taught me that "made" dishes are best when served for breakfast. The left-overs are more easily disposed of, then, than at any other meal. That leaves the chops, bacon, waffles, etc., that are usually served for breakfast to be put on for luncheon. Since I have adopted this plan, we really seem to be setting a better table than we did before—yet it does not cost us any more.

One of our favorite breakfast dishes is economy pie. I work cold mashed potatoes quite smooth with a little warm milk; season it to taste with pepper and salt, then spread a layer in the bottom of a pudding dish. Upon this I scatter a layer of chopped cold meat—using more than one kind if necessary—season it with bits of butter, sage, tabasco sauce, tomatoes, catsup, or whatever seems to be called for. Of course, I do not use all these things at once, but just such as I happen to have, or as suits the taste of the family. Another layer of potatoes, then another of meat is added. Then potatoes are spread over the top, smoothed down, and bread crumbs scattered over it. The pie must be baked until brown. I usually prepare it, ready for the oven, before going to bed, then it will bake while I am getting the table set and the coffee made. This, with pickles, toasted bread, and coffee makes a very satisfactory breakfast.

If there is cold rice, I make it into fritters. For two cupfuls of boiled rice, I take three eggs, four tablespoonfuls of milk, two of flour, and a little salt and baking powder. I mix the salt and baking powder into the flour. Beat the eggs, add the milk, then pour it over the rice. Add the flour after having stirred in the rice. Beat all well together, dip the batter up in spoonfuls, and drop it into hot lard to fry like doughnuts.

Great care must be used if any kind of "made" dish is to be as palatable as it should be; but when well done, it may be even more tasty than when first prepared.

When frying anything, it should be borne in mind that the lard must be smoking hot. You have heard the story of the famous Irish chef who said, "Lard is never boiling until it stops boiling." And he was right; as long as it bubbles there is water in it, and nothing can be properly fried when the lard contains water. When the lard stops boiling, and a blue flame comes from it, drop in your cakes. Let them become brown on both sides, then serve them hot with maple syrup.

If you have some bits of cold chicken, rub them to a paste, add the yolks of four eggs, for six people, a gill of cream, and just a suspicion of onion. Season with pepper and salt, mix well, and place in a basin that can be closely covered. Set this in a saucepan of boiling water, and let it steam for an hour; then set it away until morning. In the morning, let it steam again, just long enough to become hot clear through; then serve with tomato sauce. My family eat this with graham bread, and declare that they have had a fine breakfast.

Mash two pounds of stewed veal into a very fine paste. Mix a pound of grated bread crumbs with sufficient gravy or stock to make a batter. Add a quarter of a pound of butter, six well beaten eggs, one teaspoonful of chopped celery, half a teaspoonful of mace, two teaspoonfuls of parsley, and a grated nutmeg. Mix thoroughly, let it come to a boil, then stir in the veal and remove from the fire. In the morning, make this paste into small pear-shaped balls, and fry them in hot lard like doughnuts. I like to serve them with hot muffins and coffee.

Cut cold roast beef into thin slices, place them in a buttered tin on a bed of bread crumbs with parsley scattered over it; season to taste and add bits of butter. Pour in a little soup stock, or good gravy. You can use hot water, if you have nothing better, but in that case, you should add more butter. There must be enough liquid to just show between the slices of beef. Now sprinkle bread crumbs over all, and let the dish remain in a hot oven for twenty minutes.

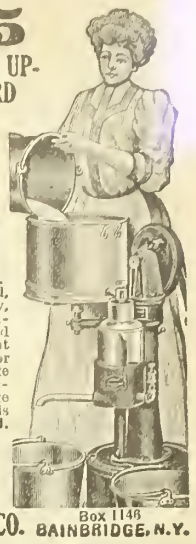
I always keep the essence of beef that comes in small porcelain jars to use when I must use hot water instead of stock or gravy. I make a gravy of it that adds greatly to the "made" dish. MRS. CONOVER.

Berry Crop Will Be Reduced

As a result of extreme drouth, which killed thousands of plants, the coming strawberry crop of south Mississippi will be much reduced. Several growers are getting plants from other states, but expect no returns from them the coming season.

Renew your subscription today.

15.95 AND UPWARD AMERICAN SEPARATOR



THIS OFFER IS NO CATCH. It is a solid proposition to send, on trial, fully guaranteed, a new, well made, easy running separator for $15.95. Skims hot or cold milk; making heavy or light cream. Designed especially for small dairies, hotels and private families. Different from this picture, which illustrates our large capacity machines. The bowl is a sanitary marvel, easily cleaned. Gears thoroughly protected. Western orders filled from Western points. Whether your dairy is large or small, write us and obtain our handsome free catalog. Address:

AMERICAN SEPARATOR CO. Box 1146 BAINBRIDGE, N.Y.

STANDARD AMERICAN THE WORLD OVER

WELL AND PROSPECTING DRILLING MACHINERY

43 years' successful operation. Used in nearly all parts of the world. We make a complete line of Drilling Machines and tools for every condition of **earth** and **rock** drilling and **mineral** prospecting. Complete catalogue No. 120 showing over 40 styles of machines **free.**

THE AMERICAN WELL WORKS

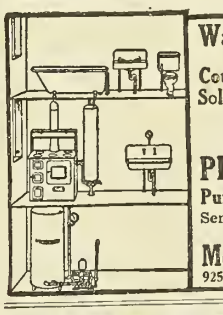
General Office and Works: **Aurora, Ill.**

Chicago Office: First National Bank Building.
Joplin, Mo., office: 115 West Fifth St.
Kansas City, Mo., office: 301 Scarritt Bldg.

SAMSON WINDMILLS

Different than all others and better because of the double gears, big oil boxes, drop-forged wrist pin, removable bearings, center lift. No side strain, no noise. Big, heavy and powerful. 4, 6, 8, 10, 12, 14, 16, 18, 20 ft. diameters. Send for catalog. Also feed mills, pump jacks and gasoline engines.

STOVER MANUFACTURING CO.
260 Samson Ave., Freeport, Ill.



Water Works $37.80 FOR Country Homes

Sold Direct at Manufacturer's Prices

Also Full Line of

PLUMBING GOODS

Pumps, Windmills, Etc.

Send for Our Valuable Book. IT IS FREE.

Mo. W. & S. Supply Co.
925 S. 6th St., St. Joseph, Mo.

FREE WATCH RING & CHAIN

We positively give to BOYS and GIRLS a BEAUTIFUL American-Made stem-wind, stem-set watch with handsomely designed case, proper size. GUARANTEED 5 YRS. Also dainty ring, set with three sparkling stones, for selling 20 jewelry articles at 10c each. Order jewelry today. When sold send $2 and we will send watch, ring and chain. We Guarantee Satisfaction.

Dale Walch Co., Dept. 48 Chicago

PATENT YOUR IDEAS

$8,500 offered for one invention. Book "How to Obtain a Patent" and "What to Invent" sent free. Send rough sketch for free report as to patentability. Patents advertised for sale at our expense in Manufacturers, Journals.

Patent Obtained or Fee Returned

CHANDLEE & CHANDLEE, Patent Att'ys

Established 16 Years

1046 F. Street, Washington, D. C.

PATENTS That Protect and Pay. Send Sketch or Model for FREE SEARCH. Books, Advice, Searches and Big List of Inventions Wanted **FREE!**

Watson E. Coleman, Patent Lawyer, Washington, D.C.

ROSES of NEW CASTLE

is the greatest book on the culture of Roses and other plants ever published. 86 pages, exquisitely illustrated in natural colors. Gives lifetime experience. Tells everything about rose culture. Describes wonderful Hoosier Roses, hardy plants, bulbs, seeds, etc., world's best for home planting. It's FREE. Write today.

HELLER BROS. CO., Box 227 New Castle, Ind.

STILLWELL CALIFORNIA BUNGALOW BOOKS

PACIFIC COAST HOMES combine individuality of design with artistic and economical construction. Western Homes are of absorbing interest in exteriors and plans. Genuine Bungalows especially appeal to everyone, and are a popular and profitable form of investment. Our two books contain plans, descriptions and cost estimates of low-cost houses, suitable for any climate.

"Representative California Homes."—Price, 50 cts. A book of 50 Bungalows, Cottages and two-story residences of 5 to 10 rooms, costing $1500 to $6000.

"West Coast Bungalows."—Price, 50 cents. A book of 50 one-story, very artistic, inexpensive Bungalows of 4 to 6 rooms, costing $500 to $2,000.

BUILDER'S SUPPLEMENT NO. 1, Price 10 cents. Free with Orders for two books. Remittances of coin or money orders preferred. Sample pages free.

E. W. STILLWELL & CO., Archts., 2170 Henne Bldg., 122 Third St., LOS ANGELES, CALIFORNIA

INEXPENSIVE MODERN HOME

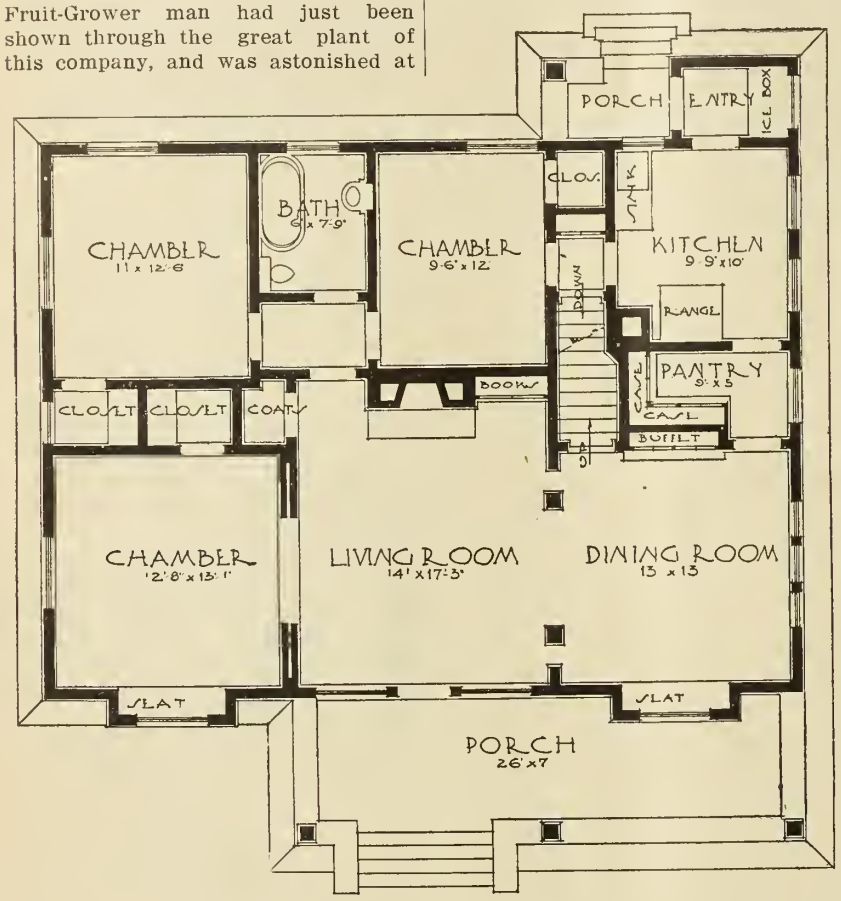
"While people are comp ining of the increased cost of everyth'ng one has to buy, an exception should be made in the case of building material, for it is probable that one can build a good home now for less money than the same building would have cost at any time within the past ten years."

The foregoing statement was made to a Fruit-Grower representative the other day by Mr. H. V. Scott, vice-president of the Gordon-Van Tine Company, Davenport, Iowa, a great mail-order concern, which supplies all kinds of building material at wholesale prices, direct to consumer. The Fruit-Grower man had just been shown through the great plant of this company, and was astonished at the low prices made on materials of highest quality. Then it was that Mr. Scott remarked that the present is a favorable time for building operations.

"The local lumberman may not have lowered his prices," continued this gentleman, "but the fact remains that materials of practically every kind that enter into the making of a building are lower than for a long, long time, and now is an exceptionally favorable season for building."

Mr. Scott's reference to the local lumberman was well taken, for it is a well-known fact that in some cities and towns the lumbermen are organized to maintain prices—the so-called trust among the big sawmill men is not more effective than the agreement among local lumbermen in certain communities. In fact, this agreement to maintain prices, which practically restricts building operations, was responsible for the firm of Gordon-Van Tine Company selling its goods direct. This firm formerly sold lumber at wholesale to regular lumber dealers, and the firm did a big business, too. The agreement to maintain prices, however, among local dealers restricted trade; the local dealer may take more profit on a smaller volume of business, but the wholesalers suffered great loss of trade. As a result of this condition, Gordon-Van Tine Company resolved to cut out the middleman and sell direct to the consumer, and since this plan was adopted the volume of business has grown wonderfully.

The grade of materials, millwork, etc., furnished by Gordon-Van Tine Company is of the highest quality. In fact, it is much better stock than is carried in many smaller lumber yards.



FLOOR PLAN OF BUNGALOW.

The firm is in every way responsible and stands back of all its goods. No second-hand lumber is handled; everything is new from the mill, and the product of several mills is taken by this concern. Doors are made in great quantities in mills where nothing but doors are made; thus the quality of the product is highest and cost the lowest. The same is true of windows and other kinds of millwork.

As the business of Gordon-Van Tine Company grew it became apparent that if best results were secured by the firm's customers, some plan must be arranged to furnish designs for artistic homes. Accordingly, the catalogue of the firm now contains many plans of buildings of various costs, which are furnished free to consumers. One who wants a set of these plans pays $2.50 for blue prints, specifications, etc., and this charge is refunded when a bill of goods is purchased. A remarkable feature of these house plans is that, contrary to usual custom, the actual cost of the buildings seldom runs over the estimate. This is because Gordon-Van Tine Company know how much houses built according to the various plans have cost in various localities, and they are secure in their estimates. The bungalow shown in the accompanying illustration was built from plans furnished by Gordon-Van Tine Company, and all the material that enters into the structure came from that company. This plan has been used many times, the cost being around $2,850, exclusive of heating and plumbing. Dr. D. Whitehurst, Penial, Texas, built from this plan, and reports, after the house was completed, that by buying his lumber and millwork from Gordon-Van Tine Company he saved about $800.

While we were at the plant of Gordon-Van Tine Company we were shown dozens of letters from satisfied customers, and after reading them over and looking at photographs of their homes, we were ready to give the firm credit for doing a great work. For certainly any institution which makes it possible for any man to have a home of his own deserves great credit. And, from our investigation, there can be no doubt of the great saving made by those who buy by mail from Gordon-Van Tine Company, Davenport, Iowa. This firm issues a great catalogue which is free for the asking, and everyone contemplating building or remodeling any structure should send for it today. It's free to those who say they want the catalogue advertised in The Fruit-Grower.

A GORDON-VAN TINE BUNGALOW. COST ABOUT $2,900.

Come to Florida and Farm all the Year

Farm with less labor, more comfort and ten times larger returns than you have ever farmed before. You can do it on Terrell Lands in South Florida. Soil best in the state. Climate ideal. Cost of living low. No farm more than 3½ miles from a railroad. Eight growing towns on or adjoining this tract. School, church and social advantages of the best.

Ten Acres Will Make You Independent

You can work them every month in the year, raising two to four crops which will return you $150 to $1,000 per crop per acre. Insure for the future by planting a pecan nut grove. Returns per acre exceed those of almost any other crop. No land in Florida will grow better citrus fruits. This is the heart of the "truck garden of the nation." All stockholders of this Company have bought lands from it; many of them will develop their properties and live at Rerdell.

Every purchaser has six months in which to investigate the land, either personally or through an authorized representative, and if not entirely satisfied, money paid will be refunded.

We Have a New Book For You

It is beautifully illustrated. It tells all about Terrell Lands, how you can secure a farm or a winter home there on easy terms. It also gives full details of a safe, sound investment plan for you if you do not care to move to Florida. Send for a copy today; it is free.

TERRELL LAND AND DEVELOPMENT COMPANY
Box 115 RERDELL, (Via Terrell) FLORIDA

LOGAN BERRY PLANTS
100 for $5.00 or 1,000 for $25.00
THE CASH NURSERY, SEBASTOPOL, CALIF.

AGENTS Make big money selling "GARDENER'S FRIEND HANDY CULTIVATOR." One man made $18.50 in one day. Write, today, for agents' special liberal terms.
ULRICH CO., DEPT. F., ROCK FALLS, ILLINOIS

Can you add $850 to your surplus, yearly?

The *average net* surplus of *every* family in the St. Francis Valley of Southeast Mo., is $850 *yearly*—the *highest* average in America.

If *you* had alluvial soil *fifty feet deep* to work with, it wouldn't take *you* long to get rich. Mr. Bennson, an Iowa man, planted his first crop in St. Francis Valley between thickly strewn stumps, yet made 90 bushels of corn per acre. Mr. Mahoney, an Indiana man, last year sold $2700 worth of clover seed from 150 acres of land which, the same year, had produce a *big wheat crop.* Along the

Cotton Belt Route in Southeast Missouri

you will find hundreds of farmers who have made enough from their *first* year's crops to pay for both land and *clearing.* Crops never suffer from drouth, for a turn of the plow brings up ample moisture. Pastures are green *every* month; seven months are without frost. The biggest, best-paying markets are *close by.* Lumber is so cheap that homes are built for $100 a room. Roads, schools, churches and society are of the best. *Right now* you can buy some of the *richest land* in the world, in this valley, at $20 to $30 uncleared, up to $50, cleared; land that will *pay for itself* the *first* year. The Government reports this the *fastest growing section* of America—if you delay going, you will not only miss out on the *best* tracts but pay *more* for what you get

On the 1st and 3rd Tuesday of each month there are very low round trip excursions to this section via Cotton Belt Route, allowing 25 days for trip and *free stop overs.* Take advantage of the *next* excursion and *investigate* this fertile valley.

Get our new free book

—the most complete farmer's guide to this country ever published, written by a practical farm man, who personally went over every mile of this section and got the farmers' own statements about their success there. Scores of farm and stock pictures. Write today for your free copy.

E. W. La BEAUME,
General Passenger Agent
1421 Pierce Bldg., St. Louis

COTTON BELT ROUTE

Money-Making Fruit Farms
at bargain prices to settle estates quickly throughout Michigan, New York, Delaware, North Carolina and Florida. "Tell us what you want and we will tell you where it is." We pay buyer's car fare. E. A. Strout Farm Agency, Largest in the World, 47 West 34th St., New York.

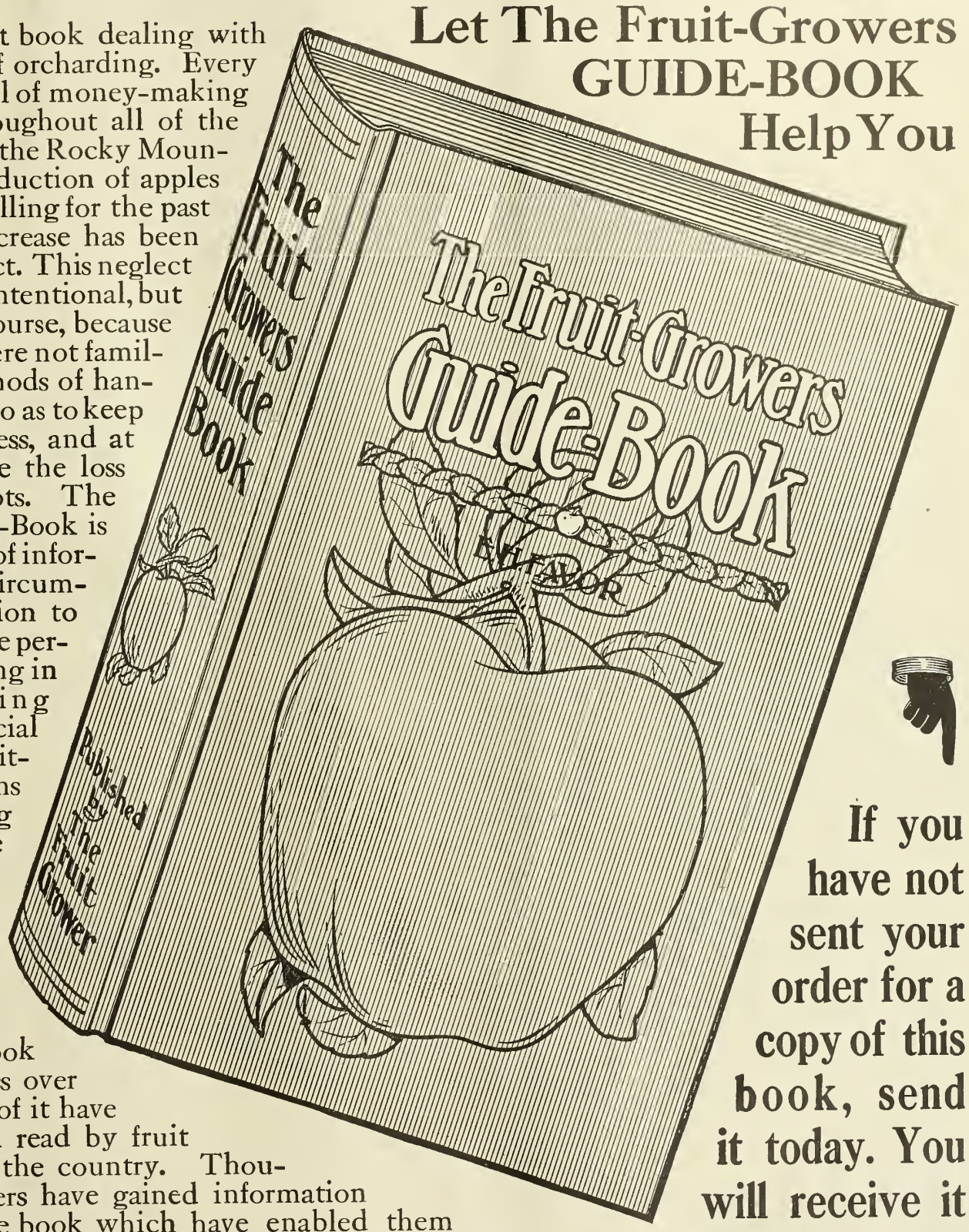
BEAUTIFULLY ILLUSTRATED
BOOKLET ABOUT DELAWARE
the State of red apples. luscious peaches, strawberries and of ideal homes. Address State Board of Agriculture, Dover, Dela.

Map of Michigan Free!
A Postal Card will get you one.
J. E. MERRITT, - MANISTEE, MICHIGAN

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. Hanson & Son, Hart, Mich.

Is Your Orchard Making Money?

Let The Fruit-Growers GUIDE-BOOK Help You



THIS is the newest book dealing with the principles of orcharding. Every chapter in it is brimful of money-making ideas for you. Throughout all of the United States east of the Rocky Mountains, the annual production of apples has been gradually falling for the past ten years, and the decrease has been due entirely to neglect. This neglect has not always been intentional, but came as a matter of course, because the orchard owners were not familiar with the best methods of handling their orchards, so as to keep up their productiveness, and at the same time reduce the loss from insects and rots. The Fruit-Growers Guide-Book is designed as a source of information for just such circumstances, and in addition to serve as a guide for the person who is just starting in the business of raising fruit on a commercial scale. It is clearly written, and the directions given in it for handling orchard trees can be applied equally as well to the home orchard with only a half dozen or so of fruit trees.

During the nine months that this book has been off the press over ten thousand copies of it have been purchased and read by fruit growers throughout the country. Thousands of these readers have gained information from the pages of the book which have enabled them to increase the profit they are getting from their trees. Their dollar has come back to them ten fold and more.

If you have not sent your order for a copy of this book, send it today. You will receive it by return mail

YOU ARE SURE OF A PROFIT

from your orchard if you follow the instructions laid down in this indispensable book. It tells you the best kinds of soils and the most desirable locations to select for an orchard. It tells you how to fight the insects and diseases that attack your orchard trees and fruit crops. It describes and illustrates the best methods of packing your fruit and how to turn the waste of your orchard into money. It is full of practical information of value to the man who has a few trees in his dooryard, and is of great service to the commercial horticulturist operating on a large scale.

With the rapid improvements in methods of cultivating and handling orchards, packing and marketing fruits and combatting the many pests of the orchard, it is impossible for any book to be up-to-date, without frequent revision. The Fruit-Growers Guide-Book is new. The information it contains is brought right down to the best and latest discoveries of the present time. It is brief, yet comprehensive, and is written in such a manner that it is easily understood.

It contains almost 300 pages, beautifully illustrated; neatly arranged and indexed, and is bound in a handsome gold-brown cloth cover. The price is only $1 per copy. The profit you make on one barrel of apples will pay for a copy of this invaluable book.

Clip out the coupon, pin a Dollar Bill to it and mail today. A copy of the book will be sent to you by return mail.

THE FRUIT-GROWER, St. Joseph, Missouri

COUPON

THE FRUIT-GROWER,
St. Joseph, Mo.:

Attached hereto is $1.00, for which you are to send me, prepaid, a cloth-bound copy of The Fruit-Growers Guide-Book.

Name.....

Address.....

Some Experiences With Poultry.

During the past twenty-two years we have had more or less experience with all kinds of poultry—chickens, turkeys, geese, ducks and guineas, and have been successful with all but guineas. We have always kept poultry as a "side line," but in spite of this fact it has, for a number of years, been a constant source of profit. In other words the poultry has been a success almost from the start, while some other things have failed.

At the present time we are keeping Brown Leghorn chickens and Toulouse geese, but we have neither stock nor eggs for sale, neither at present not at any future time.

The chickens are kept chiefly for winter eggs. As Leghorns are non-sitters, some Orpington hens are kept to hatch both chicks and goslings in season. We used a large size incubator two years but had poor success, owing to the fact that we had no suitable place to operate it. The chicks are not hatched very early in spring, because we have learned by experience that Leghorns do better when hatched after the weather begins to get mild Of course, weather conditions vary in different sections of the country, but here in Ohio, we find that Leghorns will thrive better when hatched any time from May 15th to July 1st. And how they do grow! They are great foragers even while small, and there is nothing so good for chicks as plenty of insects and exercise.

We lost hundreds of chicks by overfeeding, before we learned that too much grain food caused bowel trouble. The commercial "chick feed" caused a great deal of trouble. We probably fed too much of it or perhaps the chicks needed more sharp grit to grind it At any rate they did not thrive upon it and kept dying off until we thought of cooking the feed. This was tried with excellent results. Since that time we have fed very little whole grain to chicks. They have no bowel trouble or disease to speak of. We feed cornbread and oatmeal, sometimes. Whole wheat and cracked corn boiled together, give good results. They seem to relish it more than when it is fed raw, and it is more economical. It is difficult sometimes to induce chicks to eat enough grit to grind whole or raw grain. They require some grit even when the feed is boiled, however, but not so much. Never mix sharp grit with mashes for poultry. When this is done they are sometimes compelled to consume more grit than they require. It is a good plan to sprinkle a little coarse sand over feed given to very small chicks if the feed is dry. Then they will eat only what they require. Coarser and sharper grit is furnished as the chicks grow. There are some brands of chick grit that actually injure the chicks. Oyster shell that is ground or crushed into small sharp scales will injure the chicks if much of it is eaten. Their tender digestive organs are easily lacerated.

Our chicks are kept in chick houses. Coops are not used at all. The houses are 10x15 feet and are large enough to hold from 50 to 75 Leghorn chicks without crowding, until they are several weeks old. Then they are separated into smaller flocks. Houses here have to be built so as to insure safety from rats and weasels. Fine mesh chicken netting and wire screen are used on doors and windows. During wet weather we keep young chicks in the houses in the daytime as well as at night.

At this time (December) our June hatched Brown Leghorn pullets are laying fine and have been for several weeks. They are kept indoors these days. The snow is several inches deep on the ground and it wouldn't do the laying hens or pullets any good to wander around through it. They are kept in comfortable houses, about 35 head in each apartment, and they get the best of care.

We adopted a new plan of feeding two years ago and have never regretted the change. Our hens are kept upon a whole grain ration. No cooked mashes or ground grain is fed and the hens have been laying better than ever before. Whole corn is fed every morning. About 5 ears for each 35 head. Not a very large feed. That is exactly the idea. When a hen is full she is apt to be lazy. The corn is always heated in the oven (just a little) in very cold weather. After the corn is eaten they are given a drink of warm buttermilk or skim milk. After a while the milk, what is left of it, is removed and replaced by clean water with the chill removed. At noon they are fed the kitchen refuse, table scraps, parings, etc., or some cabbage. At 2 o'clock they are given sheaf wheat. Two large sheaves to a flock.

ANNA WADE GALLIGHER.

Ohio.

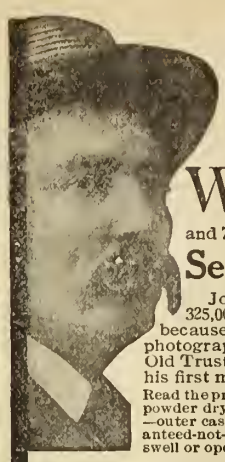
Make the Hens Scratch.

This is the time of the year when our fowls need special care, otherwise the egg supply will be short. As they have no chance to find their natural food when confined in winter, we must supply them with green stuff and meat. I always try to give my fowls summer conditions as near as possible, because it is a paying proposition to give them a little extra care when they pay for it all.

Success with poultry all depends on whether we have egg producers or drones. It is a well known fact that all hens are not good layers. There are a lot which might be called "thirty-egg" hens, and which should be sent to market early in the season, as they do not pay for their keep. The best way is to cull the flock closely in the fall, as that will dispose of the doubtful ones, then select the rest for size and color, as well as egg production. The best selections are those which are off-spring of individuals which have proven themselves to be egg-producers. The only way in which this can be found out is by the use of trap nests. The selections must be rigid for size, color and shape, for if one advertises breeding stock, he must have quality with which to fill the orders.

Chickens which are maintained as egg producers can only do their best when they are properly housed. The house need not be a costly structure, but just large enough to accommodate the flock. That will be about three square feet of floor space for each fowl. The low house is always the warmest, but of course it needs to be high enough to save one from head bumps. It is also absolutely necessary for the house to be storm proof, and free from dampness, as each of these are fatal to profitable egg production.

The south is the best direction for the house to face, as that will admit plenty



Johnson Says:

Let 325,000 Satisfied Customers Be Your Guide in Choosing an Incubator

WHY experiment with an unknown machine when 325,000 satisfied customers swear by the Old Trusty? Why take chances—why pay two prices? Johnson sends your money back if the Old Trusty doesn't make good every time with less trouble—less work—less watching—and 75 per cent better hatches. Anyway—

Send for Johnson's Big FREE BOOK

Johnson wrote his book for 1912 after his experience in making and selling 325,000 Old Trustles. It's not like any other Incubator catalog—couldn't be—because no one else has the same experience. In it he shows over 300 actual photographs taken from the thousands sent him by enthusiastic users of the Old Trusty everywhere and gives you his own experiences from the day he made his first machine for his own use until he shipped the last of the 325,000.

Read the proof in the description: Triple-cased throughout—inner case of high grade ¾-inch powder dry California redwood—middle case of highest grade asbestos—fireproof insulation—outer case, legs and all, of galvanized metal handsome mottled finish—equipped with guaranteed-not-to-leak cold-rolled copper tank and heater—indestructible—can't burn—can't warp, swell or open at the seams—crack or decay—guaranteed ten years—twenty if you say so—shipped complete with best thermometer, egg tester trays, and instructions — ready to run with sure results by anybody—no trouble, worry, or experimenting. Safety lamp and regulator fitted on at side — top clear for use as table in egg testing.

300 Photographs Johnson Says To Send Your Name

Over 325,000 in Use

Get This Big Free Book

Built Like a Watch

Self-Regulated to a Quarter of a Degree

30 to 90 Days' FREE TRIAL

Old Trusty

I Will Quote You Price of Less Than $10

Freight Paid East of Rockies

Why not send your name today! Mail a postal and it will only take a day or so for you to get Johnson's Big Book and be on the safe side. Address

M. M. JOHNSON, The Incubator Man

With a Score of 325,000 Satisfied Customers **Clay Center, Nebraska**

$6 50 Egg Size

I'll Help You Pay for Your Incubator —Sell Me Ten Minutes of Your Time for Big Slice of My Low Factory Price on Improved New JEWEL INCUBATOR

NOW you can start raising chickens feeling confident of success. I actually help you buy your outfit.

For ten minutes of your time at home, I'll split the price on my famous, record-hatching **Improved New Jewel Incubator** —furnish you absolutely free a **$25.00 Correspondence Course** so you can go right ahead making **biggest profits** right from the start—give you a big book telling all about Incubators and Brooders—sixty days' FREE trial. I could not possibly make such a remarkable offer if my **Improved New Jewel Hatcher** were not such an extraordinary machine. It does all and more than I claim. This means that every **Jewel** sold brings me other orders and I am going more than half way to get one in every community.

Give Me Just Ten Minutes of Your Time at Home

and you get this high grade, world-beater Improved Jewel at a price lower than you would pay for a cheap, ordinary machine. Think of the magnificent saving. It's an **Incubator bargain** surpassing anything ever before attempted. Hurry a postal or the coupon to me quick.

M. W. SAVAGE, President
M. W. Savage Factories, Dept. 134 Minneapolis, Minn.

Dept. 134 Minneapolis, Minn.

M. W. Savage Factories, Inc:—Please send full particulars about your most attractive offer on Jewel Poultry Machines.

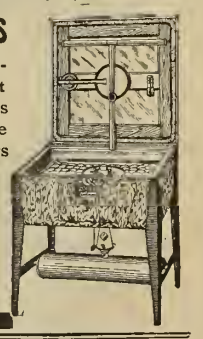
Name .....

Address .....

.....

RAYO INCUBATOR

MANY SUPERIOR POINTS



The Rayo is truly the Incubator without a fault. It is built upon principles that are scientifically correct, and which result—always—in successful hatches. One filling of tank and only one gallon of oil for entire hatch—eggs always in sight—turn eggs without removing nest-shaped tray—center heat—these are a few of the points which spell Rayo supremacy. We pay the freight and give a 70-day trial. Iron-clad guarantee. Write for the book today.

Write today for our Big Poultry Book "EGGS TO MONEY" Free for the Asking

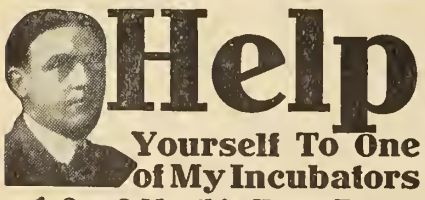
RAYO INCUBATOR CO.
FIG STREET **Blair, Neb.**

LICE PROOF NESTS

GALVANIZED STEEL KNUDSON PATENT

Get Rid of Lice and Mites by equipping your Poultry Houses with these wonderful sanitary nests. They cannot get out of order and will last a lifetime. You really **pay for Knudson Nests** whether you buy them or not; if you don't buy them the lice and mites will take the price of them out of your profits in a short time. Regular price $3.90 per set of 6 nests. **Special Price,** $3.50 per set, 3 sets (18 nests) for $10.00. Send for free catalog of Galvanized Steel Brood Coops with Runs, Chickfeeders, etc. Address

KNUDSON MANUFACTURING COMPANY, Box 304 St. Joseph, Mo.



Help Yourself To One of My Incubators

1, 2 or 3 Month's Home Test

I HAVE the proof that it will hatch more eggs than any machine made, sold at anywhere near the price. I want to prove this to you in your own home. Will you be one of the fortunate tryers of my

WORLD'S CHAMPION Belle City Incubators

140-Egg Size Only $7.55

I guarantee my machine to outhatch all comers, give you a long trial prove all claims. Why pay more? Why not save money and get in the championship class?

The Belle City has double walls, dead air space all over, double door, copper tank, hot-water heat, self-regulator, "Tycos" thermometer, egg tester, safety lamp, nursery, high legs. My

Freight Paid East of Rockies

Belle City 140-CHICK Brooder

is the only double-wall brooder made, hot water heat, platform, and metal lamp. Price **$4.85.**

When shipped together I make a special price of $11.50 for both Incubator and Brooder saving you 90c on the Complete Outfit, freight prepaid. East of Rockies.

Better write today for big Portfolio "Hatching Facts" and get latest information how to make money out of poultry at small expense, or if in a hurry you can order from this advertisement. I guarantee everything as represented or refund money. Address me personally, JIM ROHAN, Pres.

$4.85
140-Chick Brooder

Belle City Incubator Company
Box 104 Racine, Wis.

Mandy Lee

The Incubator of Certainty

Operated by rule. The novice gets the same excellent results as the experienced operator. The only incubator with the open-front poultry house plan of ventilation. Only one applying the vital principle of low moisture with high temperature and high moisture when heat runs low. All regulated automatically.

Send for latest book, describing the new features—plain, practical, helpful.

Write us for mating list and prices on S. C. White Leghorn stock and eggs from the Mandy Lee farm.

GEO. H. LEE CO., 1122 Harney St., Omaha, Neb.

50 Best Paying Varieties Pure-Bred Chickens, Ducks, Geese, Turkeys, Eggs, Dogs and Incubators. **All at Low Prices.** Send 4c. for my Book which gives reliable information worth many dollars to you

W. A. WEBER, Box 938 Mankato, Minn.

Learn the Exact Truth About Poultry Profits

Says FARM JOURNAL

Hens are all right, remember; but many have been misled by claims of fabulous profits. A few hens cannot make you a millionaire. On the other hand, don't get the wrong notion that "there is nothing in chickens"—that poultry profits are only for experts.

If you want a few hens to supply your own breakfast eggs, it is easy; to sell eggs and broilers at a fair profit is easy, too; to build a big poultry or egg business, paying thousands of dollars profit per year, is harder, but quite possible; it has been done many times, and will be done many times more. But remember, it takes BRAINS and EXPERIENCE. You must supply the brains, and we will, if you wish, supply the experience of one of the three greatest poultrymen in the world. You can learn the truth—the exact truth—about poultry, if you will read this advertisement—and act.

J. M. Foster, the "Egg King," will show you how to begin—what is the best breed for eggs—how and what to feed—how to force hens to lay heavily—how to secure early molt and quick recovery—how to insure winter eggs when prices are high—how to get more pullets than cockerels, and many other facts—all money makers. All this gold mine of costly experience and knowledge will be found in

A Rancocas Unit at Work

"The Million Egg Farm"

of which FARM JOURNAL has sold many thousand copies. It is by Joel M. Foster, of the Rancocas Poultry Farm. We call him the "Egg King," because he marketed last year the astounding total of 1,121,478 eggs.

Feeding a Rancocas Unit

Foster Ought to Know

"In writing The Million Egg Farm," says Mr. Foster, "I had one thought continually in mind—TO HELP THE BEGINNER. I myself was a beginner only five years ago, so I know what beginners need to know—and I put it all in the book.

It is for the man who has a dozen hens on a back lot even more than the man who numbers his birds by the thousands."

The book is profusely illustrated with 43 engravings from photographs taken at the farm, together with four pages of detailed plans of buildings from which big or little houses can be constructed.

The Daily Egg Harvest

Clearing $17 Per Day

Let us show you what it has meant to Robert Liddle, a clerk of Scranton, Pa., to follow the directions in this booklet.

In May, 1910, he bought 2,300 day-old chicks. He spent just one week studying the methods now given in this book, absolutely his only preparation for the business. What has been the result? He raised 95 per cent. of his chicks. Of these, 1,350 proved to be pullets. On November 28, 1910, less than seven months later, he was getting upwards of 425 eggs daily, and selling them for 58 cents per dozen wholesale, nearly 5 cents apiece. His feed cost averaged $4.00 per day, leaving over $17.00 a day profit, and this before all his birds had begun laying.

Every Statement a Proved Fact

Before accepting the manuscript from Mr. Foster, FARM JOURNAL made expert and exhaustive examination into the methods used at the farm, and sent Lybrand, Ross Bros. & Montgomery, Public Accountants, Land Title Building, Philadelphia, to verify all claims as to production, sales and profits. They found that for the year ending July 31, 1910, the profits were $19,484.83. Write them and prove it.

This guarantees Mr. Foster's own work and profits. We promise you that his book is the safest, sanest, and the most intelligently written poultry book ever issued. The figures are facts, not a bookkeeper's fancy or some happy dream, and Mr. Foster offers to give $1,000 if they are disproved.

It is our object to supply at all times RELIABLE information on all poultry topics; we believe this masterly book should be read by every hen owner, and we have therefore arranged to supply it in the following extraordinary offer:

One Copy "Million Egg Farm," postpaid
FARM JOURNAL, four full years } **Only $1.00**

FARM JOURNAL has for 34 years paid special attention to poultry, and this department is known the country over for its authority and value. It is the standard home and farm paper, with more than 750,000 paid subscribers. It is for the poultryman, gardener, fruit grower, trucker, farmer, villager, suburbanite, the women folks, the boys and girls. It is cut to fit YOU, too. Cheerful, amusing, intensely practical, absolutely clean. And when the time is up it will stop.

Cut out and mail this coupon with a dollar today. If you order promptly, we will send, absolutely free, "Poor Richard Revived"—our splendid new Almanac for 1912.

FARM JOURNAL, 135 N. Clifton St., Philadelphia, Pa.

FARM JOURNAL,
135 N. Clifton St., Philadelphia, Pa.

Gentlemen:—Enclosed is my dollar, for which send me your book "THE MILLION EGG FARM"—and put my name and address on your paid-in-advance subscription list to get FARM JOURNAL for four years.

Name_____

Post Office_____

R. F. D._____ State_____

of sunlight, and it is better to have the windows covered with muslin so as to admit fresh air. This can be placed on a frame that can be closed on cold nights and stormy days.

Let the roosting quarters be at the farthest end, away from any opening. Always provide wide roosts for the birds, as it means good breast bones. A dropping board should be placed about 10 inches below the roosts, and the platform be made of matched lumber.

The feeding plan which I have followed is the dry feeding system, which is considered one of the latest and best methods for saving labor and getting results. There are a hundred and one ways of feeding poultry, so there is no one method that is best. But the dry feeding system gives satisfaction. I use three parts each of corn and wheat bran, two parts of ground oats and one part of meat scrap and bone. This is then placed in large hoppers, made so that the fowls cannot soil their food by getting in it with their feet. The formula I have described can also be used as a wet mash, which should be fed twice a week in the morning. To this wet mash add a spoonful of pepper or ginger, also a pinch of salt. This will act as a tonic. There is no need of charcoal if this is used in the feed.

The floor needs to be kept well covered with straw, and every evening after the fowls have gone to roost, sprinkle some wheat in the litter for them to start to work on in the early morning. But before they go to roost give them a feed of whole corn. This will keep them warm over night. Never feed whole corn, except at evening.

Hens and pullets do not thrive on the same kind of feed. This is for the reason that hens need a food that will enable them to produce eggs, while pullets want a food that will enable them to build up muscle and bone in their own bodies as well as for the production of eggs. Of course, we have very little use for old hens except for breeding purposes. All of the hens which went through the moult late will not lay before spring. The pullets which are not fully matured are fed a good growing feed composed of 4 parts corn, 4 parts ground oats, 1 part bone meal and meat scrap. Keep this before them at all times. The cockerels are kept away from the pullets in winter, as there is no use for them before the breeding season is here, or when eggs are needed for hatching. Then when the hatching season opens the cockerels will be in prime condition.

In mating the flock, we mate the cockerels with hens and the pullets with cocks, as by so doing there is better assurance of strong chicks. Hens make better breeders than pullets, as their eggs are more fertile than those of the pullets; but the pullets make the best layers when hatched early in the spring. Then if given special care they will begin laying in October. One taken care of is better than four which are neglected.

Minnesota. A. S. AMUNDSON.

Which Breed Is the Best?

The above question is often asked of every experienced poultryman and as often must be answered, "there is no best breed," if it is answered correctly. My answer to this question is: The one you like best is the best for you. Nature has made large provision for the varied tastes and fancies of the large number of lovers of the feathered tribe, so that anyone desiring to start in the poultry-raising business has only to decide upon the breed or variety that best suits his fancy and select his breeding stock and launch in the business; then, by careful selection each year and properly mating his breeding stock he can, in a few years, make almost anything out of his chosen variety that he desires, within the bounds of reason. He can bring up the size into large, beefy birds, or, he can make them finer boned and breed them more for eggs. He can, after he has some experience and gets some knowledge of mating for certain results, bring his chosen variety to conform to his individual ideal shape and style of carriage, also color and shade of plumage of his strain. Indeed there is scarcely any kind of live stock that will respond so readily to the desires of the owner in the way of establishing certain traits as will poultry, after the breeder knows how to select and mate his birds.

There is no reason why this cannot be done on the farm as well as in the city. If the farmer has no taste for such work there is no reason why his wife or some son or daughter may not take it up. The field of poultry raising offers large inducement today for the exercise of science and skill in its culture and none is so well situated to do this as the farmer or some member of his family.

It is now high time to select your breeders for the coming season. You will want them mated by Feb. 1st at farthest and Jan. 15th would be better for you should begin setting the hens or starting the incubator by the middle of February, so as to get as many chicks in March as possible. March and April chicks are the best winter layers that can be produced and for breeders for the next season they are nearly as good as old stock.

In selecting your breeding stock the male should have the first consideration. If you have good ones of your own, not too closely related to the females you are to use, select the best formed and with the most proud and gallant bearing, also regarding the color and general markings peculiar to the particular variety you have chosen. A male that is somewhat of a combative disposition is apt to be a good one, other things being equal. Then for his mates try to select those whose shapes will offset any defects which the male may have in this particular. For instance, if the male is rather low built and is somewhat blocky for his breed, do not select low, blocky females to mate with him, but rather those that are well up on legs and somewhat long in body. As to color, it is not wise to mate a very light female with a very dark male thinking you will get medium shaded progeny. You are likely to get more mottled ones than any other shade. Especially is this so with the Rhode Island Reds.

The selections should be made with a view to eggs as well as to style and color of the birds. In selecting for eggs, a good rule is to watch the yearling hens and select the early moulters for they are almost invariably good layers. Most of those that moult early began laying quite young and kept at it all summer and, of course are valuable from the standpoint of egg production, to use as breeders for another year. As to pullets for breeders, the fall is the time to make such selections. Usually the pullet that begins to lay quite young is one that will keep at it for a long period, providing conditions are at all favorable. By noting these points you can make very good selections which will certainly improve the laying qualities of your flock.

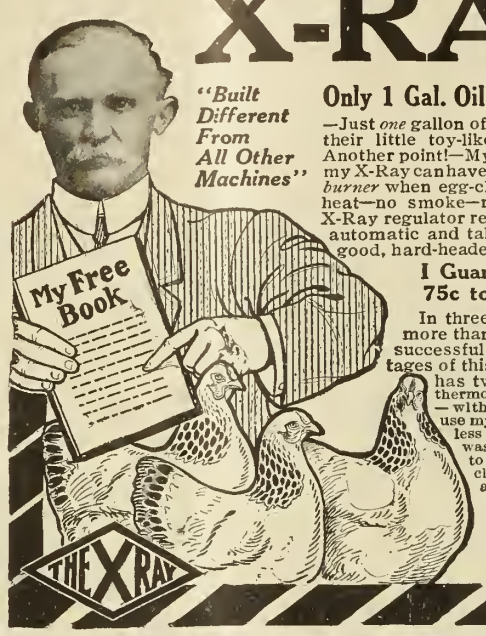
When you have your breeders selected, plan to yard them instead of allowing them to run at large. In so doing you will get more eggs and there will be less liability of their becoming mixed with others, thus destroying your matings.

It is not necessary to have large yards and expensive houses for your breeding pens. A goods box, 3 feet each way will do very nicely for a house for a male and five females to

Won't You Send for My Big Free Book About the X-RAY?

DON'T YOU want to know the *inside facts* about my much improved, *guaranteed* incubator? I believe you do! My new 1912 Free Book is complete on every point. In my X-Ray, the lamp is placed *underneath*, square in the center—where it *should* be—and *not* on the side. I get an absolutely *even* temperature this way, the egg-chamber is always at the proper heat—and there's no *cold side*, no corner too hot and another *not hot enough!* But that is not all. I use a big four-to-eight-quart oil tank on my X-Ray (couldn't be done if my lamp wasn't placed *underneath*) and once this is filled *it doesn't need to be touched* again until *after* the hatch. Other machines require filling of lamp *every* day—that means *at least* twenty-one times. The

X-RAY Incubator



"Built Different From All Other Machines"

Only 1 Gal. Oil to Hatch—Requires Only One Filling of Lamp

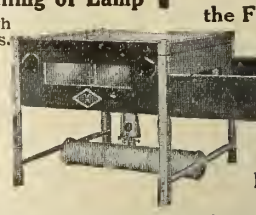
—Just *one* gallon of oil—that's all. The *old style* machines with their little toy-like lamps *on the side* require 3 to 5 gallons. Another point!—My patented automatic trip—something only my X-Ray can have, for it's Patented—cuts down the flame *at the burner* when egg-chamber gets too hot—so there's no excess heat—no smoke—no smell—absolutely *no waste of oil!* My X-Ray regulator requires no attention whatever—it is purely automatic and takes care of itself. These are some of the good, hard-headed reasons why—

I Guarantee to Save You From 75c to $1.25 on Every Hatch!

In three year's hatching I can save you more than what you paid me for my ever-successful X-Ray machine. The advantages of this machine are wonderful:—X-Ray has two double-glass panels on lid so thermometer can be plainly seen at any time—without chilling or disturbing eggs. To use my X-Ray means less handling of eggs, less oil expense, less heat generated, no waste, no fumes, no dirty, mussy lamp to be filled *every* day. Women, especially, prefer the X-Ray—it is so nice and clean, so sanitary.

Yours truly,

J. H. KATE, President,
X-RAY INCUBATOR CO.,
Wayne, Nebr.



I Pay the Freight

Get My Free Book

The X-Ray Is Guaranteed to Please You—To Make Money For You!

I can save you money and I will! And I guarantee that you'll be pleased with my X-Ray and the results it gives. If you want the one Incubator built on the *right principle*—get my X-Ray, and enjoy the success that thousands of others are enjoying.

Write Today For This FREE Book No. 70

X-Ray Incubator Co., Wayne, Nebr. Date.....
Gentlemen: Please send me your new Free Book No. 70 on X-Ray Incubators and Brooders, and oblige,
Name.....
Town.....
State.....
R.F.D.....

Poultry EXPERTS SAY

This is the Most Practical Helpful Book on Poultry Raising Published

We sent a copy to every prominent poultryman, requesting each to write us their candid opinion about it. Here is just one. We have dozens more equally as strong:

Storrs (Conn.) Agri. Exp. Station

Gentlemen:—I have just examined your new catalogue. This is one of the best things of the kind I have seen. You are to be congratulated upon the high character of this publication. L. A. CLINTON, Director.

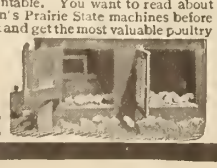
It is a book that either the beginner or the experienced poultryman will find of vital interest, because it contains the actual experience of the most successful poultrymen.

YOU WANT THIS BOOK IT'S FREE! Write a Post Card for a Copy TODAY

As one illustration of its valuable contents there's a letter from a man who, with the help of his son, cleared $12,000 last year raising poultry. Four years ago he had no experience. It tells how to make money on the ordinary farm with poultry—how to make money raising ducks—how to select layers—what breeds are best for different purposes—how to feed, breed, rear and hatch profitably and economically—how to overcome disease and a hundred and one other important things. It describes the 1912 Sand Tray

PRAIRIE STATE Incubators & Brooders

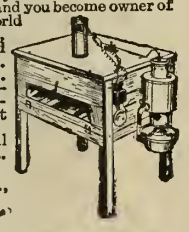
which are revelations in artificial incubation machinery. Not built on theories, but on experiences that have proven successful and profitable. You want to read about and investigate this season's Prairie State machines before you buy. Send for this book and get the most valuable poultry raising information that has been published. The edition is going fast. Send at once to insure getting a copy promptly.



Prairie State Incubator Co.
14 Main St. Homer City, Pa.

Just Send Me One Dollar

And I will ship to any open R. R. Station in U. S., east of Rockies, this Right Incubator. Anyone can say they have best incubator in the world, but I will furnish the evidence to you. After you examine my Incubator—if you are satisfied, pay $7.85 and freight and you become owner of this Best Incubator in the World—as it has Hot Water System, Copper Tank, Double Walled Packed with Mineral Wool, Triple Top—Double Bottom, Double Glass Door, Self-Regulating and my Original Electric Alarm Bell. The greatest feature in any Incubator.



Write for catalog of my full line of Incubators and Brooders.

H. M. WEBER, Pres't.
RIGHT INCUBATOR CO.,
Box B 29 Quincy, Ill.

Your Name Will Get $2 Eggs
For 50 Cents Per Sitting

The White and Brown Leghorns are the greatest layers in the world. I keep 2000 of the celebrated Chamberlain laying strains on my Experimental Farms, and to increase the sale of my Perfect Chick Feed, I will send to any one who will send me their name so I can send them my Perfect Chick Feed Catalogue. 2 sittings of Single Comb Brown or White Leghorn Eggs for $1 for the 2 sittings. Not less than 2 sittings sold. White or Barred Plymouth Rock or Rhode Island Reds or Silver or White Wyandotte or Rose Comb Brown Leghorn or Single Comb Black Minorca Eggs, $1 per sitting. W. Orpington Eggs, $2 per sitting. 13 to a sitting. Large white Pekin Duck Eggs, $1 for 10 Eggs. Indian Runner Duck Eggs, $2 for 10 Eggs. This is a rare chance to get a start of extra fine stock. Send Post Office order on St. Louis and have your orders booked early. Get our prices on Old Trusty Incubators, freight prepaid.

W. F. CHAMBERLAIN, (*The Perfect Chick Feed Man*)
KIRKWOOD, St. Louis County, MO.

I'll Start You and Keep You Going *Right* in the POULTRY Business

My World-famous high-quality incubators and brooders, and my Free Poultry Lessons make success **easy** and **sure** for you!

SUCCESSFUL INCUBATORS AND BROODERS

are made right and with the free advice and lessons I give my customers no one can possibly fail to make biggest hatches of strongest chicks. Write me. A postal brings all facts, book, prices and proposition. "*Proper Care and Feeding of Chicks, Ducks and Turkeys*—sent for 10c J. S. Gilcrest, Pres.

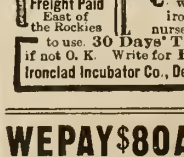
Des Moines Incubator Co.
184 Second St., Des Moines, Iowa

130 EGG Mankato Incubator $7.25

260 EGG ONLY $10.

This high-grade hatcher, direct from factory to user, no middle profits, under binding guarantee and long-term trial. Has three thicknesses of walls, covered with asbestos and heavy galvanized iron, metal legs, copper hot-water tank, self-regulator, high nursery, safety lamp, thermometer. Safest made. So simple a child can operate. None better at any price. 17 years' experience. Big catalog free. Brooders, $2.50 up.

Mankato Incubator Company, Box 907, Mankato, Minn.

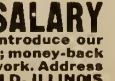


Freight Paid East of the Rockies

140 EGG INCUBATOR and 140 CHICK BROODER

Both For $10

The incubator is California Redwood, covered with asbestos and galvanized iron; has triple walls, copper tank; nursery; egg tester, thermometer, ready to use. 30 Days' Trial—money back if not O. K. Write for Free Catalog today.



Ironclad Incubator Co., Dept. 12 Racine, Wis.

WE PAY $80 A MONTH SALARY

and furnish rig and all expenses to introduce our guaranteed stock and poultry powders; money-back guarantee; outfit free; new plan; steady work. Address BIGLER CO., X 823, SPRINGFIELD, ILLINOIS

Contiguous No Break
Advance
18 YRS. THE SAME
Before You Buy
get our direct from factory prices on the old, reliable Advance Fence—18 years a leader. You save all the middlemen's profits—
Save Money—12 Cents a Rod
and up. Hog, sheep, poultry, fruit and farm fence. Endless stay wires--no cut ends--no rust. Sold on money back guarantee. Write for "freight prepaid to you" catalog today. (5)
NO KINKS
NO KNOTS
Advance Fence Co.
Box 532 Elgin, Ill.

MAKE HENS LAY
Lots of eggs if you feed green bone fresh cut. Its egg-producing value is four times that of grain. Eggs more fertile, chicks more vigorous, broilers earlier, fowls heavier, profits larger.
MANN'S LATEST MODEL Bone Cutter
makes bone cutting simple, easy and rapid. Cuts all bone with adhearing meat and gristle. Never clogs. 10 Days' Free Trial. No money in advance. Don't buy a cutter without trying it. Send for free Book.
F. W. MANN CO.
Box 108, Milford, Mass.

PEARL GRIT
Not an Expense, a Money Maker
Repays its cost over and over in bigger, healthier, better laying fowls. Grit that is more than grit. Aids digestion, gives appetite, supplies egg shell, bone and feather material. Send for booklet.
OHIO MARBLE COMPANY
757 S. Cleveland Street, Piqua, Ohio

YOUR HENS
YOUR FARM
YOUR MONEY
The Story of 25 Years
with Poultry and Farmers and Fanciers will help many Farmers get more eggs—better prices; make more and save more money; tells things few folks know on making money with hens. Find out about America's Largest Line of Incubators and Brooders, and get six poultry chapters written by Robert Essex himself—it's all in our Free Catalog—Write today. Address
Robert Essex Incubator Co., 71 Henry St., Buffalo, N. Y.

GREIDER'S FINE POULTRY
Book and calendar for 1912 contains 200 pages, 72 varieties pure bred, 62 colored plates. Many other illustrations, descriptions. Incubators and brooders. Low prices on all stock eggs. How to raise and make hens lay. Get my plans. They all say it's great—this book—only 15 cents.
B. H. GREIDER, Box 41, Rheems, Pa.

LARGE EGGS
Your hens will lay them if you feed them The Humphrey Way—fresh bone prepared in a Humphrey Always-Open-Hopper Bone Cutter. Write for offer and copy of our profitable book "Making the Golden Egg."
HUMPHREY, UNION ST. FACTORY, JOLIET, ILL.

PFILE'S 65 Varieties
LAND and Water Fowls. Farm-raised stock, with eggs in season. Send 2c for my valuable illustrated descriptive Poultry Book for 1912. Write
Henry Pfile, Box 617 Freeport, Ill.

1912 CATALOG FREE
Illustrates and gives prices of 45 varieties land and water fowls and eggs. This book should be in the hands of every person interested in poultry for profit. Address
S. A. HUMMEL, Box 18, FREEPORT, ILL.

CHOICE STANDARD BRED
Rouen, Pekin and Indian Runner Ducks; Buff, White, Golden, Silver, Partridge and Columbian Wyandottes. Barred, Buff and Barred Rocks, $2.50 each, $6.00 trios, $9.50 pens. Toulouse Geese, $4.00 each. Satisfaction guaranteed. Geo. Hartman, Freeport, Ill.

HENS LAY AND PAY
BY THE PHILO SYSTEM
FREE Booklet by E. W. Philo, entitled "A Little Poultry and a Living." Or New 96-page book, "Making Poultry Pay," 10c. Both books and the new enlarged edition of the Philo System text-book, $1.00, or all three books with our monthly magazine, Poultry Review, one year, $1.50.
E. R. PHILO, 86 North Ave., Elmira, N. Y.

Latest Book "Profitable Poultry," finest published, 120 pages of practical facts, 160 beautiful half tones. Tells how to breed, hatch, feed and market to make big money. Tells about big poultry farm. 45 pure-bred varieties. Beautiful, hardy and money makers. We start you right. Lowest prices on fowls, eggs, incubators, etc., sent for 5c. Berry's Poultry Farm, Box 106, Clarinda, Iowa.

roost in by putting two 1x2 inch strips through the middle for roosts. Then another box for a scratching shed with two nests, will fit them out for housekeeping very nicely. If you have ten females, simply use a third box, covering all with felt roofing to keep them dry and comfortable. The fronts should have some protection against storms and very severe weather. A good plan is to have a front made from the boards taken from the side of the box by nailing cleats across them and have them hinged at the top so they can be let down in severe cold weather, nearly but not entirely closed, so they can have plenty of fresh air. These sides or fronts can be raised to any angle, or in sunshiny weather can be thrown clear back over the top of the box coop.

The yard, too, can be a small one. Hens will lay equally as well in small quarters as in more roomy ones and do quite as well in every way. Try it.

Illinois. HORTON B. GREEN.

A Broken Down Farmer's Success With Indian Runner Ducks.

There is an old adage to the effect that "Some are born great, some achieve greatness and some have greatness thrust upon them." This seems to apply in a way to my modest success in the poultry business. I was not born a poultryman, nor did I aspire to be one, but was sort of kicked into the business by the necessity of doing something for a living after my health failed so that I was unable to follow general farming.

While the poultry business has its drawbacks, disappointments and losses, the same as any other vocation, the same amount of time, energy and good judgment applied to it will bring more dollars than general farming, with the added advantage that the work can be successfully accomplished by those who are not able to follow the plow but at the same time can do a lot of lighter work.

I am now keeping hens and Indian Runner ducks. Everyone knows what a hen is but there are lots of people who never heard of Indian Runner ducks, so I am going to tell you a few things about them. The breed is supposed to have originated in India, but it first attracted attention in England where it was introduced about 50 years ago. A prominent English breeder describes them as follows: "In the duck, the correct color is a warm sunny fawn, a rather light brown, the colored body feathers are laced or penciled. The body feathers of the drake are of a light fawn color, minutely peppered with darker lines, the head and rump are dark bronze often showing a greenish lustre." The genuine English Runner invariably lays a white egg. As there are many strains of mixed breeding advertised and sold, one needs to be careful to get the true English type and should ask the breeder to guarantee that his ducks lay all white eggs. (He need not fear to do so if he has the "real thing.") When foreign blood is introduced the ducks lay part green or tinted eggs, which are not salable at good prices.

I well remember one dealer who would not believe that there was such a thing as white duck eggs, but when he saw a basket of the large white eggs which our ducks lay, he was more than willing to take them at a price several cents above that paid for hens' eggs.

As meat producers these ducks are unsurpassed. Our markets are fast learning the difference between the Indian Runner duck and the old fashioned variety. I have heard people say, "Oh! I don't like duck, the meat tastes muddy—I'd as soon eat a frog," but these same people after tasting the meat of an Indian Runner, could not say enough in its praise.

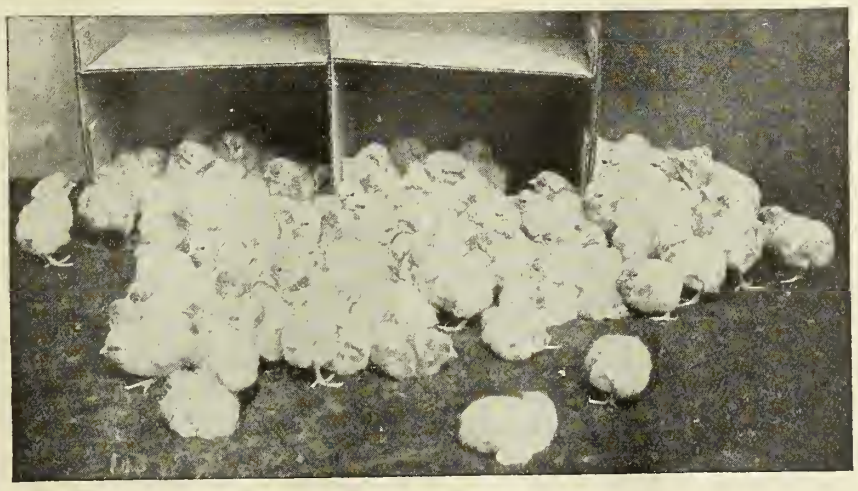
Some big advantages that these ducks have are as follows: They can be raised anywhere that chickens can be raised, as they do not require a pond—all they need is plenty of clean drinking water. They are healthy and vigorous and not troubled by mites, lice or roup. If necessary to keep them yarded, they may be confined by a two foot fence. They will lay as many eggs as any breed of hens there is, and are profitable as layers for a longer period than hens. They are easily grown, easily handled and easily cared for.

To illustrate how easy—I raised sixteen out of seventeen hatched at my first venture. I started in with twenty-one eggs, purchased from a reliable breeder. I now have a nice flock which brings me in a good amount each year. I could give the exact figure but that would sound like bragging. However, I will give one or two examples. I sold ducks and chickens for broilers last summer. They brought same price per pound, but the ducks averaged nearly 50 cents while the chickens were about 30 cents. Just sold some surplus drakes at 12½ cents while a neighbor sold Plymouth Rock cockerels at 8 cents. The drakes averaged 60 cents each, the cockerels a little under 50 cents each. As I have already mentioned, the eggs bring more per dozen than hens' eggs for they are so much larger. For cooking purposes 3 duck eggs will go as far as five hens' eggs.

If your days of hard work are over but you still wish to do something for pleasure or profit, or if you are so fortunate as to retain your health and want a good paying side line, just try a flock of Runners and I will guarantee you will be pleased with the result.

E. E. HOPKINS.

Pennsylvania.



One hundred White Wyandotte Chicks and the case in which they are shipped. Orchard Knob Poultry Farm, Mt. Victory, Ohio.

The Bourbon Red Turkey.

There is no branch of the poultry business that goes so well with fruit growing, as does turkey raising. Nor is there one that pays so handsome a profit. Turkeys on the farm or fruit ranch, represent almost clear profit as far as feed bills, housing, etc., are concerned. That they are not more commonly kept by farmers and fruit growers, we believe, is due to the wild, roving habits of some of the better known breeds, which make success in rearing the young, a very uncertain thing.

The Bourbon Red is comparatively a new breed in the South and West. It originated from the wild yellow turkey of the Alleghany mountains, and was first extensively bred up as a domestic fowl in Bourbon County, Kentucky—hence its name. It retains much of the vigor and hardiness of its natural state, however, and

INCUBATOR Holding 60 Eggs 4.90
ON 30 DAYS' FREE TRIAL
As a special advertisement for our incubator and poultry supply department, we will sell 5,000 widely known LITTLE RED HEN 60-EGG INCUBATORS, at only $4.90. Guaranteed to hatch as large a percent of fertile, strong healthy chicks as any incubator made, regardless of name, make or price. Possesses the most perfect heating system of any incubator. Made with automatic heating regulator. Therefore egg chamber temperature is always uniform. No cold side. Every egg is proper warmth all the time. Consequently greatest hatch will result. Best, latest improved features. Lumber is especially selected. Clear grain kiln dry lumber, guaranteed not to split or warp. Walls are 4 thicknesses—one of inch lumber—then a layer of best insulating, next a layer of asbestos and last a lining of 1-2 inch lumber. High angle steel legs. Glass door. Best safety metal lamp. Hot water heating system. Heavy tubular copper tank. Metal jacketed heater. Full directions with each incubator.

WRITE FOR FREE INCUBATOR CATALOGUE
Send Us $1.00 deposit and we will send you this high grade finely finished latest improved Little Red Hen Sixty Egg Incubator, by freight subject to examination. The balance $3.90 and freight charges you can pay the agent after you have examined the incubator and found it perfectly satisfactory, the greatest Incubator bargain in the world and a much better incubator than you could buy elsewhere for $8 to $10. Then take it home and try a hatching. If you do not find it the best hatcher you ever saw or heard of, or if for any reason whatever you are dissatisfied with the incubator, return it at our expense and we will refund your $4.90 and transportation charges. Order the incubator today, or if you are interested in a larger incubator write for our big, free special incubator catalogue, which illustrates and describes our other high grade incubators holding 60, 120, 175 or 240 eggs at $4.90 to $16.75. Brooders for 60, 120, 175 or 250 chicks at $3.90 to $9.50. Also startling low prices on poultry supplies of all kinds. Write today.
Try it 30 Days at Our Risk
Cream Separators $17.75 AND UP—ALL SIZES
Perpetual guarantee. No money in advance. Sixty days free trial. Closest skimmers in the world. If interested write today for our big, free Cream Separator Catalogue and see for yourself. Address
JOHN M. SMYTH MDSE CO. 150-243 W. Madison St. Chicago

Sam Thompson's Big 1912 Incubator Offer.
Fairest and Squarest Offer Ever Made
Last year I surprised everybody by guaranteeing my incubator to hatch 90% or better. It made other manufacturers take notice. No one believed an incubator could be built to make good on such a guarantee. This year I repeat the offer because the Fairfield made good.

I Want Every Reader to Try My Fairfield 42 Days at My Risk
That's the quickest way to convince you that the Fairfield is the best built, best looking, easiest operating machine in the world. The incubator that makes chicken profits sure. Your money back if it fails to make good.
90% Hatches Guaranteed
Because the Fairfield is made of finest Calif. redwood. Has perfect heating system and roomy nursery.
Write for My Free Catalog
Let me tell you more about this wonderful incubator. Let me send you full particulars about my 90% hatch guarantee and 2 hatch trial offer.
S. C. Thompson, Pres. Nebraska Inc. Co., 50 Main Street, Fairfield, Nebraska.

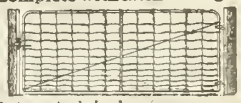
WHY ALLOW
Your Eggs to Get Too Hot
Our machines are so arranged that they will not let the eggs get too hot. Made of the best material, well built and handsomely finished. Extra good batchers. Write for descriptive literature.
Eureka Incubator Co., Blue Springs, Mo.

"Ringlet" Farm
McCue's "Ringlet" Barred Plymouth Rocks
have led the South in the show room for six years. Foremost in size and great egg production. High class stock and eggs. Satisfaction Guaranteed.
Leslie H. McCue, Prop., Box 20, Greenwood, Va.
State Vice-President American Barred Plymouth Rock Club. Life Member American Poultry Ass'n. Send for descriptive catalogue.

All leading varieties Pure Bred Chickens, Ducks, Geese, Turkeys, Pea Fowls, Collie Dogs. Stock, Eggs and Incubators at low prices. Send 4c for large illustrated Poultry and Incubator Book.
J. J. Brenner, Dept. 10, Mankato, Minn.

"Bred-to-Lay" Poultry Pays. 31 Varieties. Stock, Eggs, Baby Chicks, Incubators, Brooders, Poultry Supplies, Ginseng. Big Catalogue, 2c.
HARRY E. RUBLE, Box 88, ALBERT LEA, MINN.

24c A ROD 10 BAR FENCE 48 in.

Best high carbon, rust-resisting, coiled steel wire. Easy to stretch over hills and hollows.
Steel Farm Gate
4x10 Ft. each only $2.95
Complete with latch & hinges
Barbed Wire
80 Rod Spool $1.40

Buy direct from factory at wholesale prices.
FREE Catalog of fences, gates, tools, etc. Write today to box 84 Mason Fence Co., Leesburg, O.

FARM FENCE
11½ cts. a rod for a 26 in. high hog fence; 16 1-2c. a rod for 47 inch high stock fence; 28c a rod for a 50-inch heavy poultry fence. Sold direct to the farmer on 30 Days Free Trial. Special barb wire, 80 rod spool, $1.40. Catalog free.
INTERLOCKING FENCE CO.
BOX 50 MORTON, ILLINOIS.

Strongest FENCE Made

Made of DOUBLE STRENGTH Coiled Spring Wire. Requires fewer posts. Always tight. Is heavily Galvanized with PURE ZINC.

Will outlast all others. Sixty different styles and heights to choose from. A FENCE for every purpose.

WE SELL DIRECT TO THE FARMER AT DEALER'S PRICES.

Be your own merchant and put the Dealer's Profit in your own pocket where it belongs. Prices the lowest ever quoted for a first-class fence.

26-inch Hog Fence, - - 15c. per rod.
47-inch Parm Fence, - - 23-5/10c. per rod.
48-inch Poultry Fence, - 26-9/10c. per rod.

Special Barbed Wire, $1.40 per 80-rod spool.

Biggest values ever offered and sold under our 30-DAYS-FREE-TRIAL-MONEY-BACK GUARANTEE-CONTRACT. Our big Catalogue contains information you ought to know. Write for it today. It's FREE.

COILED SPRING FENCE CO.
Box 125 Winchester, Indiana.

BROWN FENCE

WE PAY THE FREIGHT

Heaviest Fence Made
Heaviest Galvanizing

We make 160 styles. Horse cattle, sheep, hog, and bull proof fences made of No. 9 double galvanized wires and absolutely rust proof

Bargain Prices:
13 cents per Rod Up

Poultry and Rabbit Proof Fences, Lawn Fences and Gates. Send for Catalog and Free sample for test.

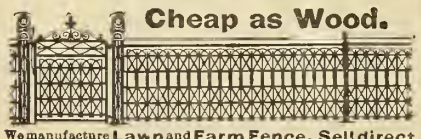
The Brown Fence & Wire Co.
Dept. 14 Cleveland, Ohio

SAMPLE FREE

LOW PRICES for this handsome **FENCE**

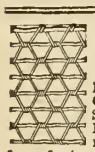
100 other styles. Many cheaper than wood—all better. For Lawns, Churches, Parks, etc. Write for Pattern Book and special offer.
THE WARD FENCE CO., Box 925 DECATUR, IND.

Cheap as Wood.



We manufacture Lawn and Farm Fence. Sell direct shipping to users only, at manufacturers' prices. No agents. Our catalog is Free. Write for it today.
UP-TO-DATE MFG. CO. 976 10th St., Terre Haute, Ind.

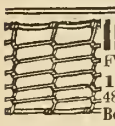
The TIGER FENCE



Made of Open Hearth High Carbon Coiled Spring (double strength) Steel thoroughly galvanized wire. May be returned at our expense if not satisfactory. Shipped direct from factory Field Fence, 49-in., 22¾c; Hog Fence, 27-in., 15½c; Strong Poultry Fence, 48-in., 27c; 60-in., 30c. Special price on Glidden Barb Wire. Catalogue FREE.

The TIGEP FENCE CO., Clarksville, Tenn.

11½ CENTS A ROD

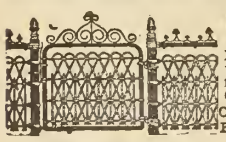


For 18 inch Hog Fence, 14½c for 24-in. 26c for 48-in. Poultry. 78 styles. Bottom prices. Catalog Free.

OTTAWA MFG CO. 608 KING ST. OTTAWA, KANS.

ORNAMENTAL FENCE
25 Designs—All Steel

Handsome, cost less than wood, more durable. Don't buy a fence until you get our Free Catalogue and Special Prices.
We can save you money.
Kokomo Fence Machine Co.,
501 North St., Kokomo, Ind.



LAWN FENCE

Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Churches and Cemeteries.
Coiled Spring Fence Co.
Box 413 Winchester, Ind.

VIRGINIA FARMS Along the C&O Ry

$15.00 PER ACRE AND UP.

Choice lands for alfalfa, grain, grasses, fruits, vegetables, stock and poultry, close to big eastern markets. Fertile 10 acre (adjoining) tracts of land suitable for poultry, truck and fruit, only $375. 20 acres $500. Mild climate, abundant rainfall, several crops a season. Write for booklet with map and low excursion rates. Free.

K. T. CRAWLEY, Ind. Agt., Chesapeake & Ohio Ry., Box 1-S Richmond, Va.

GOVERNMENT FARMS FREE

Our official Journal, "The Homeseeker," contains township, section plats and maps with legal description showing exact location of vacant government land in Minnesota, Montana, Nebraska, Kansas, Oregon, Arkansas, Wyoming, Idaho, Washington, New Mexico, Colorado, California, North and South Dakota; tells how to secure free lands; all about irrigated land; regulations of Canadian Government lands; other valuable information. Sample copy, 10 cents. Address
THE HOMESEEKER, ST. PAUL, MINN.

New York Home Farms

Improved and for sale by us at low prices and on easy terms. For specimen list address or call upon
B. F. McBURNEY & CO., 703 Fisher Bldg., Chicago Illinois, or Room 309, Bastable Block, Syracuse, N. Y.

is by far the most domestic of any of the standard breeds. They seldom offer to hide their nests but lay usually right with the chickens. The mothers do not rove off so far with their broods, and bring them home at night to roost. In size they are a close second to the Mammoth Bronze. I have had several 2-year toms that weighed from 38 to 40 pounds, 2-year hens from 16 to 20 pounds. In color they are most beautiful. The body being a deep, even shade of chestnut red, with snow white wings, and tail parti-colored—partly white and partly red.

As their good qualities, as a breed, become better known, there seems to be no limit to the demand for them. Thinking it may interest you fruit-growing readers I am going to give you the record of 19 one-year-old Bourbon Red hens as shown by my books for 1911.

19 hens averaged 82 eggs each from mid-March to mid-September. They made $20.00 per hen in eggs actually sold. This does not include the value of eggs used at home, to rear a flock of 105 young. Eggs were shipped to 15 different states, Canada and Old Mexico.

Reports of hatches from these eggs shipped 1,000 miles show a 90 per cent hatch.

What breed of poultry can beat it?

MRS. CLYDE MYERS.

Kansas.

Fixing Up the Chicken House.

"Have you fixed up the chicken house?" This question was recently asked at a meeting of farmers, and only one raised his hand in the affirmative. That very night came the severe weather of early November, and one can state with confidence that there were but few fresh eggs to sell in that community.

Outside.—Nail down loose battens, siding, shingles or roofing. Put in whole glass where any is broken. Use building paper, rather than banking, for the latter is often wet from the eaves and causes dampness.

Inside.—If the house is of wood and single-boarded, line it with building-paper of some kind. The roosting-chamber should have two or three thicknesses of paper overhead and on all sides. This is commonly formed by the roof and sides of the building, and the dropping-boards for the floor.

As the dropping-boards are commonly 3 feet 8 inches wide, this width will admit of using three roosts, which may be made of poles or 2x4's, slightly rounded, nailed edgewise or cross-pieces of 2x6 resting on the dropping boards. The length of the three roosts will be determined by the number of fowls, allowing 8 feet for twelve hens.

The roosting-chamber must be made larger or smaller, according to the number of fowls kept, by a movable partition of light framework, covered with cloth or building paper. A curtain of muslin, or burlap, or some other material, is hung in front of the roosts, to prevent drafts and conserve the natural heat of the flock. By the use of the partition and curtain, the comfort of the flock may be maintained in all kinds of weather.

Ample nest-room should be provided, for supplying which cracker boxes may be divided and placed on supports beneath the dropping-boards. Eight nests are sufficient for 25 hens.

A dust-box should be placed in front of a window, and kept filled with sifted hard-coal ashes.

There should be a hopper for dry-mash on the wall; also one for grit, shells and charcoal.

A water table should also be provided, so that the water may not be easily tipped over, or filled with litter when the hens are scratching. The floor, of whatever kind, should be covered with litter to the depth of 6 inches; and this should be renewed as often as it becomes foul or damp. The grain feed should be scattered in the litter, to induce exercise.

Ventilation.—It is conceded that the muslin front gives the best ventilation, and is generally used by poultrymen all over the state. Too much glass will cause the house to be too warm when the sun shines, and too cold at other times. At least one-half of the open surface should be covered with muslin, burlap or some other cloth material. In a house with gable room, a straw loft may furnish sufficient ventilation. Hens will lay well in any house that is dry and comfortable, if fed a well banlanced ration of farm-grown feeds. — N. E. Chapman, Minn. College of Agriculture.

Dirty Eggs On the Farm.

While there are a few egg producers who take the best of care of their product, the average farmer considers the eggs produced on the farm a by-product and makes very little provision for their care, aside from gathering them. A large loss is caused by dirty eggs, the number being enormous, and according to the estimate of Secretary Wilson of the Department of Agriculture this money loss to the farmers in the United States amounting to about $5,000,000 annually.

This loss is very largely brought about by not gathering the eggs often enough. In wet weather more dirty eggs are found than at any other time. This is caused by the fact that the hen's feet are often covered with mud or other filth, and in going on the nest to lay she soils the eggs already in the nest.

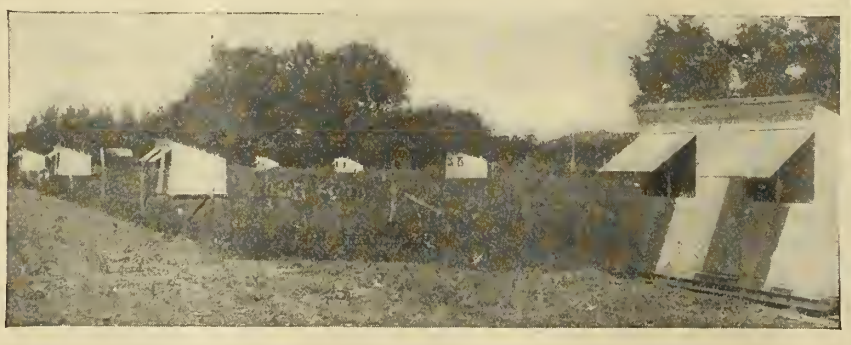
An insufficient number of nests is often the cause of many of the dirty eggs found. Eggs are laid on the ground and around the hay and straw stacks, and becoming stained, are classed as "dirties." Again, when too many eggs are allowed to remain in a nest some are broken and many of the others become smeared with broken yolks. This condition is often brought about by allowing the broody hens to use the same nests with the layers. On a farm where one nest to every four hens is provided and the nests are kept clean and well bedded, it is found that very few dirty eggs are produced.

After gathering the eggs, care should be taken not to put them where they will become heated, or near oil, onions, or other vegetables, as they readily absorb odors.

Although dirty eggs may be perfectly fresh, they invariably sell as "seconds," and when but a few dirty eggs are mixed with an otherwise fresh, clean lot, they materially decrease the price of the clean eggs.

Litter in the Poultry House.

Nothing is more conducive to health and vigor in the flock than an abundance of litter in the poultry house. There is a fine stimulant to exercise when the daily grain ration is scattered in the litter, and the hens must scratch and work to find their food. Unthreshed grain is excellent for hens; and it is a good practice to stack some grain near the poultry



The comfortable houses of the Rocky Ford Poultry Farm are located in the green alfalfa fields, which are so luxuriant at Rocky Ford, Colo.

You Can Make Money Raising Fruit in the Irrigated St. Stephen Valley

The best fruit country in the United States today is the irrigated St. Stephen valley in Texas. There's just the right combination of deep, rich soil, mild dry climate and ample water to insure large crops of perfect fruit. You can grow apricots, grapes, peaches, pears, strawberries—every fruit worth growing. You're not confined to fruit either—alfalfa, oats and garden truck make splendid yields. The water is there, held by a great concrete dam; it is sweet and pure and more than enough to irrigate the 9,000 acres in the valley.

You can make quick shipments to the high price markets of the North and East. One trans-continental railway with eight trains a day is only 11 miles away, and another is building right through the valley. No farm or orchard will be more than 2½ miles from a railway station. We have made a special price on the first 100 tracts—$20 down and the rest in three years. These tracts are selling rapidly at $80 an acre and after they are disposed of the price goes back to $100 an acre.

It will pay you to come down and see things for yourself. We'll pay your expenses while on the property; the round trip fare from Kansas City is only $32.50 on the first and third Tuesdays of every month.

Write us you're coming so we can reserve free accommodations for you on our farm. We have a booklet, fully illustrated, we want to send you too—"Where There's Water and Sixteen Feet of Chocolate Loam." Your name brings it free. Write for it now.

GREEF & KELLEY
General Sales Agents for
ST. STEPHEN LAND & IRRIGATION CO.,
B-714 Dwight Bldg., Kansas City, Mo.

THE LAND

movement is on better than ever. Cold winters are forcing people Southward. We have something good in South Missouri in the

OZARKS

Fine climate, water, soil, society, markets, shipping, good schools and churches.

Bearing orchards and timber tracts in 1, 10, 20 acre lots now on the market. Growing town. New $10,000 bank, canning factory and grist mill being organized. In direct touch of three million people.

For other facts and free literature, write Ozark Dept.

James B. Welsh Realty & Loan Co.
216 Finance Building, Kansas City, Missouri

WE WANT SOME Good Neighbors

I hired a man for six months to scour the State of Florida and select for me and my three sons some of the best land in the best locality. Then I engaged four experts to examine the tract selected. The editor of The Florida Grower was one of them; the others were prominent growers and nurserymen, and they all pronounced the land excellent.

To get a wholesale price, we bought several times as much land as we will need for our own groves and truck farms, and we are in position to offer to the right parties some of the finest 20 and 40-acre tracts in the state at very attractive prices.

We have learned many things about Florida that the settler should know, but which the land companies do not tell. Write for particulars and state your present occupation and why you are interested in Florida.

F. O. FARWELL
No. 14 Fenton Place. DUBUQUE, IOWA

Big Red Apples

are a sure paying crop in Northwest Arkansas, Washington and Benton Counties, the best location. Here are fruit and grain farm samples. 10 acres, 8 bearing orchard, house, barn, $1,300; 21 acres, all in bearing fruit, house, barn, $1,600; 62 acres, 30 fruit, house, barn, very fine, $5,200; 120 acres, 55 bearing apples, well improved, $7,000; 100 acres, 40 orchard, 8 berries, house, etc., $4,000; 1000 acres, 12,500 finest bearing commercial apples, 6 houses, 300 valley, surrounds R. R. town, paid $8,500 net in 1911, price, $50,000. Will divide. Best and biggest fruit, grain and stock farm list of Missouri, Kansas, Arkansas lands published. It's fine. Fine pocket map, either state, 15c, postpaid. Let's get acquainted.

LOTT "The Land Man"
300 Finance Bldg., Kansas City, Mo.

Do You Want a Home in the Beautiful Ozarks

of Missouri, in the Famous Strawberry Land

Apples, Peaches, Pears, Grapes, Raspberries, etc., all grow excellently. Ideal location for the dairy and poultry business. We offer for sale 60,000 acres of land in 40-acre tracts or more, cheap and on easy terms. Located in Stone and McDonald counties. For further information address

McDonald Land & Mining Company
Rooms 301-2 Miner's Bank Building
Joseph C. Watkins, Mgr., JOPLIN, MO.

Farmers Attention

to Cicer Arietinum (Syrian Peas) as seeding time is soon here. Greatest dry weather crop known. This is not field or cow peas, but different plant entirely.

Planted 6 to 8 inches apart in rows, rows 18 to 24 inches apart. The yield is from 15 to 100 bu. an acre. It matures in 7 weeks to 2 months.

Is excellent feed for hogs, cattle and sheep; contains more protein than corn.

The Hay is Equal to Alfalfa

Cicer Arietinum was grown in 40 States last year. Seed, one pound, 35c; 4 pounds, $1.25 postage prepaid; 10 pounds to 100, 20c per pound; over 100 pounds, 18c per pound and extra seed to cover freight on R. R. anywhere in the United States.
M. A. Linder, Wholesale Dealer, Midland, S. D., Box 800

FRUIT GROWING IN ARID REGIONS. A New Book, by Paddock and Whipple. $1.50. The Fruit-Grower, St. Joseph, Mo.

house for the use of the poultry. One of the best small grains is common pearl millet, well ripened. This makes fine litter, and the small seeds are highly relished by poultry, old or young. If one does not have these feeds at hand, chaff from the straw-stack will make good litter, and there should be an abundance of it. It should be at least 8 inches deep on the floor, and it should be renewed as often as it becomes damp and dirty.

The hens must not suffer from cold feet, either by going out on the snow or by standing on cold, damp floors. This, more than any other one thing, leads to disease in the flock and consequent lack of profit. Cold feet will reduce the hen's temperature, and thus expose her to the germs of disease. Pasteur, the French scientist, desired to inoculate a hen with anthrax, but it was impossible to do so, until the hen's temperature was reduced by compelling her to stand in cold water. This proves conclusively that cold feet reduce the vitality of the flock.

Whatever kind of floor, whether of wood, earth, or cement, is used in the poultry house, it must of necessity be too cold for comfort, anywhere in Minnesota. Hence the necessity of an abundance of litter covering the floor. If straw is not available, fine hay may be used, or any other dry material. Shavings may be used, but they are not recommended, as often too much wood is picked up with the grain, and its fibers obstruct the crop. Dry peat may be used; and it gives good satisfaction in some parts of Minnesota. It must be stored in a dry place, and never used when damp.

Use an abundance of some kind of litter; for it is as essential as feed to success with poultry.—N. E. Chapman, Extension Div., Minn. University Farm.

INDIAN RUNNER DUCKS
Bred by the Premium Poultry Farm, LaHarpe, Ill.

Indian Runner Ducks.

One should always be ready to justify the faith that is in him and I am glad to tell the readers of The Fruit-Grower about the merits of my favorite breed, the Indian Runner ducks. They originated in India, a great many years ago and were brought to this country about 1890. But they are not widely known, judging from the number of inquiries we receive each year in regard to them.

There are three varieties of this breed: The light fawn and white; the brown and white, commonly called the "penciled," and the pure white. I have had experience with them all and I find there is no difference in the laying qualities of the three varieties. The light fawn and white are the American standard bird and more valuable than the other two varieties for that reason. The brown and white penciled birds belong to the English standard and cannot compete in the show room with the light fawn standard birds because they are disqualified on account of the "penciling" or border around the feathers. The white runners are a "sport" from the other varieties. A flock of these birds is very beautiful as their plumage is snow white, but they are not so valuable as the light fawn and white variety because they are not standard birds. The time was never more favorable for people to start into breeding these beautiful birds, as the demand has never been half supplied. The demand for eggs this past season was so great that I could not keep enough for my own use. Although I shipped every day in the week and sold more than 1,500 eggs for hatching purposes, I could not supply more than half the eggs that were wanted.

ROSE COMB BROWN LEGHORN
Oscar Wells, Farina, Illinois

I have tried several different kinds of poultry as a money maker, but never until I secured the light fawn and white Indian Runner ducks did I find my ideal bird. Its equal as an egg producer has never been found. If given proper feed and care they will lay 10 months in the year. The eggs are fine to eat and sell on the market at hen egg prices any time in the year, and from February to May in eastern markets they bring from 15 to 20 cents more on the dozen than hen eggs.

The birds are small eaters compared with other ducks. I find one quart of feed enough for six laying ducks at a feed. A pond or stream is not necessary to raise them successfully. We raise them in large numbers every year, with no water except what we supply them with in buckets for drinking.

Any kind of a house that will keep them dry is good enough for them in winter. They will lay equally as well in confinement as on the range. They are never noisy if fed at regular feeding time. Their feathers are fine and downy, and they can be picked the same as other ducks, but they will not lay as well if picked regularly.

In mating them for best results, it is best to use one male to six or seven females. They do best in flocks of not over 30 or 40 together. I like them because they are so easy to feed and care for and do not require any expensive houses or fixtures of any kind, in fact I think the proper name of them should be "The Poor Man's Friend."

When contemplating going into any kind of business the first thing to consider is capital, and the amount required. Many of us would be glad to embark in some special kind of work if we had sufficient money to promote the enterprise. We must be content however to do something within our means. We are all aware that money makes money and without it one must struggle along the best he can. Now in the duck business it requires very little capital to give wondrous results. An investment in two or three sittings of eggs will give you a fine flock of ducks the very first year, without any additional expense. There is no doubt there is money in duck raising. From an investment of $13.00 in ducks and eggs only a few years ago, I have realized nearly $10,000.00 and I know of many others who have found them equally as profitable. The greatest mistake a new beginner usually makes is in starting into the business too heavily. It is best to start with a few and increase your flock as you grow with experience and knowledge of how to feed and care for them. I started with a few and have gradually increased my flock until now I have about 350 breeders and I find they are all I can care for, because they lay so many eggs that if I had many more I could not give them proper attention.

MRS. WM. HARSHBERGER,

Success *with* Small Fruits

Will be the leading feature in the MARCH Fruit-Grower

Strawberries, Raspberries, Blackberries, Currants, Gooseberries, Grapes, etc., are taking higher rank every year as important crops. Great strides are being made in their culture. Great profit comes from their cultivation. They serve as the foundation of many successful fruit farms.

The March issue of The Fruit-Grower will feature the cultivation of these Small Fruits, and we want to print the story of your success with berries. Tell us about your berries; what you have been growing; how you set out your plantations; how you cultivate, fertilize, mulch, spray, pick, pack and market.

Your experience will help others. If you have some good photographs that illustrate your work, send them along with your letter. They add to the interest of a story, and will assist greatly in making the March Fruit-Grower the most helpful, practical and invaluable berry number ever issued by any horticultural publication. Fifty Dollars in prize money will be paid for the five best berry stories accepted for this splendid edition and your letter should reach this office by February 20th at the latest.

THE APRIL NUMBER WILL FEATURE FARM AND ORCHARD MACHINERY

For this number stories are wanted of the personal experiences with everyday farm implements such as gasoline engines, spraying machines, automobiles and automobile trucks, cultivators, plows, mowing machines, pumps for irrigation and drainage, etc. We want stories from our readers telling of how they shake off the drudgery of farm work through the use of machinery; how machines enable then to save labor and do better work; what machines they use; how they are used and the adaptability and usefulness of the machine.

Prizes will be awarded as usual for these stories, and where ever possible should be accompanied by photographs. Address

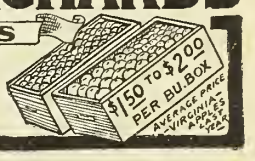
Editors, The Fruit-Grower, St. Joseph, Mo.

VIRGINIA·APPLE·ORCHARDS

PAY BIG PROFITS

N&W RY

$350.00 on long time and easy payments buys a ten-acre Apple Orchard tract in "The Beautiful Shenandoah Valley of Virginia." Other farm and fruit lands $15.00 per acre and up. Write now for last issue "The Southern Homeseeker," other interesting literature and low excursion rates. Address, F. H. LaBaume, Ag'l Agt., Norfolk & Western Ry., Box 3031, Roanoke, Va.



Go South Sir!

Farm Land $10 an acre

up can be purchased in the Southeast along the Southern Railway, Mobile & Ohio R.R. Ga. So. & Fla. Ry. supporting good churches, schools, stores and improved highways.

LIVE STOCK, POULTRY AND DAIRYING business pays big, and is conducted at smaller cost than in other sections of the country. Luxuriant pasturage and green fields the whole year 'round make this possible.

ALFALFA GROWS abundantly in nearly all parts of the Southeast. Many acres produce 4 to 6 tons, selling locally from $14 per ton up.

APPLES, FRUIT, TRUCK AND COTTON are other big paying crops. Apple orchards net $100 to $500 an acre, and truck gardening $200 up.

CLIMATE UNSURPASSED—Every day in the year one can work in his fields. These long seasons allow raising two and three crops from the same soil each year.

Subscription to "Southern Field" and booklets on States of Va., N. & S. Car., Ga., Fla., Ala., Miss., Tenn. and Ky. sent FREE.

M. V. RICHARDS, L. and I. Agent, Southern Railway, Room 33, Washington, D.C.

and Grow Rich

FLORIDA

LAND OF OPPORTUNITY

Home of the successful cultivation of the orange and grapefruit. Strawberries from the fields marketed at Christmas time.

The Florida truck grower can have his vegetable crops, lettuce, celery, cauliflower, potatoes, tomatoes, cabbage, early corn, etc., on the market earlier than any section of the United States, and at a time when other sections have no crops to offer. This gives him a great advantage in the markets of large centers of population.

The crop-growing season is 348 days. No other portion of the United States equals it.

The difference between mean monthly temperature of Florida in January and July is less than 25 degrees, while Maine records 49 and Pennsylvania 45.

The state is in the humid area with approximate maximum of rainfall—you know it takes water to raise crops.

Many acres of good, arable land obtainable at reasonable cost.

Illustrated booklets free—See "Land of Manitee" before investing elsewhere. ASK—

J. A. PRIDE, General Industrial Agent, Seaboard Air Line Railway, Suite 617 Norfolk, Va.

Mexico Mexico Tropical Lands—Good for home or investment. Excursion monthly. Write for maps, books, testimonials. MEXICAN ISTHMUS LAND CO., Grand Temple, Kansas City, Mo.

I WILL MAKE YOU PROSPEROUS

If you are honest and ambitious write me today. No matter where you live or what your occupation, I will teach you the Real Estate business by mail; appoint you Special Representative of my Company in your town; start you in a profitable business of your own, and help you make big money at once.

Unusual opportunity for men without capital to become independent for life. Valuable Book and full particulars FREE. Write today.

NATIONAL CO-OPERATIVE REALTY CO.

E. R. MARDEN, President

M144 Marden Building Washington, D. C.

"Finest Rocks in the Land"

DIVINIA'S Barred Plymouth Rocks are bred true—without doubt the finest line now on any soil. If you want super-extra quality we can more than please you. Scores in both males and females as high as 94. Stock and Eggs for sale. Beautifully Illustrated Catalogue FREE.

Barred Rock Farm S. T. Divinia Proprietor Station B. St. Joseph, Mo.

Advertisers like to know what paper is giving the best service for money expended. You can aid them materially if when writing, you mention The Fruit-Grower

Our Classified Advertising Department

For advertisements in this department, of not less than twenty-five words each, in which no display type is used, we make a special rate of FOUR CENTS PER WORD, EACH INSERTION. If several different advertisements are inserted in the same issue, the charge will be $1.00 for each ad, no matter how small. The first four words of each ad will be set in black type. Every Initial and number to count as one word. This department is for the benefit of our subscribers who have anything to sell, including farm lands, fruit farms, dogs, ponies, poultry and eggs, live stock, plants, shrubs, vines, etc. All advertisements for this department must be PAID FOR IN ADVANCE. Count the number of words you send, and remit at rate of 4 cents per word, stamps, currency or money order. This is considerably less than our display rate, and offers a splendid opportunity to reach our readers at a low figure. Send a trial advertisement with remittance at rate of 4c a word. THE FRUIT-GROWER, St. Joseph, Mo.

POULTRY DEPARTMENT

Anconas

Sheppard's Famous Anconas. The world's best. First at world's greatest shows, including London, England, Madison Square and Cleveland. Greatest egg record. Catalogue free. Cecil Sheppard, President International Ancona Club, Berea, Ohio.

Anconas. American Beauty Strain. Biggest money makers. Real hustlers. World's best layers. Will produce four eggs on same feed Orpingtons require for one. Outweigh Plymouth at 10 weeks. I win at all shows. Send for catalog. C. A. Niebur, Dept. 2, Lindsay, Neb.

Anconas—Stock, eggs. Three pens. Show, trapnested egg strain and utility. Reasonable prices on application. Honest complaints made right. M. E. Wells, Brewster, Ohio.

Prize Winning Mottled Anconas. Famous winter layers. Eggs, $1.50 to $3.00. Baby chicks $2.50 per dozen up. Write for Circular. W. H. Hardman, Frankfort, Kansas.

Rose's Anconas and Indian Runners. Prize winners and great layers. Eggs, $1.00, $2.00, $3.00 per 15. Write for circular. Mrs. Daisy Rose, Bois D'Arc, Mo.

Ferncliff Farm Anconas are the kind you like. Bred to show and lay. Quality and prices will suit you. Circular free. C. Krichbaum, Youngstown, Ohio.

Get Anconas, the greatest layers known today. Stop last, begin first; lay when others rest. Pure, dark, grand birds, the best. L. Evitts, Falls, Pa.

Andalusians

Blue Andalusians. Winners at the leading shows for fifteen years. Great layers—and the prettiest of fowls. Stock and Eggs. F. L. Garnett, Nottingham, Ohio.

Bantams

Partridge Cochin Bantams with and without score cards. Stock and eggs. Also eggs from fine Single Comb Brown Leghorns. L. Beechler, Springfield, Ill.

Bantams, Eggs, 34 varieties, Sebrights, Cochins, Games, Polish, Rose Combs, Brahmas, Japanese. Send 2c stamp for circular. A. A. Fenn, Box 10, Delavan, Wisconsin.

Brahmas

Do you want to better your flock? Write for pictorial price list. I have nothing but the best 1911 Kansas State Show Brahmas; against 46, won me 10 premiums in 1912 show; 14 won 15 premiums. Mrs. J. R. Kenworthy, Wichita, Kan.

Light Brahmas exclusively; high grade, vigorous, good layers, good lookers, good prize winners. Stock and Eggs for sale. Harold E. Davis, Sleepy Eye, Minn.

Light Brahmas, scored to 95½; never been defeated in show room, Felch strain; best layers; $1.50 per 15. J. H. Willis, Jeweler, Norris City, Ill.

Buckeyes

Buckeyes—Dark red, small "pea" combs, small wattles, long backs, broad shoulders—ideal winter layers. Eggs and baby chicks; silver cup winners, Missouri State Show. Highland Poultry Farm, Box F, Nevada, Missouri.

Cornish

Forest City Cornish Yards, Shawnee, Okla. Home of World Beater Dark Cornish and White Indian Runner Ducks. Stock and eggs for sale. Mating list free.

Dominiques

The American Dominique is the only hen that will lay prolificly for fourteen years. Eggs 14 for $2. Mrs. A. L. Carson, 1425 Main St., Evanston, Ill.

Dorkings

Silver Gray Dorkings. Try these grand English fowls for excellence and profit. Hens at $1.25; eggs at $2.00 per setting. D. W. Seibert, Somerset, Pa.

English Red Caps

English Red Caps—Z. T. Turner, Eleroy, Ill., importers and breeders of America's best Red Caps. Catalogue free. Five other breeds. Exhibition quality.

Faverolles

French Salmon Faverolles are fastest growers; best winter layers, and are unequalled for broilers and market fowls. A. Essig, 2460 East 9th street, Cleveland, Ohio. Circular free.

Hamburgs

Silver-Spangled Hamburgs — Winners at leading shows. Many fine utility and exhibition cockerels. Stock and eggs for sale. Satisfaction guaranteed. Frank Heilman, North Judson, Ind.

Silver Spangled Hamburgs, real good ones, spangled all over, winners at 18 shows and fairs, guaranteed eggs $2.00 for 15; $3.50, 30. Descriptive circular free. Charley Laughlin, Bloomfield, Ind.

Silver-Spangled Hamburgs, Partridge Plymouth Rocks, Houdans, Light Brahmas, highest quality, lowest prices. Winners and breeders for sale. Eggs in season. Will Clark, Sullivan, Ohio.

Houdans

Houdans—Dependable exhibition and utility cockerels for sale. Eggs from selected matings after March 1st; $2.00, 15; $3.50, 30. Satisfaction assured. Elm Park Place, Lawrence, Kan. W. L. Bullene.

Langshans—Black

Prize-winning Black Langshans, Buff Orpingtons. Eggs, $1.50 per 15. Fine cockerels for sale cheap. Jno. Cole, M. D., Williamsfield, Knox County, Illinois.

Happy Hollow Black Langshans are as good as grow. They have won more prizes than any flock in Illinois, same number of entries. Eggs, $3.00 for 15. Chal White, Prop., Hillsboro, Ill.

Black Langshans; eggs, $1.00 setting; $5.00, 100. Rose Comb Brown Leghorns and Single Comb White Leghorns; eggs, $4.00, 100. Satisfaction guaranteed. Golden Gate Farm, Lafayette, Indiana.

Black Orpingtons. Stock and eggs for sale. High class, score 93 to 95½. Write for prices. Circular free. Satisfaction guaranteed. T. Haynes, Red Bud, Ill.

You need our strain of big Black Langshans. High scoring, heavy laying birds. Get your egg order in without delay. Neville Poultry Farm, Kewanee, Ill.

Get your egg order in now for early hatches. You need our big everlasting laying Black Langshans. Settings, $3.00. Neville Poultry Farm, Kewanee, Ill.

Black Langshans. Choice stock for sale from prize winners. Eggs booked for delivery from now on. Mrs. W. S. Wood, Route 1, Hunnewell, Mo.

Black Langshans. Winners American Royal, Missouri State shows. Farm raised, healthy, vigorous, big layers. Show stock, utility prices. C. M. Stackhouse, Box 567, Parkville, Mo.

Leghorns

Winter Laying Leghorns. Bred to "Shell Out" eggs, and do it. Baby chicks, eggs, stock. Catalogue free. O. C. Frantz, 85 South, Rocky Ford, Colo.

Reiff, the Farmer Fancier breeder of R. and S. C. Leghorns. Eggs for hatching, 10c each; $10.00 per 100. Joseph Reiff, Fayetteville, Pa.

Leghorns—Brown

Rose Comb Brown Leghorns. First prizes at Illinois and Missouri state shows, Indianapolis, etc. Heavy laying strain, best chickens for farmers. Eat least, lay most. Eggs from flock, $5.00 per hundred. Pens, $5.00 per 15. Oscar Wells, Farina, Ill.

Brown Leghorn Eggs, $3.00 per 15. Winners at Chicago, St. Louis, Cleveland, Cincinnati, Indianapolis. Over 400 premiums. Free circular on show record and matings. 25 cockerels at $1.00 each. E. E. Carter, Knoxville, Tenn.

Eggs for sale. Single-Comb Brown Leghorn pure-bred stock. Free range from a good laying strain. Incubator eggs in season, 120 eggs for $5, 260 for $10; a setting of 15 eggs, 75c. Fred Huecker, Route 1, Bunceton, Mo.

Lamson's Rose-Comb Brown Leghorns are bred to lay. Madison Square and other big show winners. Stock, eggs and chicks. Circular free. H. Lamson, Box L, Cameron, N. Y.

Rose Comb Brown Leghorns, Mammoth Pekin Ducks. Winners at State Poultry Show, Detroit, 1911. Stock, eggs and baby chicks. Prices reasonable. Claudia Betts, Hillsdale, Mich.

S. C. Brown Leghorns. High grade cockerels and hens. Heavy laying strain, fine birds, $1.00. If in need, write us. Crow Creek Poultry Farm, Washburn, Illinois.

Single Comb Brown Leghorns. Bred-to-lay strain. Also Light Brahmas, utility bred. Eggs for hatching. Circular free. Maple Leaf Poultry Yards, Tunnell City, Wisconsin.

S. C. Brown Leghorns. 4 pens mated. Booking orders now for eggs. Bright's strain, finest in the world. Granite State Poultry Yards, Nashua, N. H.

Single-Comb Brown Leghorns. Champions of the entire West. Over 300 prizes won in 22 years. Circular free C. F. Lang, LaCrosse, Wis. Box F.

S. C. B. Leghorns—Bred exclusively for 25 years. Have as good as money will buy. Try some of my stock. W. W. Egbert, Millersburg, Ill.

R. C. Brown Leghorns of quality. Show birds for big shows. Bred for years to lay. Circular free. W. C. Pifer & Son, Keyser, W. Va.

Leghorns—Buff

The Sunshine Flock S. C. Buff Leghorns. Gold on your farm; gold in your pocket. Pen 1, $3.00 per setting of 15; Pen 2, $2.00; Pen 3, $1.00. Range, $5.00 per 100. Mrs. Anna H. Baldwin, Keswick, Iowa.

Single Comb Buff Leghorns. Gold Dust strain. Have won the silver cup at the State Association Show at Indianapolis the last two years. 20 good cockerels for sale. J. C. Eisenman, Greensburg, Ind.

Green's Golden Feather strain Buff Leghorns, single rose. Best blood produced; winners everywhere. All scored by Pierce. Photos, feathers, winnings free. Horton Green, Colchester, Ill.

Hart's Single Comb Buff Leghorns are layers, winners and payers. You can get along without this strain but you can get along better with it. Mating list free. W. D. Hart, Ashland, Mo.

Single Comb Buff Leghorns exclusively. 14 years. Select matings, 15 eggs, $1.50. Utility stock, 15, $1.00, $3.00, 100. Mrs. Frauk Carnahan, Route 3, Adrian, Michigan.

Single Comb Buff Leghorns. Cockerels, $1.50. Pen eggs, 15, $2.00. Range, 15, $1.00; 100, $5.00. Baby chicks, 12½ cents each. Mrs. John H. Wood, Solomon, Kansas.

Choice Single-Comb Buff Leghorns, $1.25 each, $3.25 per trio. Indian Runner drakes, $1.25. Eggs in season, from prize winners. Hillcrest Farm, Blackwater, Mo.

Merihews Buff Leghorns. Won five regular and special prizes at the last Madison Square Garden show. Write for mating list. L. E. Merihew, Marathon, N. Y.

Rose Comb Buff Leghorns bred exclusively, seven years. Select eggs, $1.50 per 15. Booking orders now. Goldenrod Poultry Farm, Box 28, Mesa, Colo.

Single Comb Buff Leghorns, the laying kind. Eggs from prize winners. $2.50 and $3.00 per 15. Joseph E. Mattison, Box 377, Paducah, Ky.

15 Eggs, $1.50, from 6 choice pens of Single Comb Buff Leghorns and Rhode Island Reds. Also stock for sale. G. C. Mahle, Washington, Ill.

Golden Buff Leghorns—250-egg record, trap nest strain. Fertile eggs and stock. J. L. Helpman, Freedom Station, Ohio.

Silver Leghorns

Silver Leghorns a specialty; 11 years a breeder of this beautiful variety. Send for my free circular. Sylvester Shirley, Rt. 3, Port Clinton, Ohio.

Leghorns—White

S. C. White Leghorns—One thousand White Leghorn utility cockerels from greatest exhibition and egg producing strains in America. No culls or disqualified birds in lot; $1.25 each, five for $6.00 or ten for $10.00. The best birds on earth to cross with your flock and improve the egg producing qualities. Don't overlook these low prices for really superior stock. Twin Brooks Farm, R. D. 7, Springfield (Lawrenceville), Ohio.

The famous laying and paying 240-egg strain. Single Comb White Leghorns, and Barred Rocks. 300 yearlings as pullets paid a profit of $2.50 each, from September 5, 1910 to September 23, 1911, in market egg records. Hatching eggs and baby chicks, baby chicks hatched in our candle mammoth incubator; season's capacity 50,000 chicks. Send for booklet. Lilly White Poultry Farm, Grand Rapids, Mich.

Single-Comb White Leghorns—Our famous "Weja" strain. Barred Rocks, Ringlet strain. Cocks, cockerels, hens and pullets for sale. Booking orders for baby chicks, 10 cents each. Our customers return year after year, which is proof conclusive. Our stock pleases. Peerless Poultry Farm, Kenton, Ohio.

Ozark Strain White Leghorns; great layers, great beauties. Send for catalog, its different. Eggs of quality for incubator or hen. F. S. Newcomb, St. James, Mo.

Single-Comb White Leghorns exclusively. D. W. Young's strain, finest in the world. Greatest layers, all on free farm range; 4,000 breeders. Eggs for hatching now ready at $6 per 100, in any quantity. Baby chicks ready in March. My great book, "Profits in Poultry Keeping Solved," will start you right. Price, $1.; circular and testimonials free. Edgar Briggs, Box 44, Pleasant Valley, N. Y.

Our big egg book tells all about our 2,000 laying big egg strain S. C. White Leghorns. The egg and what it should be. It is especially interesting to beginners. It's free. Ridge Egg Farm, R. F. D., West Nyack, N. Y.

Single Comb White Leghorns of Quality. Prolific layers. Large snow white. Free range. Best equipped poultry ranch in Southern Indiana. Stock and eggs for sale. Eggs, $5.00 per hundred. Satisfaction guaranteed. Write, The Maples, Dr. J. D. Horton's Poultry Farm, Paoli, Ind.

Hoyles S. C. White Leghorns, prize winning egg machines. Cockerels and hens for sale. Prices reasonable. Eggs and baby chicks. Special rates in quantities. Indian Runner duck eggs. The Hoyle Poultry Farm, Whittier, Iowa.

Standard Bred S. C. White Leghorns. (D. W. Young's strain); not one drop of any other blood. Eggs and stock for sale. Mating list free. Now ready. S. F. Shallcross, Box 80, Odessa, Dela.

S. C. White Leghorns, Young & Wyckoff strains. Five hundred yearling hens and 500 April-hatched pullets for sale at a bargain prices. Satisfaction guaranteed. K. I. Miller, Box 53, Lancaster, Mo.

S. C. White Leghorns exclusively, raised on open range. Strictly healthy eggs for hatching, $1.00 per 15; $5.00 per 100. From prize winning stock. Walnut Grove Poultry Farm, Gallatin, Mo.

Empire State Single-Comb White Leghorns. Prize winners and heavy layers. Trios $5.00. Eggs for hatching $1.00 for 15. $5.00 per 100. Circular free. C. H. Zimmer, Weedsport, N. Y.

Single-Comb White Leghorns—Winners at leading shows for 28 years. Choice stock for sale. Eggs in season. Write your wants. J. H. Kollmeyer, Quincy Heights Poultry Farm, Quincy, Ill.

Sunflower Poultry Farm. Single Comb White Leghorns exclusively. Best mating, $3.00 and $5.00 per 15; utility, $1.00 and $5.00 per hundred. Arthur L. Knapp, Branford, Conn.

Brookside famous winter laying strain of Single Comb White Leghorns, the kind that lay and pay. Eggs for hatching a specialty. Catalog free. Brookside Poultry Farm, Bachmanville, Pa.

S. C. White Leghorns. Breeder of "Bred to Lay," a strain of unsurpassed winter layers. 15 eggs, $1.00; 100 eggs, $5.00. No order too large. R. S. Ketcham, Box 20, Boonville, Ind.

Hatching Eggs. By breeding pens of S. C. White Leghorns are composed of only December and January layers. Consider what this means. $1.50 per 15. O. F. Merrill, Parma, Idaho.

Single-Comb White Leghorns; large plant, large fowls, large eggs. Stock for sale; eggs for hatching, baby chicks in season. Catalog. Fowler Egg Farm, Fowler, Colorado.

Cherry Grove Poultry Farm. S. C. W. Leghorns. 300 pullets and yearlings for sale and eggs for hatching. Baby chicks a specialty. J. A. Hochstedler, Rocky Ford, Colo.

171 eggs per hen per year; average of our S. C. White Leghorns. Prize winners. Stock, eggs, chicks; mating list free. Cunningham Bros., Route 5, Lansing, Michigan.

Single Comb White Leghorns exclusively, large, stay white kind, heavy layers, and profit payers. Eggs, $4 and $10 per hundred. H. A. Teegarden, Union City, Indiana.

S. C. W. Leghorns, Ingraham strain. Large white birds, prolific layers; none better. Eggs for sale. C. G. Ingraham, Originator of the strain, Waukegan, Illinois.

Single Comb White Leghorns. Winners of the Blue and Red. Baby Chicks. Eggs for hatching, any number. Yarmond Poultry Farm, Dept. F. Cranford, N. J.

Cole's S. C. White Leghorns. Large, vigorous, farm raised birds. Heavy laying strain. Eggs, $1.25 per 15; $5.00 per 100. Cole's Poultry Farm, Quakertown, Pa.

Single Comb White Leghorns. The quality kind. Good winners at Detroit and Indianapolis, 1911; stock and eggs for sale. C. W. Hosmer, Union City, Mich.

S. C. White Leghorns. No better laying strain anywhere for any money. Hatching eggs, $1.50 per 15; $5.00 per 100. A. Nafziger, Benton Harbor, Mich.

Conradt's S. C. W. Leghorns lay large white shelled eggs; $1.00 per setting; 100 hens and cockerels for sale. C. G. Conradt, Ft. Madison, Iowa.

Single Comb White Leghorns, Runner Ducks. Eggs, $1.00 per 15; $4.00 per 100. Rose Comb Black Bantams, $1.50. Phil Ried, Castalia, Ohio.

Rose Comb White Leghorns. Reasonable prices. Laying strain and show birds. Golden Sebright Bantams. Reasonable. J. L. Moore, Rolfe, Iowa.

Single-Comb White Leghorn Winter Laying strain. Baby chicks a specialty, make your wants known. J. A. Hochstadter, Rocky Ford, Colo.

S. C. White Leghorns. Young, Wycoff, heavy laying strain. Eggs five and ten dollars hundred. Guaranteed. E. E. Wells, Cohoes, N. Y.

S. C. White Leghorn pens score 93 to 94; $1.00 setting 15. 94 to 95¾, $1.50; scored stock have prize. Wm. C. Dahl, Berger, Mo.

Rose Comb White Leghorns. Chicago winners. Thos. Brogden, Rush Lake, Wis.

Minorcas—Black

Single Comb Black Minorcas exclusively (Northrup strain), unexcelled for laying. Eggs, $1.50 per 15, $5.00 per 100. Ward L. Hammond, Route 2, Oswego, New York.

Single Comb Black Minorca Eggs from strain of National reputation, $3.50, 15; $6.00 per 30. Results guaranteed or your money refunded. Fred Kelm, Seneca, Kan.

Single Comb Black Minorcas bred exclusively. Excellent laying strain. Eggs, $2.00 per 15 or $8.00 per 100. Minorca Farm, Sta. L, Route 3, Cincinnati, Ohio.

Rose Comb Black Minorca Eggs for hatching from first prize winners at Chicago and other large shows. Mating list free. Edgar Brooks, Zion City, Ill.

Minorcas—White

Single Comb White Minorcas. Pens made up from fine selected stock. Scores of satisfied customers. Eggs for hatching at right prices. Write for further information. W. E. Rice, Spartansburg, Pa.

Rose and Single-Comb White Minorcas. Choice, prize winning stock. 15 eggs, $2.00. Booking orders now. Charles M. Palmer, Nassau, N. Y.

Rose Comb White Minorcas, the world's best. Thos. Brogden, Rush Lake, Wis.

Ornamental

Silkies, White Frizzles, Black Frizzles, White Rumpless, Black Rumpless, White Guineas, Pearl Guineas, Gray Call Ducks, English Greyhound pups. (Wanted Peafowls.) Enoch Baily, Albion, Ill.

Orpingtons—Black

Gee-Whiz Fruit and Poultry Farm Orpington Eggs for hatching. Arkansas bred. Buff, White and Black. Bred right, kept right and sold right. Write for 1912 mating list. Gee-Whiz Fruit and Poultry Farm, Fred P. Phillips, Manager, Rt. 1, Gentry, Benton Co., Ark.

Single Comb Black Orpingtons. Prize winners. Winning three firsts, three seconds, two thirds, one fourth, one fifth at two shows. Eggs from two grand pens, $2.00 and $2.50 per 15. John Holscher, Dyersville, Ia.

Schuman Single-Comb Black Orpington. Best of all winter layers. Scoring as high as 94½. Winners wherever they show. Eggs in season. $2.50 for 15. Ed. J. Schuman, Neosho, Wis.

Criterion Black Orpingtons for laying and winning. Standard size type, color, Crystal Palace and American winners. Mated up. Catalog. Lykens Valley Farm, Box G, Sacramento, Pa.

Black Orpingtons exclusively. The low, blocky kind. Winners twice of the American Orpington Club Cups. Stock for sale. Eggs, $5.00 and $3.00 per 15. E. F. Arrington, Milton, Wis.

Black Orpington Eggs from my best matings, $2.00 and $3.00 for 15. Choice cockerels, $5.00. Write for particulars. Chas. E. Perry, Box 174, La Grande, Ore.

Black Orpingtons, Cook and Owens strains; prize winners. Also Single Comb Black Leghorns. Great winter layers. F. G. Turner, Box 356, Alleghany, N. Y.

Oavis Black Orpingtons win wherever shown. A few extra bargains in stock. Eggs, $3.00 per 15. S. H. Davis, Box N, Lansing, Mich.

Buff Orpingtons

S. C. Buff Orpingtons. Eight pens headed by cockerels scoring 93. Raised from imported birds scoring dam 93½, sire 95¼. Eggs from all pens, $2.00 per 15; $10.00 per 100. Satisfaction guaranteed. S. B. Terry & Son, Little Sioux Poultry Yards, Little Sioux, Iowa.

Single Comb Buff Orpingtons exclusively. Eggs from special matings, choice exhibition stock, $3.00 to $5.00 per 15. From utility stock, $1.50 per 15; $6.00 per 100. Send for mating list. Leo. W. McDavitt, Laplata, Mo.

Eggs and prize winning S. C. Buff Orpingtons at $1.00 for 15, $2.50 for 50. Eggs from S. C. Black Orpingtons, $1.50 for 15, $3.50 for 50. Satisfaction guaranteed. Carl J. Hedberg, Boxholm, Iowa.

Single Comb Buff Orpingtons. Pen headed by 2nd cockerel Kansas State Show, 1910; hens from "Victor," 1st cock, same show. Eggs, $5.00 for 15. Mrs. T. A. Jackson, Yates Center, Kan.

Buff Orpingtons, Owens strain. Won prizes in two good shows. Cock scored 93 by Russel. Stock all sold. 15 eggs, $3.00. Fertility guaranteed. Club member. C. D. Adams, Olathe, Kan.

Single Comb Buff Orpingtons. Ten grand pens of prize winners. Eggs, $1.50, $2.00, $3.00 per 15; $5.00 and $7.00, 100. Over 500 prizes in four years. H. D. Kelley, Reedsburg, Wis.

Closing out Buff Orpingtons. Pullets, $1.50 to $2.00. Cockerels, $3.00. Excellent Barred Rock cockerels, $3.00 to $5.00. Pullet bred. Eggs. Frederick Coons, Greendale, N. Y.

Buff Orpingtons. Two great shows, won 4 1st, 2 2d, 2 3d, 2 4th, and 8 specials. Eggs, $1.50 and $5.00 per 15. Write for catalog. B. F., Aug. Petersen, Churdan, Iowa.

Single Comb Buff Orpingtons. High scoring stock. Rich in blood. Madison Square winners. Eggs, $1.50, 15; $2.50, 30. Utility, $5.00, 100. Mrs. Fred Jones, Kane, Ill.

S. C. Buff Orpington Eggs from prize winners at Illinois State Fair, 1911, won 1st cockerel. Write for mating list. Mrs. Ferne Deuterman, Atlanta, Ill.

S. C. Buff Orpingtons and Red Carneaux Pigeons. Quality and price makes business. Eggs and stock for sale. Write me. J. B. Joseph, Sears, Ill.

S. C. Buff Orpington Eggs. Martz and Owens strain, best winter layers. Big egg record. Golden Buff, $1.50 to $3.00 setting. Thomas Fewtrell, Joliet, Ill.

Early Bird Buff Orpington Farm. Orpingtons that are Buff. Eggs that will hatch. Always a cock for sale. Dr. W. I. Griffith, Fort Scott, Kansas.

Single Comb Buff Orpington; eggs, $1.50 to $3.00 for fifteen; day old chicks; send for mating list. J. W. Bear, Warrensburg, Mo.

Orpingtons—White

Crystal White Orpingtons, Kellerstrass strain. We won the blue at eight big shows. Stock, Eggs and Baby Chicks always for sale. Mountain View Ranch, 8 Sugar Station, Salt Lake City, Utah.

Crystal White Orpingtons are the most popular chickens in the world today. You can see more of them advertised than any other breed of chickens. Why—because they weigh more and lay more We were the originators of this famous breed. They were originated right here on our farm. If you want to know more about them and the prices of stock and eggs, send for our large illustrated catalogue. Kellerstrass Poultry Farm, Westport Road, Kansas City, Mo.

Our Crystal White Orpingtons and Mani Light Brahmas have been awarded sixty-three regular and eleven special prizes at Iowa shows, 1911-1912. At Des Moines we took 1st cock, 1st and 2d cockerel, 1st and 2d pullet, 2d and 3d hen, 2d pen. Silver cup for best cockerel, silver cup for display Brahmas and Sweepstake cup over all Asiatics. Stock for sale; eggs, $3.00 and $5.00 per 15. Fairholm Poultry Yards, 307 W. 4th St., Boone, Iowa. W. Oliver, Mgr.

What Have You to Sell?

¶ Perhaps you have some extra nice cockerels to dispose of; it may be that you have some good pure-bred pigs to sell to those who wish to improve their droves; maybe you have some surplus small fruit plants; you may want to buy a farm or to sell one; you may want to hire a man or to get a job for yourself. No matter—whatever you have to sell, or whatever you want to buy, you should use the advertising columns of The Fruit-Grower, and

MAKE YOUR WANTS KNOWN ON THIS PAGE

¶ Hundreds of Fruit-Grower readers find it profitable to advertise in our Classified Columns. The cost is small, and returns great; you can make money by advertising your surplus wares in this department. There's nothing like it for cheap, effective advertising. Rate is

FOUR CENTS PER WORD PER MONTH

¶ Cash with order. We don't want to keep books on this department, and cash for advertising must accompany the order. Copy can be changed as often as desired. Send your copy for next issue. Address

The Fruit-Grower Classified Department **St. Joseph, Mo.**

Imported Single Comb White Orpington stock and eggs from first prize cockerel, third prize cockerel, second pen, second and fourth pullets at Illinois State Poultry Show, Springfield, 1911, and winners at many other shows. Write for mating list and prices. Heaps White Orpington Farm, Kewanco, Ill. Dayle S. Blake, manager. Warren T. Heaps, M. D., Proprietor.

Buy "Crystal White Orpingtons"—Best for market because they grow faster; best for eggs because they are the "winter egg" machines. I am booking orders now for eggs from prize winners at Lansing and Port Huron, Michigan shows, 1911. Prices, $3.50 and $5.00 per 15. William Purfield, Ann Arbor, Mich.

Crystal White Orpingtons. Fomales from Kellerstrass $100.00 pen. Males direct from Kellerstrass. Eggs, $2.00 setting of 15. Rhode Island Reds, Lambke and Justle strain. Both combs. Eggs, $1.00 setting of 15. Orders booked to ship when directed. Roland McKean, Mulberry Grove, Ill.

Prize Winning Kellerstrass White Orpingtons from best matings; bred white, stay white. Winning kind. Blue ribbons from Russell. Vigorous farm range stock and eggs three to ten dollars. Buff Orpington Ducks. Great money makers and egg layers. Mrs. I. Rambo, DeLong, Ill.

White Wyandottes. Eggs from show winners exclusively, which several scored to 96; never defeated, won 53 premiums, 3 shows, 19 1st and 2d. Eggs, $1.00 and $2.00 per 15. Write for photos in mating list. You'll buy sure if you do. J. H. Willis, Jeweler, Norris City, Illinois.

Crystal White Orpingtons from high-scoring pen laying 63 per cent. Five months old pullets averaged 53 per cent. A few choice cockerels and pullets. Satisfaction guaranteed. Eggs, $1.50 and $1.00. Marion Stevenson, 2712 Pine St., St. Louis, Mo.

Crystal White Orpingtons, Kellerstrass; R. C. White Orpingtons, White Langshans, S. C. White Leghorns, White Wyandottes, Black Minorcas, $1.50 to $2.00 per setting. Silver Spangled Hamburgs, cockerels $3.00. Selma Shanander, Pilot Mound, Iowa.

Kellerstrass and Jackson Strain of Crystal White Orpingtons. Eggs for hatching, $2.50, $5.00 and $8.00 for settings, of 15. All pens are of excellent stock. Eggs at $8.00 are from first prize winners. Mrs. J. N. Byrd, Branchville, S. C.

Kellerstrass Crystal White Orpingtons, single comb, 75 fine large pullets for sale. Price $5 each. I have no culls. Eggs from five fine pens at $3 15, $5 30, $7 45. Booking orders for January and February. James A. Driggs, Liberty, Ind.

Kellerstrass Orpingtons—April hatched stock from a $100.00 pen direct from the Kellerstrass farm and selected by him. Choice cockerels and pullets at a bargain. Eggs after April first, $5.00 per setting. Miss Susie M. Fowler, Slater, Mo.

We have 40 of Kellerstrass' famous breeders, from which he sold eggs at $2.00 each. We can sell you eggs from these identical hens at $2.00, $3.00, $4.00 per setting. Special rate per 100. Mrs. Little, 36th & Jackson, Kansas City, Mo.

White Orpington Eggs from imported pen, $15.00 per 15. First pen American birds, $10.00 per 15. Several pens, all prize winners, $5.00 per 15. Satisfactory hatch guaranteed or refilled at half price. Wm. Thurman, McMinnville, Tenn.

Single Comb White Orpingtons. Many prize winners mated this season for eggs. Baby chicks after April 1st. Eggs, $2.00 to $10.00 per 15. Send for mating catalogue. Superior Poultry Farm, A. J. Bullis, Prop., Goodland, Ind.

White Orpingtons, Kellerstrass and Cook strains. Heavy layers; winners at Ft. Madison, Keosauqua, Bonaparte, Keokuk, Ia., Warsaw, Camp Point, Ill. Eggs, $3.00 setting, 30 for $4.00. J. M. Skinner, Keokuk, Iowa.

S. C. White Orpingtons and Salmon Faverolles. Winners silver cup Zion City and 3 1st, 2nds and 3rds, and 1st pen at Oconomowoc, Wis. Cockerels for sale. Mating list. Innes Crystal W. Yards, Edgar Brooks, Zion City, Illinois.

Kellerstrass Crystal White Orpingtons direct. Eggs from a $70 pen, 1911 birds, $3 for 15; others, $2 and $1.50. Hen-hatched, brooder-broke chicks, 20c to 30c each. Wardwell Poultry Yards, Grant Ave., Rutland, Vermont.

S. C. White Orpingtons. The ideal farmer's fowl; quick growers, big weighers, big layers and acclimate themselves easily. Eggs from utility stock, $1.50 per 15. G. F. Fisher, 122 N. Seltzer St., Crestline, Ohio.

Orpington cockerels at $2.50 to $5.00. White, Kellerstrass strain. Black, Bon Ayr strain. Satisfaction guaranteed. Gee-Whiz Fruit and Poultry Farm, Fred P. Phillips, Manager, Route 1, Box 71, Gentry, Ark.

S. C. White Orpingtons. Descended direct from $1,000.00 Madison Square and Crystal Palace, England, winners. Grand pullets, $2.00; pens, one cockerel, four pullets, $9.00. A. M. Sinsabaugh, Wyalusing, Pa.

Single-Comb White Orpingtons, Kellerstrass strain. We are booking eggs for early delivery. Our birds are winners at the fall shows this year. Stock for sale at reasonable prices. Chas. McClure, Tremonton, Utah.

Orpingtons, White (both combs), Single Comb, Buff, Black. New York, Boston, Hagerstown, Williamsport winners. Eggs, Baby chicks, reasonable. Mating list free. Wm. Seidel, Box G, Washingtonville, Pa.

Crystal White Orpingtons. Write us your wants, we have both stock and eggs for sale. Foundation stock a $100.00 pen direct from Kellerstrass Farm. Hardin Poultry Farm, Route I, Noble, Okla.

White Orpingtons, Kellerstrass strain. Two hundred fine yearling hens and March and April-hatched pullets for sale at bargain prices. Satisfaction guaranteed. K. I. Miller, Box 25, Lancaster, Mo.

S. C. White Orpingtons, Philo and Kellerstrass. Pedigred winter laying and exhibition strains. Matured classy birds. Orders filled in turn. Eggs, 20c each. R. W. Howland, Manchester, Iowa.

Single and Rose Comb White Orpingtons. Best strains. Single Comb White Cochin Bantams. Eggs after March 1st. Miss Edith Cavanagh, Cavalna Poultry Farm, Orange, Virginia.

Kellerstrass Crystal White Orpingtons, Miles trapnested Single Comb Rhode Island Reds. Baby chicks and eggs for hatching. Forestview Poultry Farm, R. D. 2, Saint Johnsville, N. Y.

We breed only Kellerstrass Crystal White Orpingtons. Parent stock direct from Kellerstrass. Eggs, $3.00, 15; $6.00, 30; $10.00, 60. Circular giving particulars. W. W. Gillum, Barnett, Mo.

Kellerstrass Crystal White Orpington cockerels; few, $3 to $5. Parent stock direct from Kellerstrass, $30 mating. Eggs, $3 to $5 per 15. W. H. Briner, 1528 Lawn, Kansas City, Mo.

Crystal White Orpingtons (Kellerstrass strain), at Iowa State Fair, 1911, won 2d cock, 2d hen, 3d pen laying contest. Eggs, $2.50 per 15. P. A. Fosselmann, Route 6, Waverly, Iowa.

Orpington Eggs, $3.00 per 15; $12.00 per 100. Birds from $50.00 and $100.00 Kellerstrass trios. My birds have been laying all winter. Cockerels, $2.00. Roy Bowman, Albany, Wis.

Kellerstrass Crystal White Orpingtons; farm raised, hen-hatched cockerels and pullets, sold under guarantee at reasonable prices. Egg orders booked. Harvey Brown, Highmore, S. D.

White Orpingtons of quality, Kellerstrass strain direct. Blue-ribbon winners. Utility eggs, 15 $1, 100 $6. Circular free. Satisfaction guaranteed. J. H. Keefer, Millersburg, Pa.

Eggs for Hatching. Kellerstrass strain (direct). I have eggs from this famous strain of Single Comb White Orpingtons at reasonable prices. Thos. H. Kean, Nantucket, Mass.

Orpingtons—Crystal White (Kellerstrass). The big layers of quality. Breed only one kind, stock and eggs. Send for illustrated catalogue. Crystal Poultry Yards, Fredericktown, Mo.

White Orpingtons. My Orpingtons pay because they are bred to lay, have the size and "Sta-White" color. Eggs reasonable. Satisfaction guaranteed. H. A. Snyder, Tampico, Ill.

Kellerstrass White Orpington cockerels and eggs. Peggy and 221 egg strains $5.00. Utility Strain $3.00 per 13 eggs. L. Lewis, 607 No. Fountain Ave., Springfield, Ohio.

White Orpington Eggs, $3.00 for 15, from pen headed by 9-lb. cockerel and 8 and 9-lb. hens, $5.00. Robert Brooker, Nevada, Mo.

Orpingtons—All single-comb varieties. Won 120 prizes at three state shows. Special bargains in pens, trios and cockerels. Boomgaarns Farms, Box F, Humboldt, Nebraska.

Buy Crystal White Orpington eggs, ten to fifty cents each, of a specialist who is deep in the show business. Winners at the largest shows in Iowa. C. Hummer, Keswick, Iowa.

Kellerstrass White Orpington eggs and baby chicks from prize winners, for sale. Greatest winter layers. Most popular breed of today. Dr. Walter Turman, Marshall, Ill.

Kellerstrass Crystal White Orpingtons. I have some fine pens, farm-reared stock. Eggs in season. Prices right. Satisfaction guaranteed. Frank F. Peck, Bainbridge, N. Y.

S. C. White Orpingtons, blue ribbon winners. If you need any eggs be sure and drop me a card before you bu. I guarantee satisfaction. O. F. Stark, Boxholm, Iowa.

Kellerstrass Strain Crystal White Orpingtons from his $30.00 matings. "We have the goods." Write for prices. M. A. Clark & Son, 25 Myrtle St., Redlands, California.

Kellerstrass Crystal White Orpingtons at live and let live prices. Eggs and chicks. Literature free. Orpington Club member. S. L. Hurley, Box G, Elmira, New York.

Kellerstrass Crystal White Orpingtons. Eggs, $3.00 per setting; two settings, $5.00, from Pen 1. All others $2.00 per setting. James L. Robinson, Route 1, Smithville, Mo.

Kellerstrass Orpingtons. Eggs, $1.50 per 15. Fishel White Wyandottes; eggs, $1.00 per 15. Satisfaction guaranteed. Safe delivery. Walter Steidinger, Forrest, Illinois.

Kellerstrass and Jackson White Orpingtons. Direct blue ribbon winners, $5; others $2 and $3 setting. Black Orpingtons, $2 a setting. Henry Fisse, Jr., Kokomo, Ind.

A $100 White Orpington Pen. Eggs from $30.00 matings direct from Kellerstrass; circular; eggs, 8c each and $5.00 per 15. Orpington Farm, Niobe, N. Y.

Royal Strain White Orpingtons. Snow white, ideal layers. Baby chicks, $6.00 for 12. Eggs, $2.50 for 15. Buy the best. Royal Yards, J. H. Irons, Elmira, N. Y.

Kellerstrass White Orpingtons. Pullets and yearling hens, $2.00 each. Also mate pens and trios. Eggs at $10.00 per 100. Mrs. Ad Hanna, Big Rock, Ill.

For Sale. S. C. White Orpington hatching eggs, $3.00, 15; birds score 95 points. Utility, $1.25. W. H. Harbison, 338 S. Douglas Ave., Springfield, Ill.

Quality White Orpingtons. Win every year. Male birds, $3.00 up. Eggs reasonable in season. Whatever you need we have it. C. Colby, Hillsboro, Ill.

Single-Comb White Orpingtons of the better sort. Won first honors at the great Illinois state fair three years in succession. Troy Medaris, Bement, Ill.

Kellerstrass Crystal White Orpingtons. Eggs $2 per 30 up. I have stock from eggs bought of Kellerstrass at $2 each. F. R. Brill, Hampshire, Ill. Box 70.

Extra fine S. C. White Orpingtons. We are booking eggs for early delivery. Write your wants. Granite State Poultry Yards, Box 52, Nashua, N. H.

S. C. White Orpingtons. Selected eggs, from pens of beauties, $2.00 per 15. $10.00 per 100. Packed to hatch. T. H. Burke, No. Bennington, Vt.

White Orpington trios, $7.50; pens, $10. Cockerels from $3 upwards. Now is the time to order from Robert Broeker, Nevada, Mo.

Single Comb White Orpington eggs for sale, $3.00 to $5.00 per 15. Mrs. Chas. E. Huested, Nassan, Rens Co., Box 84, N. Y.

Kellerstrass Crystal White Orpington cockerels, $2.50 each; eggs, $2 per 15, or $6 for 50. Robert C. Boss, Route 9, La Porte, Ind.

Crystal White Orpingtons, scoring to 95½. Thos. Brogden, Rush Lake, Wis.

Plymouth Rocks—Barred

Brooks Pedigreed Barred Plymouth Rocks are today leading their class in both the International Egg-Laying Contest now being held in Missouri and Connecticut. Why? Because they have been trap-nested for several generations solely to increase their egg production and they are showing the development of this quality. High grade pedigreed cockerels for sale from $10.00 up. Eggs for hatching in season. Satisfaction guaranteed. Brooks Sanitary Hennery, Morgan Park, Illinois.

Barred Rocks, bred to lay and do lay. Healthy, vigorous stock. No cull matings. Every bird a producer. Eggs for hatching 15, $1.00; 50, $3.00; 100, $5.50. Hens and Pullets $1.50 to $2.00 each. The Fowlers, Box 264, Youngstown, Ohio.

150 Barred Rock cockerels. Bred from best stock. Big, rangy fellows, that will do you good. Mammoth Bronze turkeys, Giant Jumbo King strain, some fine ones. Italian bees and queens; great workers. Write C. Henry Clymer, Bertram, Iowa.

Barred Plymouth Rocks. 50 Barred Rock cockerels from my best pen, headed by Jumbo, Jr. Jumbo has never failed to win in any show room. Satisfaction guaranteed. Don't miss this bargain. Order today. $5.00 each. Eggs, $2.00 for 15. E. H. Wegener, Red Bud, Illinois.

Barred Plymouth Rocks. Eggs, yard A, $4 per 15; yard B, $2.50 per 15. White Mammoth Turkeys, largest in country, weighing 51 lbs., eggs 25c each. Write for stock prices. Geo. W. Wingo & Son, Route 9, Mayfield, Ky.

Barred Rocks, Ringlet strain, 100 large, husky cockerels for sale at prices that will move them. Also some good hens and pullets. K. I. Miller, Box 5, Lancaster, Mo.

For Sale—Standard bred Barred Rocks. Thompson and Bradley strain. Show birds or breeders. write me your wants. G. M. King, Route 1, York, Pa.

Barred Rocks, 1st cock, 1st cockerel, 3d hen at two leading shows, 1912. Shipments subject to approval. Special mating. Eggs, 15, $2.00; 30, $3.00. Cockerels, $2.00. Standard Bred Poultry Farm, Pimento, Ind.

"Ringlets," Ringleys "Ringlets." Rocks that lay and win. Narrow bars long, deep bodies, yellow legs. Cockerels for breeders. Satisfaction guaranteed. Order Eggs. Harry Welch, Rt, 49, Schenectady, N. Y.

Barred Rocks—Thompson, Hawkins and Bradley strains. Madison Square winners. Shipped on trial, "approval," or C. O. D. Pullets and cockerels $1 each. Mrs. Edith Chelton, Landonville, Maryland.

Thompson's Imperial Ringlets, Barred Rocks exclusively. Heavy winter layers; eggs furnished January and February, $2 per 15. Young and old stock for sale. W. F. Wright, Sr., Spirit Lake, Iowa.

Congdon's Barred Rocks, bred for utility and beauty, $3,000 invested; 146-acre farm; 1,000 birds for sale. Eggs in season. Write your wants. Booklet free. W. A. Congdon, Box A, Waterman, Illinois.

If you want the best Barred Rocks you ever saw, buy of me; they are bred right and are winners. Stock always for sale. Eggs, 15, $3.00; 30, $5.00; 100, $10.00. R. H. Vanderhoof, Newton, Ill.

Barred Plymouth Rock Eggs, 15, $1.00; $5.00 per 100. Our customers are not disappointed when chicks are grown, 16 years breeding. Catalogue free. S. V. Latcham, Woodward, Iowa.

Ringlet Barred Rocks. Won silver cup for best Barred Rocks, Championship medal for best hen; all breeds competing. Eggs, $1.00 and $2.00 per 15. H. S. Brendle, Robesonia, Pa.

Barred Rock Eggs for hatching from choice high scoring stock. Deep clear barring. Large and vigorous. $1.00 per 15; $2.50 per 45; $5.00 per 100. M. D. Porter, Vandalia, Mo.

Barred Rocks. Latham's pullet line, 4 grand pullets and extra fine cockerel, prepaid to you, $10.00. Satisfaction guaranteed. Eggs in season. Oscar Smith, Plainfield, Iowa.

Ringlet Barred Plymouth Rocks, hatching eggs (both matings). Day-old chicks. Mating list free; infertile eggs replaced. A. W. Kopfstein, 1068 E, 79 St., Cleveland, Ohio.

Barred Rock Eggs for hatching from pens containing choice show and breeding birds. Cockerels or pullet matings. $3.00 for 15 eggs Henry Ames, Russell, Ill.

Barred Rocks, Bradley strain. Prize winners. Cockerels, $1 to $5. 15 eggs $1.50, 100 $3.50. Crystal White Orpingtons, Duroc Jerseys. P. F. Wood, Wamego, Kan.

Blue Ribbon Barred Rocks. Cockerels for sale; big fellows; no better laying strain. Eggs from prize winners, $2.00 per 16. Sunny Slope Nursery, Hannibal, Missouri.

Coons' Barred Rocks, won three firsts, two seasons. Special five entries, Catskill, December, 1911. Stock and eggs for sale. Frederick Coons, Greendale, N. Y.

Plymouth Rocks, Barred. Bred to lay, Parks strain direct. Eggs, $1.50 for 15, $7.00 per 100. Cockerels for sale now. Mrs. Fred Moore, Altoona, Kan.

Page's Barred Rocks noted for utility and prize winners, best pens $10.00. Farmers pens, 30 eggs, $2.50. Mating list ready. S. H. Page, Waverly, Iowa.

Barred Plymouth Rocks. Thompsen's cockerel mating and Wales pullet mating, distinct. Stock for sale. Eggs, $2.00 per 15. W. P. Ruark, Kramer, Ind.

Twenty-five Barred Rock cockerels go at $2.50 each. Large fellows; shipped on approval. I won Iowa state cup year 1910. W. E. Cowan, Waterloo, Iowa.

Barred Rock Eggs. 22 years experience and large alfalfa range. Produce No. 1 quality at minimum cost. Write wants to Amil Burkman Roscoe, Ill.

Barred Plymouth Rocks, five pens mated; eggs, $2.00, 15; $8.00, 100; 25 cockerels and a few females for sale. H. Loutzenhiser, Route 2, Danville, Ill.

Fine Barred Rock Cockerels, 3 for $5.00. Scored birds higher. Prize winning stock for years. Circular free. Mrs. L. W. Heller, Ladora, Iowa.

Barred Plymouth Rocks. Buy of me, get the benefit of my years experience in the breeding and judging of them. W. S. Russell, Ottumwa, Iowa.

Barred Plymouth Rock cockerels, $2. Pullets and hens, $1. Prize-winning and good laying strain. Eggs, setting $2. Geo. L. Spitze, Warsaw, Ill.

Barred Plymouth Rocks—Eggs for sale. Are you looking for bred-to-lay Rocks? Write at once for mating list. H. A. Caldwell, Canton, Ill.

Ringlet Barred Rock eggs, bred from E. B. Thompsons direct; 13, $1; 26, $1.75; 50, $3; 100 lots, $5. E. H. Barden, North East, Pa.

Barred Rocks of Quality, Jersey cattle. Winners at pail and show ring. Stock for sale. Jno. F. Bruns, Box F, Concordia, Mo.

Plymouth Rocks—Columbians

Allen's Columbian Rocks. World's champions. Empire strain. Clean sweep at Madison Square Garden; winners at Philadelphia, Boston, Buffalo, New York. Mating list out. S. C. Allen, Mgr. Valley View Farms, Orchard Park, N. Y.

Plymouth Rocks—Buff

Buff Rocks Eighteen years exclusively. More prizes, six consecutive years, New York State Fair, than all competitors. Stock for sale. Eggs prize mating. Three dollars. Edgewood Farm, Ballston Lake, N. Y.

Buff Rocks—Progeny of "Poley's World's Best." Bred for utility as well as fancy. Unequaled winter layers. Eggs, $1.50 and $2.00 a setting. Satisfaction guaranteed. M. H. Davidson, Fishkill-on-Hudson, N.Y.

Buff Rocks. Salyards Celebrated. Winner Kansas City, St. Louis, Des Moines. Bargains in hens. Eggs for hatching, very choice matings. Catalog. R. S. Salyards, Iowa Vice-Pres, Box M, Lamoni, Iowa.

Eggs from prize winning Buff Rocks, $2.00 the 15; 1st cockerel, 1st, 2d, 3d, 4th pullet, Jeffersonville. 1st cockerel, 2d pullet, 1st pen, Piqua, Ohio shows. The Buff Rock Poultry Farm, Jeffersonville, Ohio.

Buff Rocks, good color and shape. Farm raised; vigorous. Stock at reasonable prices. Eggs from select matings, $2.00 per 15. C. D. Powell, Vermilion, Ohio.

Buff Rocks exclusively. 50 selected cockerels, $2.00 to $3.00 each. Stamp for descriptive colored calendar. Branch Valley Poultry Yards, Route 2, Telford, Pa.

Buff Rocks, Eggs and Chicks. Best results at reasonable prices. Safe delivery guaranteed. Send for mating list. E. A. Meyers, Route 9, Mt. Sterling, Ill.

North's Buff Rocks, winners at Buffalo, Rochester and Waverly. Stock for sale. Eggs, $1.50 and $3.00. Write for circular. D. P. North, Waverly, N. Y.

Notice—They win the blue. Just a card and let me tell you how I mated my winter laying Buff Rocks. Write today. N. E. Swedburg, Hildreth, Neb.

Buff Plymouth Rock Eggs for sale. The kind that will pay you because they pay me. Prices friendly. Write me. William A. Hess, Humboldt, Kan.

Two fine Buff Rock cockerels (one a prize bird) and four pullets from prize winning stock. Eggs, $2.50 per 15. Mr. B. T. Buchanan, Okmulgee, Okla.

Buff Rock Eggs for sale, from vigorous, heavy laying strain. 75 cents per setting or $3.50 per 100. Future orders taken. Frank Ware, Butler, Ill.

Golden Buff Plymouth Rocks. Bargains in cockerels. Fifteen years a breeder. Silver cup winners. L. B. Hanna, Austin, Minn.

Plymouth Rocks—White

High class White Rocks. Fishel strain. Direct. Eggs from wonderful layers. $1.00 per 15; $3.00 per 50; $5.00 per 100; $9.50, 200. Also Fishel White Indian Runner Duck eggs. Henry Heitkamp, New Bremen, Ohio.

White Plymouth Rocks—Won 23 blue ribbons the past season. 300 birds for sale, $1.50 up. My April pullets laid in September. Special discount on egg and baby chicks for early orders. Write H. H. Haskin, Box Y, Robinson, Ill.

U Want a White Plymouth Rock. Blue ribbon winners at St. Louis, Mo. State Fair, etc. To introduce same will sell one setting from selected matings at $2.00. Catalog free. Otto M. Roth, Box C, Kirkwood, Missouri.

White Rocks (Fishel), pens, trios, pairs; cockerels, three to fifteen dollars. Pullets 1st and 2nd; cockerel 1st. Binghamton Exposition. Eggs, $3.00 setting. Dr. J. H. Martin, Binghamton, N. Y.

White Rocks; eggs, $2.50 per 15. Choice cockerels, $2.50 to $5.00. Every bird bred from Rochester, Buffalo, Boston, Chicago winners. Roseland Poultry Yards, Branchport, N. Y.

Wilson's White Plymouth Rocks, winning at Minneapolis again, demonstrated their quality. Start right. Book now. $1.50 per 15, $6.00 per 100. Wheatland Farm, Owatonna, Minn.

White Rocks exclusively (Fishel). Eggs from snow white farm raised, choice matings, $2.00 per 30. Cockerels, $1.75. Satisfaction guaranteed. W. H. Dougherty, Sellersburg, Ind.

White Plymouth Rocks. Eggs at $1.50 per 15; $6.00 per hundred. Young and old stock scoring 90 to 94 at $2.00 and $5.00 each. Benj. Overbeck, Box F, Edwardsville, Ill.

White Rocks; males, $3.00, two $5.00; females, $2.00, six $10.00. White Holland Turkeys. D. E. Gray, Specialist, Route 5, Goodland Sta., N. Y.

White Plymouth Rocks. Try our eggs, $1.00 and $2.00 per 15. They will please. Breeders and young stock for sale. Rose Lawn Poultry Yards, 238 East Main St., Middletown, N. Y.

Floyd Bend White Rocks. Flock averaging 30 hens produced 5,250 eggs past year. Choice cockerels, $5.00. Eggs, $8.00 per hundred. Lucas Bros., Alton, Iowa.

White Plymouth Rock Eggs for hatching, from large, heavy laying, pure white hens; pens headed by Fishel cockerels. $2.00 per 15. J. LeFevre, Valhalla, N. Y.

The L. A. Doolittle White Plymouth Rocks. Before you buy, write for prices on baby chicks and eggs for setting. L. A. Doolittle, Route 2, Waukegan, Ill.

White Plymouth Rock Eggs, $2.00 for 15, from pen which took all prizes in class at Windom and Madelia shows. Will Curtis, St. James, Minn.

Write D. J. Ward, Severance, Kan., for choice White Plymouth Rock Pullets.

Polish—Black

White-Crested Black Polish. Z. T. Turner, Eleroy, Ill., breeders of World's Fair White-Crested Black Polish. No better strain. Catalogue free. Five other exhibition breeds.

White Crested Black Polish, Snowball strain. Handsome mating list free. Booking orders now. Snowball Poultry Yards, 908 Rivermeed Ave., Ft. Wayne, Ind.

Rhode Island Reds

Rose-Comb Rhode Island Reds, American Beauty strain. Most popular and practical fowl for farmer and fancier. It's no gamble to give mine a trial. My winnings free for the asking. Prize stock $2, $3, $5 per 15. Utility, $1.50. Address A. V. Davis, Ridgefield, Conn.

Your Chance. Single Comb Reds bred to lay and win for years. Hens, pullets with fine color and type mated with exhibition males, kept for reserve. $1.00 per 15 eggs. Four best exhibition matings, $5.00 per 15. Cockerels for sale. Rev. F. Schoenbohm, Denver, Iowa.

Red Quill Rhode Island Reds will improve your flock, by giving you large, vigorous birds, easy to raise, quick growers, great layers. None better. Large, vigorous cockerels, brilliant red, either comb, $2.00 each. Cacy's Farms, Trimble, Ohio.

Rose-Comb Rhode Island Reds Fine utility cockerels, $1.50, $2.50. Parent stock direct from Cornish. Fine layers. White Holland turkey cockerels, $5, from first prize stock. Chicago and Indianapolis. Mrs. Geo. Shepard, Goodland, Ind.

R. C. R. I. Reds. Now booking orders for eggs, from choicest mating, $5.00 per 15. From very select mating, $3.00 per 15. From utility stock, $1.50 per 15; $6.00 per 100. D. E. Hall, Ilfo member A. P. C., Route 2, California, Mo.

Sprague's Reds, Rose Comb exclusively. The best money and experience can produce. Eggs for hatching, one-third what others charge for same quality. Circular free. Poultry Sprague, Maywood (near) Chicago, Illinois.

Rose-Comb Rhode Island Red cockerels of the Kaufman-Windheim strain. Also white and fawn Indian Runner ducks of the Sawyer strain. Prices reasonable if taken soon. Mrs. W. S. Hamilton, Clarksdale, Mo.

Rose-Comb Rhode Island Reds exclusively. Eggs from high-scoring and bred-to-lay stock (Tuttle strain) $1.50 for 15 eggs, $2.50 for 30. Orders booked now for later shipment. A. D. Krebill, Donnellson, Iowa.

I have for sale a nice lot of Single-Comb Rhodo Island Red cockerels. Remarkably free from shafting and entirely free from white in wings or tail. Price $1.50 to $2.50. Wm. F. Hoppe, Waddams Grove, Ill.

Single Comb Rhode Island Reds. Eggs from stock scoring 91 to 93, $2.00 per 15; utility stock, $1.00 per 15. Cockerels, $1.50 each. Circular free. Red Bird Poultry Yards, Carlinville, Ill. or Batchtown, Ill.

America's Heaviest Laying Reds. Large, vigorous, pedigreed breeders. Records from 200 to 284, in single, and 291 in rose-comb. Extras to cover infertility. Charles Sweet, Route 4, Swanton, Maryland.

America's Heaviest Laying Reds. Large, vigorous, pedigreed breeders. Records from 200 to 284, in single, and 291 in rose-comb. Extras to cover infertility. Charles Sweet, Route 4, Swanson, Maryland.

Bailey's Single Comb Rhode Island Reds (Tompkins-Seaman strain). From Madison Square and Boston winners. Eggs, $3, $2, $1 for 15. Circular free. B. M. Bailey, 51 Maple Ave., Napanoch, N. Y.

Single-Comb Rhode Islands. Eggs, $2.00 and $3.00 per 15. From beautiful stock. Sale Cocks and Cockerels. H. V. Reynolds, Manager. Peerless Yards, 2186 East 43rd street, Cleveland, Ohio.

Thoroughbred Rose and Single-Comb Rhode Island Red cockerels and pullets. Bred from 93 to 94 point males, and hens trap-nested for superior egg production. D. J. Bliss, Carthago, Mo.

Reds, S. C. and R. Combs. Special low price on fine cockerels and pullets. $1.50 to $5.00. Eggs for hatching, $1.50 per 15; $6.00 per 100. Herman Reiners, 757 Mount St., Davenport, Iowa.

Reds, both combs, yards headed by Owen Farms males, females from winners at Missouri State, Kansas City, St. Joseph, Omaha. Mating list. John Skillman, Platte City, Mo.

Watson's celebrated strain. Rose-Comb Reds. Golden Princess laid 291 eggs in year; 50 hens averaged 240 in year. Cockerels and eggs. Book free. Ira Watson, Box C, Fredonia, N. Y.

Rose Comb Reds—Kaufman and Windheim strains. Write for matings and winnings. Satisfactory hatch guaranteed. Eggs, $1.50 and $3.00 per 15. Forrest Roberts, Salem, Mich.

Rose Comb R. I. Reds. Eggs from high scoring birds, two dollars per setting. Fawn and White Indian Runner Ducks, white eggs, dime each. J. A. Alleshouse, Trenton, Mo.

Rose Comb Rhode Island Reds. Good breeding cockerels, two to five dollars. Eggs for hatching, one to five dollars. Winning stock. Catalog free. Orr & Dick, Arcadia, Ind.

Single Comb Rhode Island Reds. (Tompkins). Large fine reds. Eggs for sale from grand exhibition or utility pens, $1.00 to $3.00 per 15. C. O. Yost, Route 4, Winchester, Ind.

Rose Comb Reds bred for exhibition and utility. Winners head best pens. Eggs and baby chicks a specialty. Also White Leghorns. Franklin Fox, Pipersville, Pa.

Rose and Single-Comb Reds—Real Reds, not Buffs. Old and young stock, with score cards, at $1.50 up. Pekin ducks, stock and eggs. Fred Oertel, Box 111, Brighton, Ill.

Try Poultry. Will sell eggs, high-scoring pens. Single-Comb Rhode Island Reds, $3 sitting. You get best laying and show stock. Write me. B. C. Knodle, De Kalb, Ill.

Hall's Single-Comb Rhode Island Reds are the "stay red" kind. They took Michigan by storm in 1910. None better. Bargains in stock. B. F. Hall, Jr., Lansing, Michigan.

Single Comb Rhode Island Reds. If you want more show birds and better layers, introduce our strain. Send for circular. Forecastle Farm, Burnt Hills, N. Y.

Single and Rose-Comb Reds and Barred Plymouth Rocks. Pullets and cockerels for sale. Eggs, $3-15. Prices and quality right. Crosby Bros., Momence, Ill.

Eggs from high scoring S. C. R. I. Reds, score 92 to 94½ by Judge Tood. Eggs, $3.00 per 15. Satisfactory hatch guaranteed. H. M. Lange, Grafton, Iowa.

Single Comb Rhode Island Reds. Prize winners. Eggs, $5.00, $2.00 and $1.00 per setting. Range, five dollars hundred. Mrs. J. D. Morley, El Dorado, Kan.

R. C. R. I. Reds. Shape and color specials, won wherever shown. Bred to lay. Eggs $1.00 to $5.00 for 15. Edgedale Poultry Plant, Wheeling, W. Va.

Thoroughbred Rose-Comb Rhode Island Reds. Good laying strain. Eggs from scored pen, 15 for $3; utility, $1.75. C. C. Mason, Route 8, St. Joseph, Mo.

Custer's Single Comb Reds won 23 prizes on 29 entries at four different shows this winter. Settings, $1.00, $2.00 and $3.00. Oliver Custer, Xenia, Ohio.

Reds, both combs. You can pay more, but you get no better blood. Circular for chicks and eggs. J. C. Hamilton, Route 2, Box 110, New Castle, Pa.

Single-Comb Rhode Island Reds. Some well bred birds, at right prices. Cockerels or pullets. Eggs in season, $2. T. F. Higley, Fairfield, Iowa.

Reds, Single and Rose Comb, prize matings. Large, vigorous, rich colored, eggs. $6.00, 10; $20.00, 100. Guaranteed. E. E. Wells, Cohoes, N. Y.

R. C. Rhode Island Reds, prize winners for 6 years. Egg orders filled promptly. Send for mating list and prices. H. G. Poehling, LaCrosse, Wis.

R. C. Reds, high in quality. Write for prices on stock and for mating list. Guarantee satisfaction. W. J. Cocklin & Son, Rising City, Neb.

Get the best—Dark Red Rose Comb Reds—winners of 50 premiums, eggs $2.00 and $3.00 per 15; infertiles replaced. O. T. Grimes, Hunter, Okla.

Rose Comb Rhode Island Reds. My hens are bred to lay. Good size and color. Eggs at reasonable prices. Dr. M. B. Reed, Cromwell, Iowa.

S. C. R. I. Reds. My first prize cock bird has never been beaten. Eggs, $1.00, $3.00 and $5.00. Frank S. Culp, Box 99, Butler, Ohio.

Spanish—Black

White-Face Black Spanish—Eggs 15 for $1.50, 30 for $2.50, 100 for $5. Good stock for sale. Louella E. Jaqua, Portland, Indiana.

Wyandottes—Golden

Golden Wyandotte breeder, 12 years. Have two large range pens. Good laced blocky birds. Eggs, $2.00, 30; $3.00, 60. Gerhard F. Hellman, West Point, Iowa.

Wyandottes—Partridge

Partridge Wyandottes with a national reputation won most all prizes Kansas State Show two years. I have the right color, shape and size, so they cannot help but win. A dandy flock in a five acre orchard. Eggs, $1.50 for 15; $2.50 for 30. C. A. Page, Salina, Kan.

Elm Grove Poultry Farm. Mahogany strain Partridge Wyandottes. Matings scoring to 94½. Satisfaction guaranteed. Eggs, $3.00 per 15. F. E. Carpenter, Cedar, Iowa.

Wyandottes—White

White Wyandotte cockerels for sale. The typical Wyandotte sort, broad, deep body, short, stout shanks, 9 to 10 pounds each. Winners in shows this year. Only a few left. Price reasonable. Hiram Long, Edgerton, Ohio.

Penfield's Prize-taking White Wyandottes. Big winners at such shows as Minneapolis and state fairs. Lay in the coldest weather. Eggs for hatching from free range. Standard bred stock. Write us. H. J. Penfield, Box A 324, Hudson, Wis.

White Wyandottes. Prize winners at the great Williamsport show. Nothing nicer than a flock of pure white birds. Plump, quick maturing, and great layers. Eggs, $1.50 per 15. Write me your wants. Jno J. Hafner, Box J, Woolrich, Pa.

Stay White Wyandottes that carry blood of 200 to 272 egg ancestry, fine combs, yellow legs, red eyes and lobes; eggs, 15, $1.50; 30, $2.50; 50, $3.75; 100, $6.00. Satisfaction guaranteed. Calvin Norman, Route 2 F, Dexter, Mo.

White Wyandottes. For winter layers and quality there are none better. Write us if you want stock. Eggs or day old chicks. Absolute satisfaction guaranteed. Cederdahl Poultry Farm, Owatonna, Minn.

White Wyandottes. Eggs and choice stock. 1909 to 1912 at Kansas state poultry show. Won 18 prizes. Eggs, $4.00 per 100. Send for show record and prices. Theo. B. Young, Route 1, Box 86, Wichita, Kan.

500 White, Golden and Columbian Wyandottes for sale. Splendid breeding and show birds. Eggs for batching from selected stock. Mrs. D. C. Jones, Nashotah, Wis.

White Wyandottes that win the blue. Missouri and Illinois winners. Alton pullet, scored 96. Staunton pullet, scored 96½. Exhibition eggs, $3.00; Utility, $1.50. B. Pavey, Bunker Hill, Ill.

Right now, we have some special bargains of a few show room specimens in White Wyandottes. If interested write us. All orders on approval. Wyandotte Ranch, Kiesling, Wash.

Top-Notch White Wyandottes—Show birds. Fine utility stock or high-grade breeders at rock bottom prices. If you want quality, write us. Schmied Bros., Route 2, Mt. Healthy, Ohio.

White Wyandottes that win. Won at Delevan and Waterford, Wis. A few cockerels for sale at prices that are right. Egg orders taken now, $3. H. C. Berger, Waterford, Wis.

White Wyandottes that have won at all the leading shows and will win for you. Eggs from prize winning matings, $3.00 and $5.00 per 15. R. S. La Rue, Bellfontain, Ohio.

Thoroughbred White Wyandotte Eggs, $1.50 and $3.00 per setting 15. Baby chicks. Show and heavy egg type combined. A square deal. Robert Fetrow, Etters, Pennsylvania.

White Wyandottes. Been breeding them continuously since 1895. The kind that weighs, lays and pays. Send for circular. A. Franklin Smith, Route 9, Ann Arbor, Mich.

High Class White Wyandottes. Fine layers. Eggs from select matings, $1.25 per 15; $2.00 per 30. Cockerels, $2.00. Pullets, $1.50. M. G. Wells, Sellersburg, Indiana.

Snow-White Wyandottes exclusively. Farm range, splendid stock. Satisfaction guaranteed. Eggs, $1 per 15, $4 per 100. Mrs. Christian Oveson, Osage City, Kansas.

White Wyandottes—Choice cockerels from blue-ribbon winners; they will please you. Eggs from choice matings after February 1st. Harley R. Stick, Ridgeville, Ind.

White Wyandottes. Cup winners and great egg producers. Nine firsts at two shows. Line bred for 12 years. Mating list free. Alden Rehm, Orrville, Ohio.

Utility White Wyandottes, laying during zero weather. Won 1st hen, 2nd cockerel, 2nd pullet, 2nd pen. A. W. Gluesenkamp & Son, Box 58, Batesville, Ind.

Imperial strain White Wyandottes from prize winners. Cockerels, $1 to $3; cocks and pullets, $1; eggs, 100 $5, 15 $1. A. H. Seymour, Swanton, Neb.

Rhode Island Whites, S. C. Reds, White Cornish, Rose Comb White Leghorns. The kind that win, lay and pay. C. W. Knox, Pulaski, Pa.

White Wyandotte show birds for sale. Price reasonable. Ask for my show record and mating list. Otto Peterson, Jr., Rt. 7, Axtell, Neb.

Wyandottes—Silver Laced

Silver Wyandottes. Winners at all the big shows. Philadelphia, Madison Square Garden, New York. Most prizes special for best display. If you need real winning Silvers, write immediately. All will be satisfied. Eggs while they last. Dr. Henry M. Kalvin, Avenue U, and East 15th St., Brooklyn, N. Y.

Silver Wyandottes; won first cockerel first pen; first, second, third pullets at Woodhull; birds scoring 94, 15 eggs, $2.00, $3.00; 30, $3.50, $4.50; 50, $5.00, $6.00. Jas. Roberts, New Windsor, Ill.

Silver Wyandottes—The great egg and table fowl; the breed for fruit growers. Cocks and cockerels, $2 up. Eggs by the sitting or hundred. Circular. Glenoak Poultry Yards, Kinmundy, Ill.

Silver Wyandottes of quality. Prize winners. Best winter layers. Good stock for sale, reasonable. Satisfaction guaranteed. Also some Japanese Silkies. J. F. Spence, Clinton, Iowa.

Silver Wyandottes exclusively for 28 years. Your success depends on your foundation stock. Compare prices and show winnings, then act. M. H. Leidy, R. F. D. 2, Souderton, Pa.

Fifty lusty Silver Wyandotte breeding cockerels, from noted winners, $2 each; just the birds to add vigor to your flock. Hoffman, Allegan, Michigan.

All Varieties

America's finest, pure bred poultry, bantams and waterfowl. All varieties. Winners everywhere. Satisfaction guaranteed. Large fowl and bantam catalogs, each 2c. F. C. Wilbert, Grand Rapids, Mich.

Miscellaneous Poultry

World's Best Rhode Island Reds and Imported White Indian Runner Ducks. My 1st championship pen of Reds this season is headed by 2nd Madison Square, New York, cock, and contains 1st Madison Square pullet, December, 1910, valued at $10,000.00; also 1st, 2nd, 3rd, 4th and 5th Madison Square pullets, January, 1910. The greatest pen of "Reds" ever put together. Write for free catalog. Southern Poultry Farm, Wade Hampton, Prop., Rogersville, Tenn.

White, Buff, Black Orpingtons. Best record, second week Missouri egg contest. Silver cups, two shows, same date, 23 ribbons. Guaranteed show winners, $15. Breeders, $15 trio. Eggs (Cook, Kellerstrass), $5.00, $4.00, $3.00 express prepaid. Eggs any known fowl, $10.00 100. Get "Why I Breed Orpingtons." Dr. Thos. Dietrick, Box S, Washington, N. J.

For Sale—Peacocks, Turkeys, Toulouse and White Embden Geese, Muscoveys, Pekin, Rouen and Runner Ducks, Pearl and White Guineas, Bantams, 24 kinds of poultry; cockerels, all kinds of eggs in season. Reasonable by the setting and by the 100. Dogs, rabbits, fancy pigeons. Write for free circular. D. L. Bruen, Platte Center, Neb.

Poultry Photo Post Card, mating list and catalogue free. Stamp appreciated. Eggs for hatching from "Trio Purpose" White Wyandottes, best for show room, egg basket and market. Mammoth "Rainbow" Bronze Turkeys. "Standard" Indian Runner Ducks. Joseph Shaw, Desk B, Ostrander, Minn.

White and Silver Laced Wyandottes, Rose Comb Rhode Island Reds, Barred Plymouth Rocks, for type, color and quality, can please you. Blue ribbon winners. Located here 36 years. Eggs for hatching. A few cockerels for sale. Satisfaction guaranteed. Wm. Feakes, Grand Junction, Iowa.

Cornish Indians—Thoroughbred exhibition stock. Fine laying strain. 15 eggs, $1.50; 30, $2.50. Baby chicks, $12.00 per 100. S. A. White, Box G, Timberville, Va.

Ten cents each for all eggs; 50 per cent hatch guaranteed White Wyandottes, White Plymouth Rocks, Single-Comb White Leghorns and Black Orpingtons. Eggs from our Madison Square matings, $5.00 per 13. Connisclffe Poultry Farm, Lock Box 19, Tenafly, N. J.

Orpingtons, Black and White. My famous strain, Ring on Top, are the best by test all over the world, no matter how much you pay, you cannot get any better quality and remember at low prices. Large Illustrated catalog free. Wm. A. Heinrichs, Sellersburg, Pennsylvania.

S. C. Reds, White Rocks, S. C. White Leghorns, Buff Rocks and Silver Wyandottes. America'e leading strain. Ilen hatched and reared. Stock, eggs and chicks at right prices. Write your wants before buying elsewhere. Joseph Anthony, Rt. 4, East Berlin, Pa.

Crystal White and Golden Buff Orpingtons. Winning wherever shown. Twenty-five Buff and ten White cockerels, $2.00 up. Sold on approval. Booking orders now for eggs and baby chicks. Stamp brings mating list. Crystal Orpington Farms, Box F, Batavia, Ill.

Outlay Hens. Indian Runner Ducks. Brooks-Walton white eggs strain. Buff Orpington Ducks. Finest obtainable from originator. Drake imported from England. Great layers. White Orpington fowls. Eggs reasonable. Muskoday Farm, Weedsport, N. Y.

Beautiful swans, fancy pheasants, peafowl and other ornamental stock. Also partridges, pheasants, quail, deer, rabbits, etc., for stocking purposes. Send 4c for illustrated descriptive circulars. Wenz & Mackensen, Pheasantry & Game Park, Yardley, Pa.

Maplewood Poultry Farm, Bradford, Ky. High class poultry at living prices. Light Brahmas, White Orpingtons, White Wyandottes, Black Minorcas, Barred Rocks, Rhode Island Reds, Indian Runner Ducks. Satisfaction guaranteed.

White Wyandottes, Dustons. Line bred for 10 years, fit to win anywhere. Heavy layers. Buff Cochin Bantams. Solid buff, correct shape and size. Eggs, $3.00 per 15. Edwin A. Bennett, 103 Remsen St., Astoria, L. I., N. Y.

Mack's Poultry Farm—Breeders of America's best Buff Langshans and Black Orpingtons. Winning all we competed for at the big Toledo show. Eggs, $3.50 for 15. Mack's Poultry Farm, 1817 Navarre Avenue, Toledo, Ohio.

High Class Black Langshans. Pekin Ducks, Mammoth Bronze Turkeys. Winners, Madison Square Garden. Prices reasonable. Satisfaction guaranteed. Circular. Lorenz & Co., Springvalley Farm, Perryville, Missouri.

Buff Leghorns and Kellerstrass White Orpingtons. Prize winners at Altoona, Williamsport, Du Bois, Greensbufg and Ohio State Fair. Eggs from these grand prize winners, $2.00 per 15. R. E. Giles, Coalport, Pa.

Kellerstrass Crystal White Orpingtons. Some prize winners. Also Reds and Minorcas. Standard bred. Eggs, $1.50 to $5 per 15. Life member American Poultry Association. Prof. F. H. Jackson, Middlebury Center, Pa.

Blue Ribbon Winners, Chicago, St. Louis, Indianapolis. Rose-Comb white Leghorns. White Wyandottes; Partridge Wyandottes. Stock for sale. Eggs in season. Max Fries, Rural Route, Warsaw, Indiana.

At Western Carolina Fair I had more White Leghorns and White Orpingtons in winnings than all competitors combined. Eggs, two and five dollars for 15. E. Leon Neel, Boston, Ga., formerly Asheville, N. C.

Langshans, Reds, Wyandottes, Drpingtons and Leghorns at farmers' prices. Good quality, some prize winners. Young stock for sale. Eggs, $1.00 and $2.00 per 15. Ideal Poultry Farm, Indian Springs, Ind.

Single-Comb Leghorn and Single-Comb Rhode Island Red eggs and chicks from good stock. Eggs, $5 to $12 per 100. Chicks, $10 to $20 per 100. Satisfaction guaranteed. C. H. Zurburg, Route 1, Topeka, Ill.

Six Single Comb Breeds. Kellerstrass White Orpingtons, Buff Orpingtons, Rhode Island Reds, Barred Rocks, Partridge Rocks, Black Minorcas. Cockerels, $1.00 to $3.00. N. P. Cronk, Montour, Iowa.

Single and Rose-Comb Black Minorcas. Single and Rose-Comb Reds. Eggs, stock and baby chicks, from Quincy and Campoint, Ill., show winners. South Side Poultry Yards, 601 Jackson St., Quincy, Ill.

Single Comb Buff Orpingtons, Single Comb White Leghorns, Indian Runner Ducks. Exhibition, heavy laying combined. Eggs, $1.00 per 15. Cedar Hedge Poultry Farm, Box 1101, Savannah, Ohio.

Eggs, $1.00 per 15; $2.00 per 40; from thoroughbred Brahmas, Rocks, Wyandottes, Reds, Minorcas, Leghorns, Hamburgs, 19 varieties. Catalog. 29 years experience. S. K. Mohr, Coopersburg, Pa.

Rocks, Wyandottes, Leghorns, Hamburgs, Toulouse, Emden, China gcese; Pekin, Muscovey ducks; white turkeys, guineas; prize-winning stock. Send for catalogue. B. F. Kahler, Hughesville, Pa.

Seiple Poultry Yard. Eggs for hatching from S. C. White Leghorns, Barred Plymouth Rocks and Rhode Island Reds. $5.00 for a set of 13 eggs; $9.00 for 26 eggs. Monroe Seiple, Bethlehem, Pa.

Rose Comb Buff Orpingtons, Golden Wyandottes. My famous line bred strains of winter layers and show winners. Eggs, $3.00 and $5.00. Circular. Dr. R. O. Woodruff, Box A, Waterford, Pa.

Ever Best Strain. Rose and Single Comb Buff, Single Comb Black and White Orpingtons, Black Minorcas, Rhode Island Reds. Eggs for hatching. George W. Ellerman, Box 95, Piqua, Ohio.

50,000 Single-Comb White, Buff and Brown Leghorns, Minorcas, Rocks; baby chicks, eggs; Belgian hares, Collie dogs. Catalogue, stamps. Failing Poultry Farm, La Fargeville, N. Y.

Sixty-Page Catalogue Free. Sixty varieties chickens, ducks, geese, guineas, turkeys and hares. Blue ribbon winners. Stock and eggs for sale. Lowest prices. H. A. Souder, Box 10, Sellersville, Pa.

48 varieties pure bred Chickens, Ducks, Geese, Turkeys, Guineas, Pea-Fowls, Incubators, 6000 prizes. Sale circular free; 100 page catalogue, 4c. Ziemers Poultry Farm, Austin, Minn.

Sixty varieties fancy poultry—geese, ducks, turkeys, chickens, pea fowls, guineas, pheasants, pigeons, ratdogs. New 60-page catalogue, 4 cents. F. J. Damann, Farmington, Minn.

Eggs, Hatching. Imported White Orpingtons. Exhibition Single Comb Rhode Island Reds. Utility Reds. Fawn and White. Indian Runner Ducks. Write E. L. Andrews, Maryville, Mo.

Sixty White Holland turkeys for sale. Also African and White China geese and Black Cayuga ducks. Wanted, White Orpington pullets. Floyd S. Beaumont, Kansasville, Wis.

Barred Rocks, Buff and Black Orpingtons. The kind that will please anybody. Eggs and stock for sale. Write for convincible catalog. Watertown Poultry Farm, Watertown, Ill.

Buff Orpingtons and White Rocks from Indianapolis and Chicago winners. Elegant birds of correct shape and color. F. L. Shaw, Route 1, Hutsonville, Ill. Licensed poultry judge.

Partridge Wyandottes and Mammoth Bronze turkeys. Prize-winning strains. Stock for sale. Reasonable prices. Egg orders booked now. Write Mrs. M. F. Oldfield, Buffalo, Mo.

Bourbon Red Turkey eggs from prize winning stock. White Orpington, Kellerstrass strain. Mottled Ancona. Indian Runner Duck and Pearl Guinea eggs. Geo. Lehman, Lashley, Pa.

America's best egg producers. Rose-Comb Reds, Runner ducks, Toulouse geese, eggs, chicks and ducklings. Give us a trial. Prices reasonable. Frank Kilpatrick, Warren, Ohio.

Rosa Comb Rhode Island Reds, Columbian Wyandottes, winners wherever exhibited; heavy layers. Eggs, $1.00 to $5.00 per 15. Mating list free. A. D. Willems, Minneola, Kan.

Eggs for hatching from line bred trap nested Anconas and S. C. Brown and White Leghorns. Bred for egg production, at reasonable prices. Write to M. L. Miller, Johnston, Pa.

Pure Bred Turkeys, White Embden Geese, Guineas, Plymouth Rocks, Single Comb Brown Leghorns. Prize winners. Eggs for hatchlng; quality; right prices. John Garbee, Billings, Mo.

White-Crested Black Polish, White Wyandottes, White Orpingtons. Breeding pens of the best. Eggs, $5 to $10 per 15. Stock in season. Edward F. Waldron, Dighton, Mass.

Bronze Turkeys, Silver Wyandottes, Mammoth Bronze toms, Silver Wyandotte cockerels from prize winners of size and quality. Orders received for eggs. Wm. Cramer, Dunlap, Ill.

Kellerstrass Crystal White Orpington and Single-Comb Rhode Island Red cockerels, bred from prize-winning stock. Quality and prices right. G. D. Leggett, Carthage, Mo.

White Leghorns, Rhode Island Reds; best registered Berkshires, Hogs and Pigs, Chickens and Eggs cheap. Write quick. E. A. Rogers, Meadowbrook Farm, Box F, Hixson, Tenn.

Thoroughbred Barred Rocks, Reds, Pekin, Muscovy, Runner ducks. Homer pigeons, White Guineas. Eggs, $1 up. Stock for sale. Emwood Farm, Route 13, Grand Rapids, Michigan.

Sixty Eggs, $3.00; 15, $1.00; two medicated nest eggs with each order. 26 varieties; poor hatches duplicated at half price. Circular free. Whitney & Son, Triangle, N. Y.

Golden Wyandottes and Single Comb Buff Orpingtons. Fine winter layers, prize winning stock. Eggs, $1.25 and $2.00 per 15. Circular free. John Tuttle, Princeton, Mo.

White Plymouth Rocks, White Holland turkeys, Buff Orpingtons, Indian Runner Ducks. Ten years breeding and exhibiting. Mating circular free. Verne D. Stock, Stockton, Ill.

Illustrated Catalogue Free. Barred and White Rocks, White Wyandottes. Birds and eggs for sale. Bee keepers and poultry supplies. Large stock. H. S. Durby, St. Anne, Ill.

Trapnested White Wyandottes and Kellerstrass White Orpingtons. 227 egg strain, bred from Chicago and Pittsburg winners. Eggs, $3.00 per 15. K. J. Heabler, Attica, Ohio.

Buff Orpingtons, White Plymouth Rocks. Frank Meek, breeder and exhibitor. Winners in the great Little Rock Show. Eggs, $3.00 and $5.00 per 15. Argenta, Ark.

Stock, eggs, baby chicks. From winners at Springfield, Jacksonville, Pittsfield, Illinois, 1911. Write for circular. Southern Slope Poultry Farm, Box A, Jacksonville, Ill.

Special for February, 12 White Langshans or Buff Rock females, $13.00. 15 eggs, $1.25. M. B. Tou, $5.00. Superior quality. Mrs. L. Mumpower, Chillicothe, Mo.

White Crested Black Polish, S. C. Black Minorcas and Buff Wyandottes. Stock for sale. Eggs, $2.00 per 15. Satisfaction guaranteed. Henry Yaggy, Woodburn, Ind.

Buff Orpingtons and Barred Rocks. Winners Missouri State and other large shows. Eggs, $2.50 to $5.00 per 15. Satisfaction guaranteed. J. L. Gallatin, Amsterdam, Mo.

Doyle's Two Egg Machines, Single Comb Black Minorcas and Indian Runner Ducks. Cockerels, hens and drakes for sale. Eggs in season. John Doyle, Center, Missouri.

Black Langshans, Buff Orpingtons, Single Comb Rhode Island Reds. Winners of 96 ribbons. 15 eggs, $2.00. Baby Chicks, 25c. C. R. Smith, Burnt Prairie, Illinois.

Write Brock Bros., Mill Shoals, Ill., for eggs from high grade prize winning Black Langshan, Light Brahma and S. C. Rhode Island Reds. Prices reasonable.

Orpingtons, Single Comb, Buff, Black and White. Cockerels, $2.00 to $5.00. Pens, $10.00 to $15.00. Eggs, $2.50 for 15. Elk Ridge Poultry Yards, Sheller, Illinois.

Eggs, setting or hundred lots. Barred Rock, Buff Orpingtons, Reds, Indian Runner Ducks. Also Pheasant eggs. Stock for sale. Julia E. Wise, New Market, Iowa.

Rhode Island Reds, White Orpingtons (Kellerstrass), Houdans. Winter layers. Stock; eggs for hatching; trios. Write wants. D. S. Brenneman, Council Bluffs, Iowa.

Good bargains in Barred Rock pullets, Buff Orpington and Rhode Island Red cockerels. Indian Runner Ducks and fancy pigeons. Julia E. Wise, New Market, Iowa.

State Fair, Rochester, Buffalo, winners. Columbian Wyandottes. Barred Rocks, Buff Leghorns, Bronze turkeys, Rouen ducks. A. G. Barlow, Box 6, Medina, N. Y.

S. C. R. Reds, White Orpingtons, W. Leghorns, cockerels and pullets. Eggs for hatching, also haby chicks. H. B. Eastman, Route 4, Horseheads, N. Y.

S. C. White Leghorn Eggs, also Barred Rocks. $1.00 up. Chicks, 15c. From high scoring birds. Free circular. Wm. Kotthoff, Jennings, Mo., St. Louis Co.

If you want Orpingtons, Reds, Leghorns, Wyandottes, Rocks; males or females; we can save you money. Write us anyway. Lee Harris, College View, Neb.

For Sale—Single Comb White and Buff Orpingtons. Cocks, cockerels and pullets. Eggs and baby chicks in season. H. E. Poseley, Stewart, Minn.

Best for farmer or fancier. Eggs from prize winning, special winter laying beauties, $2.00 per 15; $10.00 per 100. L. D. Van Rensselaer, Kent, Ohio.

Barred Rock, Single Comb Brown Leghorn eggs from fine stock, 15, $1.00; 100, $5.00; 26 years a breeder. Ed. B. Murphy, Box 9, Carmel, Ind.

White Indian Runner Ducks, Fishel strains, trio, $25.00. Eggs, $4.00 per 12; $7.50 per 24. Henry Schowe, Jr., New Bremen, Ohio.

Bargain Prices. All leading varieties land and water fowl. Large picture in colors and price list mailed for 10c. P. G. Shelly, Florin, Pa.

Toulouse Goose Eggs, Runner Ducks, Rose Comb Reds eggs, stock and chicks. Order early. Frank Kilpatrick, Route 4, Warren, Ohio.

Black, Buff, White Orpingtons. S. C. White Leghorns. Write for prices. Buckel Poultry Yards, West Allis, Wis.

Thirty breeds, geese, ducks and chickens. Send 3 cents for a large catalogue. Minkel & Co., Mapleton, Minn.

Chicks

Baby chicks, 10c to 20c; stock, $1.25 to $5; eggs, $5 per 100 up. Rhode Island Reds, both combs. White and Columbian Wyandottes, White and Buff Orpingtons, Pekin, Rouen and Indian Runner ducks, Toulouse geese, Bourbon Red turkeys. Catalogue free. G. A. Mitchell, Dept. B, Ridott, Ill.

Baby Chicks, standard bred. S. C. Rhode Island Reds, Buff Orpingtons, White Wyandottes, Barred Rocks; $2.00 dozen; 25 chicks, $3.75; 50 chicks, $7.50; 100 chicks, $15.00. Guarantee safe arrival 2,000 miles. 15 eggs, $1.00; 30 eggs, $1.50; 60 eggs, $3.00; 100 eggs, $5.00. Martin Michelson, 232 Fifth St., Aurora, Ill.

Chicks, 10c; ducklings, 15c; eggs reasonable. Don't delay booking orders. White Leghorns, Parks Barred Rocks, Pekin and Indian Runner ducks. Both light fawn and penciled. White eggs. Circular. Premium Poultry Farm, Box 62, La Harpe, Ill.

Baby Chicks; lively little fellows from range stock. No egg breaking; cheaper than hatching them. Send 10 cents for progressive, best of all poultry books. Free circular. Eggs and chick boxes. Ohio Hatchery, Bellevue, Ohio.

Chicks from prize winning stock at popular prices. Several varieties. Catalog explains our stock fully. Agents for Chas. A. Cyphers incubators and brooders. Ottawa Country Hatchery Co., Dept. F, Jenison, Mich.

Day old and four weeks old chicks from Crystal White and Buff Orpingtons and Barred and White Rocks. Chicks cheaper if ordered early. Free circular. Fred Brown, 764 W. Broadway, Winona, Minn.

Baby chicks, Wyckoff strain. Single-Comb White Leghorns, mated with cockerels direct from Young, $12 100, prepaid. Eggs, 6c each; any amount. Ohio Valley Hatchery, Ramsey, Ind.

Chicks, leading varieties, hatched in mammoth coal-heated incubators. 100,000 chicks for 1912 delivery, order now. Arrival guaranteed. Catalog free. Walnut Hill Hatchery, Macon, Mo.

100 Baby Chicks, $10.00; 100 eggs, $4.00. Illustrated folder telling all about my 600 heavy laying Single Comb White Leghorns. Ellsworth Shaw, Grand Junction, Mich.

Baby chicks of quality, White Wyandottes, White Rocks and Black Orpingtons from fancy stock. Write for circular. Burnett & Doolittle Hatchery Co., Waukegan, Ill.

Baby chicks, 10c each. Barred Rocks and White Wyandottes. Fawn and white 1. R. Duck eggs $1.00 per 12. Orchard Knob Poultry Farm, Mt. Victory, Ohio.

Chicks, 8 to 15c each. The kind that will grow into prize winners for you. Safe arrival guaranteed. Catalogue and price list free. Blum Hatchery, Chatfield, Ohio.

Baby chicks and eggs for hatching from all leading varieties of vigorous farm ranged birds. Send for circular. Maplewood Poultry Farm, Exeter, Nebr.

Baby chicks of quality. Safe arrival guaranteed. We prepay expressage. Catalog free; 9 varieties. South Kenton Poultry Farm, Kenton, Ohio.

Ducks and Geese

Carlile's White Indian Runner Ducks, best in the West, as demonstrated at the great Los Angeles Show. I have owned practically all the original stock in America and now have the largest and finest flock on the Coast. Eggs, $5.00 per 15; $12 per 50; $20 per 100. First prize matings, $10 per 12. Satisfaction guaranteed. Book orders now and avoid disappointments. J. C. Carlile, Route 4, Box 249, Los Angeles, Calif.

Yoder's Indian Runner Ducks. First and special at Allentown show. My book on Runners 75c, 11 eggs $2.50, 30 eggs $5.00. Yoder's Partridge Rocks and Partridge Wyandottes are prize winners, 15 eggs $2.00, 30 eggs $3.50. Prices and winnings 2 stamps, Box 50, Levi D. Yoder, Dublin, Bucks County, Pa.

Indian Runner Ducks, fawn and white, winners of first and second premiums Tri-County Fair, Sikeston, Mo. No stock for sale. Eggs $2.50 for 13; $4.50 for 26. R. C. Rhode Island Reds. Carefully bred stock. Eggs $1.50 for 15; $2.50 for 30. J. Ed Green, Blodgett, Mo.

Indian Runner Ducks. Light Fawn and White. "Blue Ribbon Winners." in every state and territory. Heavy layers of "snow white" eggs. Shipping more than 1,000 every week for hatching. Booking orders. Don't delay. Catalog free. Mrs. Wm. Harshbarger, Waveland, Ind.

Indian Runners, American standard; English Waltons, pure white. Pens mated by expert judge. Stamp brings mating list, judges' testimony. My new booklet "Road to Success." Mrs. D. C. Teasley, Anderson, Ind.

I have some choice Cayuga Drakes for sale; exhibition birds; you will not find better Cayugas elsewhere in the United States or Canada. Prices reasonable. No more females to spare this season. S. D. Mandeville, Sidney, Ill.

Pure White Egg Strain. Light Fawn and White Indian Runner Ducks. Ringlet Barred Plymouth Rocks, and Single Comb Buff Leghorn eggs. Correspondence solicited. J. W. Van Cleave, New Market, Ind.

Indian Runner Ducks—Fawn and white, high scoring; prize winners; heavy layers. White eggs, $1, $1.50, $3 per 13. Now booking ordera for future delivery. L. R. Street, Webb City, Mo.

White Indian Runner Ducks. Ideal shape and carriage. Prolific layers of large white eggs. Easy to raise. Stock and eggs for sale the year round. Jas. R. Snyder, Box S, Frazer, Mo.

Indian Runner Ducks. True Fawn and White. Finest foundation stock in America. Eggs by setting or thousand; utility and exhibition stock for sale. C. O. Yost, Route 4, Winchester, Ind.

Toulouse & Embden Geese, Indian Runner Ducks, that lay white eggs. That win, too. Stock, eggs, drakes. Instructive circular for stamp. Burt McConnell, Ligonier, Ind.

Toulouse and Embden Geese, Pekin Ducks. Rose Comb White Leghorns and Partridge Plymouth Rocks. Eggs, $2.00 per setting. Standard bred. E. J. Nicholas, Mt. Bethel, Pa.

Bred from winners. Rouen, Colored and White Muscovy, $4.00 per pair; drakes, $2.00. Toulouse gander, $5.00. White Guineas, $2.00 per pair. Ralph Wilson, Bloomville, Ohio.

Mammoth Pekin and Indian Runner Ducks. The birds for the fruit grower. Eggs, $1.50 for 12; $3.00 for 30, $4.50 per 50. Paul & Gordon Griffith, Fredericktown, Mo.

White Indian Runner and Buff Orpington Duck Eggs. Get one of these new breeds. They are mortgage lifters. Instructive circular. French & Hepp, 4358 Umatilla, Denver, Colo.

White Indian Runners, eggs $4.00 per 12. Fawn and White and English, $1.00 per 13; $5.00 per 100. Also Single Comb Rhode Island Reds. Mrs. J. W. Myers, Marion, Ohio.

Indian Runners—Exhibition and utility stock. English imported. Pure white eggs. Lay except at moulting. Per dozen, $1, $2, $3 and $5. A. P. Burk, Camp Chase, Ohio.

Indian Runner Ducks, Light Fawn and White, S. C. B. Leghorns. Eggs for sale. Strictly fresh eggs sent out, guaranteed safe arrival. Mrs. Mary Ryan, Bloomfield, Iowa.

Buff Orpington Ducks. Great layers. Very beautiful. Booking orders. Eggs, $1.50, $2.50, 12. Indian Runner eggs, $1.00, 13. Stock for aale. J. W. Yates, Frankfort, Ind.

Indian Runners, Fawn and White. Pleased customers everywhere. Eggs, $5.00 per 100. A few drakes for sale. Very reasonable. Herman C. Voirol, Woodburn, Indiana.

Fawn and White Runners. White egg strain, $3.00, $2.00, $1.25 per 15. Valuable instructions free to customers. Write, mating list. D. L. Sheldon, Scranton, Iowa.

Indian Runner Ducks, wonderful layers of pure white eggs; also Giant Bronze Turkeys. Prize winners. Write for prices on eggs. B. F. Morgan, Independence, Ind.

Genuine English Penciled White Egg Indian Runner Ducks. Catalog free; $3.00 setting, Parks bred to lay Rocks, $2.00 setting. C. K. Vanderbilt, Lyons, N. Y.

Eggs, Eggs, Eggs. White Indian Runner Ducks (Fishel's), $6 per 12; Rhode Island Whites, best utility, fancy breed, $3 per 15. Fred Foster, Seville, Ohio.

Indian Runner Ducks, pure fawn and white. A grand lot for sale. Get our prices before you buy. We can please you. K. I. Miller, Box 2, Lancaster, Mo.

White Indian Runner Ducks. The kind that win and lay pure white eggs. Eggs, $5.00 per 15. Write for mating list. C. E. Densmore, Springwater, N. Y.

Indian Runner Ducks, genuine English strain. The coming breed for farmers and market poultrymen. Eggs and stock for sale. E. E. Hopkins, Townville, Pa.

Eggs for sale from extra heavy, high scoring Pekin Ducks and White China Geese. Farm raised stock, fertile eggs. Write W. H. Sheka, Grafton, Iowa.

A fine lot of pure bred White Muscovy Ducks for sale. Prices on pairs, $3.50. Eggs for sale in season; dozen, $1.50. Mary Ramsey, Manchester, Minn.

White Indian Runner Ducks. Silver Wyandottes, 1st cockerel, 1st and 4th pullet at Springfield, 1912. Write for prices on eggs. L. J. Ferrill, Farina, Ill.

Indian Runner Ducks—The kind that lay all winter. 150 breeders; eggs, $1 per 15, $5 per 100. Stock prices low. Bernard Reed, McConnelsville, Ohio.

Mammoth Pekin Ducks. Big winners. Best for market and easiest raised. Eggs, $5.00 per 100. Oscar Wells, Farina, Ill.

Turkeys—White Holland

Turkeys, White Holland cockerels and pullets, extra fine, from prize winning stock. Eggs, five dollars per setting of ten. Fertility guaranteed. R. Barrie, Bethel, Kan.

Turkeys—Bourbon Red

Bourbon Red turkeys, big, hardy and domestic as chickens. Grand color. Unrelated trios, $11; toms, $4. Eggs, $3 per 10. Mrs. Clyde Myers, Fredonia, Kansas.

Cording's Bourbon Red Turkeys. Pens not related. Toms fit to head any pen. 48 head. Fishel White Rocks, White Guineas. Enterprize Yards, Wingate, Ind.

Bourbon Red turkeys; toms, $5. Single-Comb Brown Leghorns and Rhode Island Reds; cockerels, $2; eggs in season. E. M. Harter, Route 6, Carthage, Ill.

Buff and Bourbon Red Turkeys. Won all 1sts at Ohio and W. Va. State Fairs, 1911. Also Buff Orpington Ducks. Dysart Bros., Belmont, Ohio.

Turkeys—Mammoth Bronze

Bronze Turkeys. Big bone, large size, good styles, finely marked, golden bronze plumage. Stock guaranteed as represented. Write us. Worl Brothers, Route 21, Greensfork, Ind.

Wild and Bronze turkeys and chickens. Eggs for hatching. Catalogue, 2c stamp, shewing wild gobbler from the mountains. Valley View Poultry Farm, Belleville, Pa.

For Sale—M. Bronze Turkeys, prize winners at Minneapolis, St. Paul and Winnipeg. Write for photo and prices. C. J. Kapphahn, Route 8, Alexandria, Minn.

Pigeons

Write for our 1912 big free squab book, telling how to make money breeding squabs. How to start small and grow. Enormous demand. 5,000 wanted daily by one marketman. See what he says in National Squab Magazine (monthly). Specimen copy from us, ten cents. Plymouth Rock Squab Company, 341 Howard street, Melrose, Mass.

White, Black, Red and Blue Maltese hens. Yellow and Red Carneaux. Breeders and youngsters. I breed them. None better. Price reasonable. Lafrenlere, Vineland, N. J.

Guaranteed Mated Pairs. Homers, $1.00; Carneaux, $3.00. Maltese, $3.00. 2 illustrated catalogs, 10. Pigeon Dept. Hillhurst Farm, R. F. D. Box No. 22, Orchard Park, N. Y.

POULTRY WANTED

Wanted—Pure Bred Poultry, especially White Minorcas, Indian Runner Ducks, White Orpingtons, Partridge Rocks, Wyandottes, Cochins, Houdans, Andalusians, Crested Polish. Will buy entire flocks. Now is the time to clean out in changing breeds. What have you to sell? P. W. Frehse, Thoroughbred Poultry Dealer, Clarinda, Iowa.

POULTRY SUPPLIES

Use Wyandot White Oil. The oil that's right, for incubators and brooders. As good in the home this season as for poultry purposes. Stands inspection everywhere. Order direct from us and we will help with the freight charges. Write and we will quote you. The Wyandot Refineries Company, Crawford, O.

Smokeless Wicks, non-explosive. For incubators and Brooders they have no equal. Thousands are used on the large poultry farms both here and in Europe. Write today for testimonials etc., all sizes 2 for 25c. Conniscliffe Poultry Farm, Tenafly, N. Y.

For Sale—Seventy-two-egg hot water incubators, all complete, for $6. Freight prepaid. Do you want Indian Runner duck eggs? Runner ducks are the farmer's gold mine. Catalogue free. Golden Rule Incubator Company, Middletown, Ind.

You will need the new Rhode Island Red Journal, devoted to the Reds exclusively. Contains a wealth of practicel hints about poultry raising on the farm. Send 25c for one year's subscription. Red Journal, Readlyn, Iowa.

Do your hens lay in winter time? If not, why not? Do you want them to lay? If so, feed Boldt's Laying Tonic, 50c per package; 6 packages $2.50. Boldt's Poultry Remedy Co., Albion, Mich.

Free advice on poultry problems: Housing, feeding, management, how to treat diseases. Letters welcome. New 80-page poultry book free if you send 4c postage. The G. E. Conkey Co., Dept. No. 86, Cleveland, Ohio.

Are you interested in the best automatic poultry feeders ever built? If you are get in line with the 20th century goods. They bring results. Booklet free. H. E. and C. S. Barnes, 86 King Ave., Columbus, Ohio.

Are you interested in the best automatic poultry feeders ever built? If you are get in line with the 20th century goods. They bring results. Booklet free. H. E. Barnes. Box A, Brink Haven, Ohio.

Roup easily cured. Use Bob White Roup Cure. Guaranteed to cure coup or money refunded. Large box 50c postpaid. Bob White Company, Ames Sta., Box 7, Omaha, Neb.

Guaranteed impossible to over-heat the Tulane. 120 egg incubator and brooder, $9.95 freight paid. Sizes 120 to 300. Catalog free. Tulane Incubator Company, Lebanon, Ky.

Actual live hen incubator, near million used. Patented plans; ask for free book, giving hundreds testimonials. Address, U. U. Co., Box 48, Rivera, Calif.

Poultry Supplies. Send one dollar for Roup Cure recipe. Make your own Roup Cure. Sure cure. Money back if dissatisfied. C. G. Omen, Council Bluffs, Ia.

Lice Powder, 3c lb. Make your own, sell to others. Cold and Roup cure. Laying mash. Other guaranteed formulas, 25c. A. E. Starr, Andover, N. Y.

Profit and Health in Poultry. Hundreds have paid me five dollars for this instruction. Now in book for half dollar. Dr. Nathan Sanborn, Holden, Mass.

FARM LANDS FOR SALE

Arkansas

Famous Springdale Fruit District. Bargains will soon be gone; 56 acres; plenty of orchard, timber, plow land; $1,500; 20 acres, part orchard, $1,700; 8 acres, fine improvements, in town, $2,750, with five acres bearing orchard. Stock and grain propositions, $30 acre up. Free list; ten cents for census map. Fredricks Realty Company, Springdale, Washington Co., Arkansas.

California

Fruit Growing in Town. 37 acres best fruit land, 3 blocks from depot. Main pipe line along fence. Earliest best fruit section. Shipping 1,000 cars annually at highest prices. Electric lights, telephones, etc. Now $2,600.00. Will sell for double this amount before Panama Canal opens in 1915. Rowell Fruit Co., Loomis, Calif.

Come to Shasta County. We have choice sediment land on Sacramento River, under irrigation ditch at $100.00 per acre, near Anderson on main line of Southern Pacific. Shasta Land Co., Anderson, Calif.

Flame Tokay Grapes, Oranges, Olives, Cherries, vegetables, alfalfa, poultry, dairying, at Herald, Sacramento County, California. Central California Traction Colonies, 917 Ashland Block, Chicago.

Twenty acres Tokay grapes and plums, half mile from depot. Best fruit section, $2,500, only $600 cash, balance long time. Rowell Fruit Co., Loomis, California.

Colorado

If you want a part of one of the very choicest tracts of fruit land on earth, where conditions are ideal for growing fruits and for a home, then send for copy of a beautiful booklet describing Morrisania Ranch, Grand Valley, Colo. This is not cheap land—it sells for $300 per acre, including perpetual water right, but it is worth the money. It may be that some member of your family needs the benefit of Colorado's climate for some form of lung trouble. Get a tract of this land and establish your home there before it is too late. The ranch contains 880 acres, and only part of it is for sale, for we will develop the remainder for our own use. Shall we send you the booklet which describes the place? Write me if interested. James M. Irvine, Editor The Fruit-Grower, St. Joseph, Mo.

For Sale—Eighty-acre ranch, near Grand Valley, Colo. One mile south of the famous Morrisania ranch, with good water rights; about 50 acres alfalfa, 12 acres pasture, two acres orcherd, two good houses, with barn, hay, tool sheds, granery, chicken houses and all other necessary improvements for fine class farm. Price $10,000; includes 20 tons of hay and farm implements. No agents. Address A. Isch, Grand Valley, Colo.

Grand Valley desert claim for sale near DuBeque, Coloredo. Quarter section fine, red, fruit soil, half irrigable. Private irrigation system of two reservoirs; one built. Fill from flood waters. Change entry to homestead if desired. Cheap at ten dollars per acre. Write Owner, Pryor T. Scott, Route 3, Grand Junction, Colorado.

700 Denver Suburban Lots, $1.00 down, $1.00 a month. Extraordinary 45 day offer. Near city limits, city weter on boulevard. Transit. Sure advance. Write immediately. Bank reference. Agents wanted. Loretto Realty Company, 1639 Champa St., Denver, Colorado. Charles F. Lelmer, Manager.

For Sale—Twenty acres best orchard land; North Fork Valley, Delta County; no crop failures, plenty water. Write owner. Save commission. Theodore Polling, Hotchkiss, Colorado.

We sell land in San Luis Valley, Colorado. We want live representatives in every locality. Get our proposition. Monte Vista Realty Company, Monte Vista, Colo.

Cuba

Rich soil, ideal climate, abundant rainfall; best transportation; 20 acres, $600, $10 monthly. Map free. Sanderson, 184 Palace Bldg., Minneapolis, Minn.

Florida

Your grapefruit or orange grove, vegetable garden, truck farm, will yield largest profits if you locate at Fort Pierce, on the East Coast of Florida. Florida East Coast Realty Co., 917 Ashland Block, Chicago.

Homes in Healthy West Florida, $20 per acre. Part pay in crops. "Facts About Florida" free. W. S. Reeve, Pensacola, Fla.

Georgia

For Sale—Two Georgia fruit farms; one of two hundred acres, mostly of apples. One tract of three hundred acres, thirty acres in apples, balance in peaches, all at bearing age. Situated at railroad private switch. Half mile from postoffice. Price and particulars on application. J. Puterbaugh, Menlo, Ga.

Idaho

Wendell, Lincoln County, Idaho, offers greatest opportunities in West. Over eleven million dollars invested in irrigation enterprises, in Lincoln County, Idaho, according to Government statistics. But don't judge the hundred thousand acres of wonderful soil tributary to Wendell by what you can see or may have seen from car windows of old Oregon Short Line, as owing to low and favorable grades, railway was surveyed through much poor country. New Oregon Short Line cut-off just completed passes through Wendell and best lands in Southern Idaho. Wendell's first crop potatoes, winter and spring wheat, oats and barley, won sweepstakes Idaho State Fair; again won practically everything in potatoes and many firsts on grains Idaho State Fair, 1909; again in 1911 won sweepstakes in agriculture Idaho State Fair; crops records broken this year. Greatest irrigation system in country. No dry years here, abundant water when you want it; one supply reservoir filled by Snake River, has thirty mile shore line; gigantic irrigation, water supply and power dams on Snake River furnish cheapest electric power in country. Lava ash soil deep, very productive, mellow, easily worked; wonderful fruit country. Oregon, Washington, Colorado fruit men buying here, consider soil best and cheapest known. Land with abundant everlasting irrigation water about fifty dollars per acre. Alfalfa grows to perfection here, great stock country; formerly old winter sheep range, climate mild; spring work begins March; purest soft water for domestic purposes underground. Lincoln County has increased over 600 per cent in past ten years. Wendell, live, progressive town, fine people, two rival railroads, modern churches, schools, banks, hotels and business houses. Come and see for yourself, or write S. M. Smith, Wendell, Idaho.

80 acres farm under government irrigation project in famous fruit valley of Southern Idaho. Small commercial orchard, balance nearly all alfalfa. Soil rich sandy loam, which produced bountifully past season. Perfectly leveled so as any child can irrigate. Failure impossible, house, barn and other improvements; two miles from nearest town. Fine schools, many other advantages. Owner must sell soon. Land in vicinity worth upwards to $1,000.00 per acre. My price at preseut $125.00 per acre; one-third cash; balance, terms. Will pay fare. Write for full particulars. Chas. Ernst, Greenleaf, Idaho.

For Sale—40 acres fine irrigeted land. Perpetual water right. Four room house. Cleared, plowed. $3,608.65; cash, $2,488.65; terms, $1,120, six per cent. O. C. MacNair, Hagerman, Idaho.

Illinois

For Sale, 20 acres, apple, peach, pear, plum, cherry, apricot, grape in bearing. Fine poultry range. $2,500. Easy terms, Peoria market. Wm. Cramer, Dunlap, Ill.

Indiana

A Splendid Location for a fruit farm. Eighty acres, clay loam, red clay subsoil on limestone. Fifty acres ideal fruit land, balance blue grass pasture. Pure, never failing water. On pike. Five miles to county seat. Excellent neighborhood. For cash only. Will plant and care for orchard two or three years if desired. No agents. Address Owner, F. J. Heacock, Salem, Ind.

For Sale—Eighty acre fruit farm, six miles west of Madison, Ind., three miles north of Hanover, on a good stone road; seventy acres in cultivation; over one thousand apple trees; sixty pear trees, twenty-year-old, in good shape; a new house and barn; 250 gallon gasoline sprayer, new. A bargain, own terms. Address, Philip Voorhees, Logansport, Ind.

Maryland

Eastern Shore Farm of 137 acres. 50 acres in wheat, 35 acres of fine timber, 4 acres of apple, peach and pear orchard, 4 acre oyster bed. New modern $3,500.00 house on water front, good tenant house, out buildings, barn, water tower and gasoline engine. Complete with all farming implements, hoses, mules, cattle, hogs and poultry. On piked roads one mile from market. Thomas Stence, St. Michaels, Md.

Michigan

120 acres clay loam, under cultivation. No waste. One mile from town, 60 rods from siding, 40 rods from lake, 20 miles northwest from Grand Rapids in fruit belt, known as Lake View Fruit, Stock and Poultry Farm. Good new buildings; windmill; 25 acres set to fruit. J. E. Humphreys, Casnovia, Mich.

Mississippi

I am offering for sale 1,840 acres of farm land in Grenada County, Miss. 200 acres in cultivation, all good fruit land or would make good stock farm; price $10.00 per acre. J. S. Houston, 737 Marquette Bldg., Chicago, Ill.

Missouri

St. Louis County Farm

262 acres of farming land in Meramec bottom; all in cultivation; all level bottom land except about 25 acres of hill where house stands. Portion of this house site is planted to alfalfa; is located on two main lines of railway, Missouri Pacific and Frisco; twenty-two miles from city limits; ten minutes walk from three passenger and two freight depots; fourteen-room brick and stone house; hot and cold water; two furnaces; barns for fourteen head of horses; barns for 12 head of cattle; grain bins for 6,000 bushels of grain; out buildings for farm help; machinery house, tool house. Price for quick sale, $110.00 per acre. Address F. H. & C. B. Gerhart Real Estate Co., 707 Chestnut St., St. Louis, Mo.

Forty acres, good six room house, large barn, 125 bearing apple trees, 350 young trees, 125 feet chicken houses, 50 foot pigeon house, splendid cave, smoke and tool house, never falling spring water, two big cisterns, about 15 acres hickory and hard maple timber. For full particulars, address Box 324, St. Joseph, Mo.

New Jersey

Clover Crest Fruit Farm for sale. In the hills of Northern New Jersey, one thousand feet elevation; noted for fine quality of fruit; 157 acres; 50 acres in full bearing apple orchard; 10 in peaches. Also cherries, pears, currants; 75 plow land. Balance pasture and woodland. Perfect air-drainage; no orchard heating required; full crop every year. Strong soil, twelve room house, new barn. Estimated value, twenty thousand. Price, $16,000; stock and tools included. Address Clover Crest Fruit Farm, Sussex, New Jersey.

New Mexico

For Sale—3 acres choice valley land under irrigation; dwelling, 2 modern greenhouses, 80x34, 50x20; stocked vegetables; pumping plant; tank and tower; barns, etc.; 100 fruit trees, 3,000 shade trees (4 years old) in nursery. Everything in fine condition; five minutes from street car; 15 minutes from city; a paying proposition. Write J. Woodward, Old Albuquerque, New Mexico.

The very best fruit and alfalfa land to keep or sell for profit is in the irrigated Pecos Valley. G. W. Hinchee, Carlsbad, New Mexico.

New York

Owing to ill health I offer my poultry plant for sale at less than one-half value. A live man can clear $1000.00 the first year. Will stand rigid investigation. Write at once. E. F. White, Route 3, Nicholas, N. Y.

Farms in Seneca County—Raise all kinds of fruit. Home of the York State apple. Not dependent on any one kind of crop. No crop failures. Interlaken Realty Co., Interlaken, N. Y.

North Carolina

Near Prize Apple Orchards 40 acres, 1,200 apple trees, side hill orchard, none over 12 years, all bearing in fine healthy condition, pruned and sprayed. One acre garden, 4 acres pasture, 5 acres wood lot. Pretty cottage, 5 rooms, large barn and other out buildings, all in good condition. Don't miss this at $3,000.00. You make terms. Dr. M. L. Townsend, North Wilkesboro, N. C.

Adjoining Above, 132 Acres—1,200 apple trees, 3 to 15 years, side hill orchards. 12 acres fine bottom land, 30 acres upland suitable for trucking, 40 acres timber, balance cleared for more orchard. Good 2-story frame house, 6 rooms, barn and out buildings. Sacrifice at $3,200.00. Terms to suit. Owner has other business. Dr. M. L. Townsend, North Wilkesboro, N. C.

Oklahoma

For Sale—90 acres bottom prairie. 40 in 20 year apple trees. Hog fenced. 6½ miles from Wagoner, Okla. Box 65, Route 2.

Oregon

Wolf Creek Orchard Tracts, all sizes on easy terms, right on main line Southern Pacific, with 8 passenger trains daily. Best Rogue River soil, producing finest fruits and vegetables. Poultry pays surprisingly. Ideal climate and water. A carpenter, with some capital, is needed to take interest in townsite. Unexcelled opportunity. Write immediately to W. G. Smith, Owner, Wolf Creek, Oregon.

Rogue River Valley. Best Medium climate on earth. Coldest this winter, 21 degrees above. Get away from your winter blizzards and extreme heat of summer. The very best pear, apple, grape, alfalfa, dairying and poultry land, at reasonable prices. Elegant fishing and hunting. Write. A. N. Parsons, Grant's Pass, Oregon. No. 354. Bank references.

"Ask Me About Oregon"—10 acres of the best apple land in the N. W. Best of social and climatic conditions. In the one high class proven district, where the finest land is still cheap. Price only $1,600, easy terms; I have the place for you. No trouble to answer questions. D. D. Hall, Mosier, Oregon.

Wasco County, Oregon. Fruit and grain lands cannot be excelled anywhere in the Northwest. Climatic conditions ideal, insuring abundant crops annually. Transportation facilities unsurpassed. R. H. Weber, The Dalles, Ore.

For Real Estate and Investment, farms, stock ranches, fruit farms, dairying, timber tracts, in an excellent climate, write W. J. Moore, Brownsville, Linn Co., Ore.

Texas

Highest class irrigated farms, in a mild, even temperature, eleven miles from county seat, Marfa, Texas, Southern Pacific Railway, 3 trains a day; Mexico & Orient will be operating trains through land within a year. Every tract within three miles or less from railway town site. Soil is richest chocolate loam; more than enough water permanently, sweet and free from alkali, steel concrete dam; 4,000 feet above sea level; free from blizzards and hot winds. Fruits, alfalfa, grapes, vegetables. One alfalfa season will pay for land. A quarter down, rest at 6 per cent. Tracts from ten acres up. Limited acreage. Write today for fully illustrated book, "Where There's Water and Sixteen Feet of Chocolate Loam," free. Two excursions a month. Greef & Kelley, General Sales Agents for St. Stephen Land & Irrigation Co., B 714, Dwight Bldg., Kansas City, Mo.

Texas Gulf Coast Fig or Orange Orcherd pays for itself in four years. Ideal climate and place to live. Best social advantages. Fine combination with poultry. Good markets. In order to get just what I wanted for myself and some friends, had to take a larger piece than we need, therefore want a few good neighbors to come in with us. Postal will bring you full particulars. J. Hart Welch, Box F, Douglaston, Long Island, N. Y.

Alvin, Texas, the commercial center of the successful orange, fig, strawberry and truck district of the Texas gulf coast; soil rich, climate delightful and location unexcelled. Correspondence solicited. E. C. & J. F. Webster.

For Sale—The Holloway Nurseries at Alvin, Texas. Trade established. Twenty acres land, modern buildings. Getting old; want to quit. Address D. Holloway, Alvin, Texas.

Virginia

Special to gardeners and truckers—We are making extensive preparations for the coming plant season, spring, 1912, and will have a fine list of the following to offer: Lettuce, in five varieties; cabbage, all the leading kinds; peppers and eggplants, pot grown and otherwiso transplanted; cauliflower, celery. Special attention is given the growing of celery plants of golden self-blanching French stock. Tomatoes, all the leading varieties, transplanted and pot-grown plants. These are money-makers and we shall be pleased to receive inquirles and give best possible prices to large buyers. We have extensive green houses and hotbeds and truck 200 acres. Fox-Hall Farm, R. F. D. No. 2, Norfolk, Virginia.

Look ahead five years—What's in store for you? Would a nice, cosy home, and a $3,000 income per year in this beautiful valley for life look good? A ten-acre apple orchard tract planted to 500 red-apple trees—which will cost you a few dollars now and a few dollars each month—will insure your future home, income and happiness. Write us and get "Free Booklet," with facts. Shenandoah Valley Apple Lands Co., Waynesboro, Virginia.

1912 will be a big year for the owners of apple orchards in the Shenandoah Valley, Virginia and now is your opportunity to secure one. I have seven carefully selected bearing orchards; prices, $1,500, $3,500, $3,700, $7,000 and upward, on easy terms, for you to choose from; all are desirable homes; all are certain income producers; write me today. H. Magie, Waynesboro, Virginia.

Washington

Fruit Ranch Near Spokane. Resident owner has more than is necessary for comfortable living and will divide with congenial Christian family. Easy terms. If desired, can give extra work to purchaser. Or, location ideal for professional, as community is large and prosperous. No isolation here; electric and steam roads pass, excellent driving and automobiling. Water, none better, and no limit on use. Address "Owner," care Fruit-Grower.

REAL ESTATE AGENTS

Cash for your farm or business. I bring buyers and seller together. No matter where located, if you want to buy, sell or exchange any kind of property, anywhere, address Frank P. Cleveland, 994 Adams Express Building, Chicago, Ill.

Sell your property quickly for cash, no matter where located. Don't pay big commissions. Particulars free. Real Estate Salesman Co., Dept. 28, Lincoln, Neb.

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace Bldg., Minneapolis, Minn.

Farm Wanted—Will pay cash for a good bargain. Give full particulars and lowest price. W. F. Grower, Box 994, Cherry Valley, Illinois.

NURSERY STOCK

Fruit, Shade and Ornamental trees, grape vines, shrubbery, strawberry plants, roses, ornamental shrubs and vines. Forest tree seedlings, hardy catalpa and evergreens. Hill selected seed potatoes, etc., grown here in Northern Nebraska, been subject to a test of 39 degrees below zero without injury. We have a large and well equipped nursery and use up-to-date methods in propagating our stock. Send us your orders and you will be successful. The Humphrey Nurseries, Humphrey, Nebraska.

Pedigreed Nursery Stock—If you want to plant trees that are sure to bring big returns in the future, write for our great new book, "Pedigreed Horticulture," the handsomest catalog of the year, giving complete information regarding pedigreed trees. We propagate all nursery stock from individual trees which have a record of bringing in big profits from the orchard. Do not fail to investigate. Write today. Our book is free. Winfield Nurseries, Winfield, Kan.

Trees of all kinds at wholesale prices. Save agents commission of 40 per cent by ordering direct from us. Stock guaranteed first class; certificate of inspection furnished. Don't delay. Send for price list now. Address Box R, Wichita Nursery, Wichita, Kansas.

The two great gold medal peaches, Capps and Mikado, awarded gold medal at St. Louis Exposition. If you want to be the peach king of your section get busy this spring and plant Capps and Mikado. They are the largest, best keeping and best shipping peaches in the world. Bring fabulous prices on the market, and are the two great commercial peaches of the future. Write today for descriptive circular. Capp Brothers, Mt. Pulaski, Ill.

Tree Salesmen can make from $100.00 to $300.00 per month selling our guaranteed Pecan Trees, Satsuma Orange, Figs and other fruit and ornamental trees and plants. Salesmen's outfits free to responsible parties. Special inducements to dealers. Largest nurseries and most complete stock in the South. Address The Griffing Bros. Co., Jacksonville, Fla. or Port Arthur, Tex.

American Everblooming Hydrangea, the best hardy flowering shrub ever introduced. Hardy in Canada. Strong plants that will bloom the first year, 25 cents each; larger plants, 35 cents each, 3 for $1.00, prepaid. Send for our "Choice Little List" of ornamentals. It's free. E. Y. Teas & Son, East Plum St., Centerville, Ind.

If you are interested in Cherry trees, the kind that produce results, buy Western New York trees, direct from the grower. No scale. Write for prices; other nursery stock. C. W. McNair Nurseries, 300 acres, Dansville, N. Y.

Hood River Strawberry Plants, Clark's Seedling, the best bearer and shipper on the market. All other varieties discarded here. Can ship plants by mail or express anywhere. W. R. Gibson, Box 104, Hood River, Oregon.

Money in buying best nursery stock grown. Everything for the fruit grower in trees, plants, vines and ornamental stock. None grown that excels ours. Handsome catalogue free. Grand Mere Nursery, Baroda, Mich.

Satsuma oranges and grapefruit trees, budded pecans, fruit and ornamental shade trees. Rose bushes and shrubbery. No better stock grown. Illustrated catalog free. Turkey Creek Nursery, Box 39, Macclenny, Fla.

Dahlias, named kinds, $1.25 per 100. Gladiolus, good mixture, same price. 1-yr. Cherry, Montmorency and Early Richmond, 3 ft. up, 10c each. F. O. B. C. W. Hoffman, Route 13, Dayton, Ohio.

Americus, the great fall bearing strawberry, true to name, direct from originator, $2.00 per dozen, express paid; 300 other varieties only $1.50, express paid. W. H. Koell, Box 700, Hampton, Iowa.

Roses Guaranteed to Bloom. Direct from America's foremost growers. Write for 1912 catalogue. The Conard & Jones Co., Rose Specialists—50 years' experience, Box 12, West Grove, Pa.

Strawberries. My specialty is strawberries. New, Paul Jones, Gibson, Bethel, Bissel, Ozark Bissel. Also best old standard varieties. Benjamin F. Smith, 1847 Barker Ave., Lawrence, Kan.

Plant Michigan Grown Trees. We have a fine selection for spring planting. Trees direct to planter. Will be pleased to mail you our price list. H. L. Westgate Nursery Co., Monroe, Mich.

Elm, Maple, Box Elder, nursery grown. Sizes 6 to 12 feet. Leased ground. Must move them. Write us for prices on car lots. The Newburys, Mitchell, S. D.

Senator Dunlap Strawberry Plants. Grown by up-to-date methods. Fine plants, by express, $3.75 per 1,000. By mail, 75c per 100; 25c per 25. P. A. Anderson, Grand Mound, Iowa.

Strawberry plants—Send for our valuable book and price list of hardy Northern-grown plants. Fruit growers and poultry keepers' supplies. George Stirdivant, Sheboygan Falls, Wisconsin.

California Privet, Spirea Van Houtti, Catalpa Speciosa, Black Locust, Carolina Poplar. High quality, low price. Beautify home grounds, plant timber trees. Emil Pacatte, Pierron, Ill.

New Strawberries, 1912 catalog free to all; reliable, interesting and instructive. The new everbearers and other important varieties. Address, C. N. Flansburgh & Son, Jackson, Mich.

For Sale—Extra fine Senator Dunlap Strawberry plants, $2.00 per thousand; quality guaranteed. Come and see them or write me. M. C. Buteyns, R. F. D. No. 2, St. Joseph, Mo.

Dollar strawberries. California's money maker. Early, best grower, best shipper, best keeper. We buy thousands of crates yearly. Plants, $3 thousand. Rowell Fruit Co., Loomis, Cal.

Apple seedlings and root grafts. My seedlings are Northern Iowa grown. Grafts made in any style by experienced workmen. Write for prices. Hawkeye Nurseries, Stratford, Iowa.

Strawberry plants, $2 per 1,000; raspberry plants, $5 per 1,000. Other stock in proportion. Catalogue free. Write today. Vernon H. Krider, wholesale nurseryman, Middlebury, Ind.

Peach, pear, plum, cherry and apple trees. From the largest nursery center in the world. Send for catalog. Alton E. Randall, Main and Adams St., Dansville, N. Y.

Raise Ginseng, $1 per square ft. of ground, $25,000 on one-half acre; grows anywhere; one-half city lot a bonanza. Sheboygan Ginseng Gardens, Sheboygan, Wisconsin.

Helen Davis strawberry plants for sale by the "originator." Not the same variety that Buckbee sent out last spring. Send for prices. Geo. W. Davis, Brazil, Indiana.

Fifty Thousand Black Raspberry plants. $5.00 per 1,000. Red, $4.00. Red Currants, $1.50 per 100. Strawberries, $1.75 per 1,000. Alva Cathcart, Bristol, Indiana.

Berry Plants and Root Cuttings at half price. Select, new-ground grown, strong plants. Also a few English Beagle Hounds cheap. Gray's Nursery, Pekin, Ind.

Plant good trees. We have a lot of fine trees for sale at prices that will please all that need trees. Louisiana Star Nursery, Plain Dealing, La.

BULBS

Gladioli Surplus, half price—America, Silver Trophy Blues, Gold Medal, etc. Cowie strain, grand. We are wholesale growers. Write. Beck & Beck, Piqua, Ohio.

Gladioli—"Peace," the most beautiful white in existence. Many other varieties of exceptionally high quality. Write for illustrated catalog. Arthur Cowee, Box 25, Berlin, N. Y.

SEEDS, PLANTS, ETC.

Pure unwashed seed of Halbert Honey and new shipping watermelon, Rubber Rind, direct from the originator. Write for prices. H. A. Halbert, Originator, Coleman, Texas.

Early cabbage plants; fine; mail, 60 cents 100. Express, $2.50 1000. Firmest shipping strawberry grown. Dozen, 50 cents. Mark T. Thompson, Richmond, Va., originator.

Want Asparagus Plants? We offer the best to be found at prices that will interest you. Perry Nursery Co., Perry, Iowa.

Seed Corn. Reid's Yellow Dent and Boone County White, per bu., $2.00. New Kherson Seed Oats per bu., 80c. F. M. Riebel, Arbela, Mo.

AGENTS WANTED

I will give to a bona fide fruit grower a complete geyser spray equipment, with pump, hose, tank, steel wagon. Value $350.00 without engine. This equipment was fitted up for demonstration purposes and owing to ill health I am unable to use it this spring. To the orchardist who will make me the best proposition towards using same, and, if satisfactory, taking an agency for his section, I will give this equipment. Geo. F. Wescott, White Bldg., Buffalo, N. Y.

Wanted—Nursery salesmen to handle extra good side line, sells quickly, pocket sample. Write Nebraska Farm Journal, 334 Chamber of Commerce Building, Omaha, Neb.

Agents make $5.00 daily selling weather strips. 200 per cent profit. Easy sales. A. C. Wendelken, Marietta, Ohio.

HELP WANTED

Superintendent Wanted—Expert horticulturist to clear timber, plant and develop apple orchards in Middle West, for responsible company. Must be worker, understand handling men, business ability, economical results, enthusiastic with salesmanship ability; permanent position, good future, moderate salary to start with. Write fully. Shaw, 155 N. Dearborn St., Chicago, Ill.

Experienced Orchardist Wanted—Alabama parties, having set out 5,000 each of apple and peach, and 1,000 pear trees, desire a competent, experienced orchardist. It will be a few years before the orchard produces; meanwhile the land can be worked, these profits to pay for management. Hog, cattle and sheep raising can be conducted on shares. Here's an opportunity for a man with no capital but experience who wishes a start. None but competent parties need apply. Name File 3543. M. V. Richards, Land and Industrial Agent, Southern Railway, Washington, D. C.

Wanted—A middle aged couple without children; man a practical farmer, intelligent, temperate and industrious; wife as working housekeeper, and both caretakers when owners are absent. Also another married couple to live in tenant house. Man to assist with the general farm work. Wife to board extra help occasionally. Give references and wages desired in first letter. Address Morse and Kent, Old Mission, Mich.

Wanted—A man or woman to act as our information reporter. All or spare time. No experience necessary. $50 to $300 per month. Nothing to sell. Send stamp for particulars. Sales Association, 790 Association Building, Indianapolis, Indiana.

Wanted—An experienced peach and apple grower to look after fruit planted and to work farm on shares for one-half interest in fruit and crops on the farm. Answer now to Thos. B. Sheldon, Union Theological Seminary, Richmond, Va.

Salesmen—To sell the most efficient insecticide and fungicide on the market. Exclusive territory given. Splendid opportunity for hustlers. Entomoid Chemical Co., Woonsocket, Rhode Island.

Wanted—A good homeless woman or cook to keep house. Must know how to cook. German preferred. Fred Huecker, Route 1, Bunceton, Mo.

POSITIONS WANTED

Oregon Orchardist, practical, with some college training, wants position as superintendent or foreman of commercial orchard. Address 802 Ash St., Marshall, Illinois.

Wanted work on farm by boy 17. Hershel Wilson, Riley, Ind.

TENANTS WANTED

Tenants Wanted—My three sons and myself are going to clear and plant a large tract of citrus fruit and vegetable land in the center of the finest fruit and vegetable section of Florida. We will want some willing help. We can furnish a number of good truck farms with new buildings, fences and equipment, and can give our tenants employment on our land between picking and planting seasons. Here is an excellent opportunity to test out Florida's climate, soil and profits. We have also some excellent land to sell to those who want to buy. When you write, state your age, number in your family, what you are now doing, what you can do, and what money or equipment you have to do with. Address F. O. Farwell, Adv., 14 Fenelon Place, Dubuque, Iowa.

Wanted—Tenant on farm of 80 acres, 55 in fruit, part bearing. Near good market. Must furnish equipment. Share and wage arrangement. Address Herbert R. Cox, Canton, Ohio.

PARTNER WANTED

Partner in sixty acre Illinois orchard and poultry farm; fifteen hundred bearing trees; four poultry houses. State capital can invest. N. E. Roberts, Washington City, D. C.

FOR SALE

Bargains in New Automobiles—The Burg Six is the car for you. Quiet, powerful, roomy, comfortable, beautiful design. Great hill climber. Price reasonable. For a bargain, write for our introductory proposition. Joseph Burg Carriage Co., Dallas City, Ill.

For Sale, several new 30 gal. York Air Pressure Sprayers. Just what you want for small or hillside orchards and lawns. Will sell at cost, a bargain. Address E. F. Kauffman, York, Pa.

Must Sell at once, 2-passenger automobile, incubator, bone mill, bee equipment, spray pump, desk. All in splendid condition and genuine bargains. J. F. Brown, Cynthiana, Ky.

Sacrifice Sale on second hand automobiles, trucks, tires, etc. Write us for particulars; new four cylinder touring cars below manufacturer's cost. Box 275, Burlington, Wis.

Two Gasoline Power Sprayers. Capacity 12 and 8 gallons, fully equipped, good condition. New last season. For sale cheap. Nebraska Apple Culture Co., Lincoln, Neb.

For Sale—Violin, excellent condition, pearl inlaid and sweet toned. Will sell cheap. Also good typewriter. Address E. C. Pike, St. Charles, Ill.

We have for sale some first-class corn, clover and bluegrass farms in Cass County, Mo. Can please you in a home. Jot M. Wilson & Son, Harrisonville, Mo.

For Sale—Moving Picture film, 1c foot. H. Davis, Watertown, Wis.

TO EXCHANGE.

For Trade—Nice new five-room house. Nice lot 40x150. Fine well. Basement, out buildings on nicest and best street in town, at the edge of town. 13 good factories the farthest not over a mile. Plenty of work here. Price $1,500.00, Mortgage $600.00 to run five years. I want a few acres of land worth about $1,000.00. W. T. Hickman, Decatur, Ill. Rt. 5.

Apple, Peach and Cherry Trees wanted. Will exchange 1 setting of championship White Wyandotte chicken eggs for 10 3-year-old trees. Will pay express. Will Gebhardt, 703 Pine St., St. Louis, Mo.

Wanted land in lower altitude for 120 acres in San Luis Valley, Colo., 3 miles from R. R. town. Main canal, plenty water. J. A. Wilson, Morehead, Kan.

GALVANIZED STEEL NESTS

Send for free catalogue of the Knudson patent galvanized steel, lice-proof poultry nests, coops, feeders, etc. They positively eliminate the lice and mite problem. Pay for themselves in short time, whether you keep ten hens or ten thousand. Write today. Knudson Manufacturing Co., Box 304, St. Joseph, Mo.

LIVE STOCK

O. I. C. Swine. Pigs 8 to 10 weeks old a specialty. Prices right, 30 years experience. The great book, "Raising Hogs for Profit," 140 pages, price $2.00 only. Order this book today, if you don't like it return it and get your money. M. L. Bowersox Co., Route 4, Box 9, Bradford, Ohio.

For Sale—A few high-grade Holstein-Guernsey Jersey heifer calves, and all varieties of Plymouth Rocks, Wyandottes and Rhode Island Reds; cockerels and pullets at reasonable prices. W. A. Hoyt, Whitewater, Wis.

Registered Holstein-Friesian bulls cheap. Strong and growthy. King Segis blood. Regal White Wyandotte eggs, hatching, 5c each. Satisfaction guaranteed. Luther Falkey, Phelps, N. Y.

Red Polled Cattle. Bulls of serviceable age. From good milking stock. Young calves and cows. Barred Rock chickens. Clyde M. Worley, Route 2, Mercer, Pa.

Milch Goats—Swiss and Spanish breeds. G. H. Wickersham, 1244 St. Francis Ave., Wichita, Kansas.

DOGS AND PET STOCK

50 Fox Terriers of all ages. Best rat, pet or watch dog on earth. Write me at once for prices. T. H. Kaldenberg, Pella, Iowa.

For Sale—Guinea Pigs, Ring Doves, White Doves, Fancy Mice, Pigeons. John Ornellas, Springfield, Ill.

PRINTING

Printing for poultrymen, fruit-growers, everyone. Note heads, envelopes, cards, tags, circulars; 100 either, 45c; 250, 80c; 500, $1.25; 1000, $2.00. Postpaid. New cuts Samples, 2c. Orvil Kiger, Brighton, Iowa.

100 nice white Envelopes with return and name and address printed thereon for 25c, postpaid. Visiting cards, 35c for 100. Wagles Printery, Marshall, Mo.

Berry Tickets and Stationery for growers and others. No cheating by pickers if you use my tickets. Samples sent free. T. M. Jones, Goreville, Ill.

PATENTS

Patents Procured and Sold. All countries; inventions make fortunes; manufacturers seek my clients' patents; send sketch of your invention today; book free. H. J. Sanders, 360 Crilly Building, Chicago, Ill.

WANTED

Walnut timber, highest prices paid. Write R. B. Tansel, 1709 S. 26th St., St. Joseph, Mo.

MISCELLANEOUS

Free—"Investing for Profit" magazine. Send you name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine. It is worth $10 a copy to any man who intends to invest $5 or more per month. Tells you how $1,000 can grow to $22,000. How to judge different classes of investments, the real power of your money. This magazine six months free, if you write today. H. L. Barber, publisher, R434, 20 W. Jackson Boulevard, Chicago.

Sulphur—We can supply your requirements promptly at the lowest prices, in barrels and sacks. Our sulphur is the best and cheapest that can be gotten, for making lime and sulphur solution. Write for prices. Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

For Fruit-Growers' Wives
Perfect fitting, always satisfactory, kitchen dresses, made from fast color blue check Amoskeag. Introductory price, postpaid, $1.00. State bust measure and skirt length. Mary Jane Garment Co., Lincoln, Neb.

Genuine Bromide Enlargements, 8x10 crayon finish, mounted, postpaid, $1.00. Finished in water colors, $2.00. Made from any photograph, tintype, film. Finest work in New England. Keystone Photo Company, Medford, Mass.

Matchless Pocket Lighter sent postpaid to any sender upon receipt of 35c. Special proposition to agents and dealers. Lowe Novelty Co., 5727 Lowe Ave., Dept. B44, Chicago, Ill.

Have all kinds second-hand guns, revolvers, stoves, furniture, steel traps, etc. Furs a specialty in the season. Correspondence solicited. James A. Gregory, Liberty, Ind.

Paper Pots will give you beans, melons, corn and cucumbers three weeks earlier and they are fine for strawberry plants. Crosby & Son, Catonsville, Md.

You'll receive Post Cards from everywhere; get acquainted; be somebody; membership, 10c. Round World Postal Club, 16, Dayton, Ohio.

Peach Blossom Lotion, Cooling, whitening, beautifying, improving complexion; not oily. 25 cents, silver. J. Cox & Co., New Milford, Connecticut.

Meeting of Nebraska State Horticultural Society.

The annual meeting and fruit show of the Nebraska State Horticultural Society was held at the University Farm, Lincoln, during the week of Jan. 16th to 19th inclusive. The program was full of very valuable as well as interesting subjects. Unusual interest was shown all through the meetings, both the members and friends of the society were very much enthused over the horticultural possibilities of the state.

The fruit and floral show was the best ever staged in the state, consisting of 100 boxes and about 1,500 plates of apples of exceptional quality. The people who visited the show were impressed very favorably with the quality of Nebraska grown apples.

The exhibit of boxed apples probably attracted more attention and people were impressed with the advantages of the boxed pack over the old barrel pack. The fruit display was declared by many who had attended shows of national importance to be equal in most every respect to the best of them.

Some very interesting papers were presented. "The Upward Trend of Horticulture" was discussed by J. P. Hess of Council Bluffs, Iowa. He said that horticulture was tending toward specialization, i. e. people must not try to grow too many kinds of fruit or too many varieties of one kind. Mr. Frank G. Odel read a very valuable paper on "Horticultural Observations In the Northwest." He pointed out the advantages and disadvantages of buying the high priced land of that region, when just as good or better orchard lands exist in eastern Nebraska, 1,500 to 2,000 miles nearer to market.

Another very valuable paper was "The Quality of Nebraska Apples," by Mr. Val. Keyser. He compared Nebraska's advantages for fruit growing with those of the West, and he also compared the keeping qualities of our apples with those of other states supposedly better adapted to fruit growing.

"Raising Flowers on a City Lot" was a subject of great interest to lovers of flowers, and was discussed by W. J. Courtright of Fremont. He said, "In flowers I see human nature, and it is a most interesting study. Some have most delicate and dainty beauty, which, in human beings, is fleeting and easily dissipated. Some are glorious in their strength and majesty and remind me of various leaders of humanity. Some are tender, suggesting him who gives great promise but falls by the wayside at the first serious opposition. Some are hardy like the man who brooks no restraint, but with an iron hand will ever press forward. Some are fleeting and transitory, suggesting the notionable and unstable, who may never be depended upon. Some are enduring regardless of weather, reminding me of him who is always on duty no matter what obstructions may be encountered. Some respond only to favorable conditions like the man who balks unless the weather is just to his liking. Some are stately beauty, suggesting enduring friendship. Some are sweetly fragrant, reminding of the warm, sympathetic heart which is always loved. Some have several of these good qualities. Every one possesses one or more qualities of merit. They are the creation of the Almighty and His dispensation of the beauties of nature—but not one of them is perfect."

Other important papers and discussions made the meeting very educational and interesting to both the commercial and amateur horticulturist.

The following officers were elected for the year beginning June 1, 1912: President, A. J. Brown, Geneva; first vice president, C. H. Barnard, Table Rock; second vice president, Lewis Henderson, Omaha; treasurer, Peter Youngers, Geneva. J. R. Duncan was elected director for three years to succeed G. A. Marshall of Arlington.

Some of the principal awards on fruit went to the following: Keyser, Marshall & Lash, Weeping Water; G. S. Christy, Johnson; Marshall Bros., Arlington; F. W. Hofmann, Peru; L. W. Slayton, Salem; Ray W. Hesseltine, Peru. Principal awards on cut flowers went to: Lewis Henderson, Omaha; C. H. Green, Fremont, and Simanton & Pence, Falls City.

ROY E. MARSHALL.

Book Reviews

Van Pelt's Cow Demonstration. By Prof. Hugh G. Van Pelt. Published by Kimball's Dairy Farmer, Waterloo, Ia.

The selection of a cow for dairy purposes is made far easier after reading this book and studying the pictures than was dreamed possible before. The book contains nearly 100 pages, about half of which are taken up by illustrations. These pictures show Prof. Van Pelt demonstrating the various points to observe in selecting a cow for milk-production. By their aid, the inexperienced person is enabled to distinguish between drone cow and the worker. A more helpful book for the purpose has never been produced.

First Lessons In Bee Keeping. By Newman and Dadant. Published by The American Bee Journal. Postpaid, 50c.

A short treatise on bee culture, prepared especially for the person who knows nothing about bees or their habits. It describes the natural history of the honey bee, illustrating the queen, worker and drone. It tells how to get established in beekeeping, how to go about producing honey of the highest grade, how to hive a swarm and how to transfer bees from one hive to another. The book is splendidly illustrated, and is written in such an understandable way that the most inexperienced person can almost consider himself to be an expert beekeeper after reading the book.

The Farm and Garden Rule-Book. By L. H. Bailey. Published by the Macmillan Company; 587 pages. Price, $2.00.

This is the new edition of the well-known "Horticulturists Rule-Book," which is now discontinued. In this new volume, Professor Bailey has included all of the vast amount of facts and formulae covered in the original Rule-Book, but in addition gives a wonderful lot of receipts, precepts, formulas and tabular information for the use of every line of agricultural work, from the amateur gardener to the rural teacher, the live stock judge and the farm mechanic. It is the most elaborate book of the sort ever compiled, and deserves as wide circulation as the original Horticulturist's Rule-Book.

LAST CHANCE FOR FREE LAND

There will be just such a rush for Mexican land this winter, as there was in Oklahoma when it was opened for settlement. In Tropical Mexico, the fertility of the soil is inexhaustible. Land that will grow bananas to perfection, can be got free, all that is required is to have five acres of bananas planted within five years. You can get the planting done by authorized Improvement Companies, on the installment plan, by paying $5 a month at first. You do not have to go to Mexico. People living in the United States and Canada can get particulars regarding Mexican Free Land by addressing The Jantha Plantation Company, Block 925, Pittsburgh, Pa. Bananas begin bearing in about one year. The profit is from $200 to $300 per acre. Producing banana orchards sell for one thousand dollars per acre. I write this hoping that many of your readers may be benefited as I have been, for I think it the opportunity of a lifetime, and within the reach of all.—Adv.

WHAT EVERY FARMER SHOULD KNOW

FORMULAS—How to kill and cure pork and beef. How to tan fur and leather at home. How to make all kinds of sausages. How to prepare and take off hides and fur for market. Book with 100 views with plans, how to cure and build anything out of cement on the farm. By men of lifelong experience. PRICE LIST FREE. W. L. KELLER, KEARNEY, NEBR. Last appearance; save address.

Apple Temple at Spokane.

A project has just been launched at Spokane, Wash., for the construction of a convention auditorium and apple temple, to be paid for by a municipal bond issue. This is an outgrowth of a need that has been felt since the apple show has developed into such mammoth proportions. But its usefulness will not be limited to housing the apple show, as Spokane has taken her place as a convention city, and the need for an auditorium is being felt more and more each year.

Orchard protection: Subscribe now.

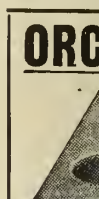
Your Chance for Quick Money in Strawberries

Orchardists, the drouth has almost destroyed old beds and 1911 plantings. Growers are scared. The acreage planted this year will be reduced 25 per cent. In 1913 the berry crop will be short and will command very high prices.

GET OUR 1912 BOOK

Plant berries between your trees. You can profit greatly by this natural condition. You can make your land in young orchard pay big at once. We grow plants of the highest quality—none are better. We fill orders so satisfactorily that no one kicks, and we tell how these things are done, in our 1912 catalogue. It's free.

J. W. JONES & SON,
25 South Road St., Allen, Maryland



IRON WITHOUT A FIRE

New, easy, pleasant way. Mrs. Larkins, Mich. writes, "Have ironed 6 years with perfect satisfaction." Mrs. Timm, O. says, "Couldn't think of ironing without it."

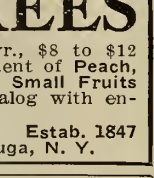
Improved Monitor Sad Iron

Self-Heating. Not Sold in Stores.

Strong, light, handsome—durable. Easy to operate; heat regulated instantly; no dirt—no odor.

WANTED—AGENTS, SALESMEN, MANAGERS. $10. to $20.00 a day. No experience required. Sells almost on sight. Martin, Tenn., cleared over $5,000 in 1 yr. Trimmer, Ill., writes. "Sold 12 in 10 hours." Mrs. Nixon, Vt., made $14.00 in half day. Send for big, colored circular, full size and interior view of iron. Exclusive selling rights—no charge for territory.

Monitor Sad Iron Co.
132 Wayne St. Big Prairie, O.



ORCHARD HEATER

An urgent request for all wanting the heater to send in orders as soon as possible.

THE WARD ORCHARD HEATER COMPANY,
Clifton, Colorado

FRUIT TREES

CHERRY, beautiful 2-yr., $8 to $12 per 100. A full assortment of Peach, Apple, Plum and Pear. Small Fruits in variety. Get our catalog with endorsements. It is Free.

H. S. WILEY & SON. Estab. 1847
Maple Street, Cayuga, N. Y.

I Cured My Rupture

I Will Show You How To Cure Yours FREE!

I was helpless and bed-ridden for years from a double rupture. No truss could hold. Doctors said I would die if not operated on. I fooled them all and cured myself by a simple discovery. I will send the cure free by mail if you write for it. It cured me and has since cured thousands. It will cure you.

Fill out the coupon below and mail it to me today.

Free Rupture-Cure Coupon

CAPT. W. A. COLLINGS, Inc.
Box 28 Watertown, N. Y.

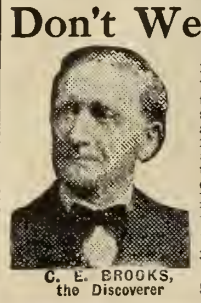
Dear Sir:—Please send me free of all cost your New Discovery for the Cure of Rupture.

Name.....

Address.....

.....

Don't Wear a Truss!



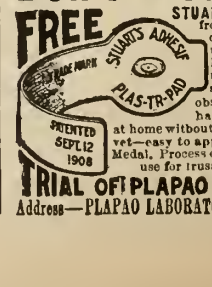
C. E. BROOKS, the Discoverer

Brooks' Appliance, the modern scientific invention, the wonderful new discovery that cures rupture will be sent on trial. No obnoxious springs or pads. Has automatic Air Cushions. **Binds and draws the broken parts together as you would a broken limb.** No salves. No lies. Durable, cheap. Pat. Sept. 10, '01. **Sent on trial to prove it.** Catalogue and measure blanks mailed free. Send name and address today.

C. E. BROOKS,
57A State St., Marshall, Mich.

Don't Wear a Truss

FREE



STUART'S PLAS-TR PADS are different from the truss, being medicine applicators made self adhesive purposely to hold the parts securely in place. No straps, buckles or springs—cannot slip, so cannot chafe or compress against the pubic bone. The most obstinate cases cured. Thousands have successfully treated themselves at home without hindrance from work. Soft as velvet—easy to apply—inexpensive. Awarded Gold Medal. Process of recovery is natural, so no further use for truss. We prove what we say by sending you Trial of Plapao absolutely FREE. Write TODAY.

TRIAL OF PLAPAO
Address—PLAPAO LABORATORIES, Block 220 St. Louis, Mo.

Table of Contents

EDITORIAL
Advertising Fruits to Increase Consumption....12
American Potash Supply....12
How About Parcels Post....12
How Commission Men Equalize Sales....12
Over-Production of Apples....12
Resignation of Moore....12

EXTENSION WORK & OEMONSTRATION TRAINS
Agricultural Schools, Movable....44
Alfalfa in Canada, Stimuate....45
Northern Pacific Oemonstration Train....13

GARDENING
Garden, An Amateur's....30
Gardener, Hints for the....43
Hotbeds....53
Hotbed, Building A....36
Okra, How To Grow....59
Onions, Early Bunch....54
Tomato Crop, Handling A....52
Tomato Growers, To Fall....59
Tomatoes, How to Get Early....36
Tomatoes, How to Ripen....29
Tomatoes, Raising Early....10
Tomatoes This Year, How I Grew....21
Tomatoes Under Glass....5
Vegetables, Earlier....51

HORTICULTURAL SOCIETY MEETINGS
Farmers Meet In Indiana....42
Missouri Horticultural Society....20
New York Fruit-Growers Ass'n Meeting....6
Ozark Fruit-Growers Ass'n Report....15
Purdue Short Course....42
Virginia Horticultural Society....43
Washington Horticultural Society....49

MISCELLANEOUS
Birds, Don't Kill the....14
Canning Industry, Home....14
Choosing A Farm....3rd cover
Oraining the Farm....55
Fertilizer From Smoke....13
Fruit Notes for February....35
Grape Storage Experiments....45
Hogs in the Orchard....37
In the Berry Fields....48
Lime and Cover Crops....32
Maggots....30
Motor Truck, The Farm....46
Side Lines for Farmers....37
Soy Beans....51
Success on Ten Acres....53
Winter Work for Farmers....44

ORCHARD PROBLEMS
Catch Crop, Corn As A....54
Fruit Farm, Making A....40
Making a Fruit Farm....41
New Haven, A Oay at....22
Nurseries, New Haven....22
Orchard, McCollum....50
Orchards, Profit in Old....56
Orcharding, Kentucky....50
Planting, One-Year Trees vs. Two-Year-Old Trees For....23
Pruning, Time of....28
Pruning in Colorado....24
Pruning Old Trees....57
Pruning the Orchard....27
Rejuvenated Orchards....56
Renewal by Top-Working....35
Ten Thousand Acres at Hood River....15

OUR HOME FOLKS
February Work for Flowers....60
Old Fashioned Nurse—2....60
Housekeeper's Emancipation....61
February Work....61
Neighborhood Entertainments....62
Something Different....63
Breakfast Dishes....63
Home, An Inexpensive Modern....64

POULTRY
Breed, Which is the Best....68
Composition of Fowl and Egg....18
Ory Mash as Compared to Moistened Mash....19
Eggs, Co-operative Marketing of....17
Eggs on the Farm, Oirty....70
Egg Production....17
Eggs, Production and Sale of Market....17
Feed Better....16
Feeding for Egg Production....18
Fixing Up the Chicken House....70
Indian Runner Oucks....69-71
Keep Pure Bred Stock....16
Litter in the Poultry House....70
Make Hens Scratch....66
Poultry Buildings....17
Houses, Build Better....16
Poultry Experience, Woman's....10
Poultry-Fruit Farm, A....16
Poultry, Some Experiences With....66
Success With Poultry, One Man's....11
Turkey, Bourbon Red....69

SPRAYING
Apple Temple at Spokane....76
Book Review....76
Nebraska Horticultural Society....76
Spraying Saved Home Orchard....58
Spraying Old Trees....57

TIFFANY'S
ALL STEEL Oil Tempered
Tree Pruner

Made on honor from start to finish. This entire tool is forged from bars of fine crucible steel carefully tempered in oil and fitted with short wood hand grips which cannot come off, split, spring or pinch the fingers. The hook is designed to slip onto limbs easily and work into narrow places. The blade has the draw cut principle and cuts large limbs easy and smooth. Nothing is spared to make this tool the best that can be made, and I guarantee perfect satisfaction. Length 24 inches, weight 3 lbs. Sent by express prepaid, upon receipt of $2.00. I also make a very practical double cut all steel Pruner that cuts all around the limb and does not bruise the bark. Length 26 inches, weight 3½ pounds. Price, $2.50, express paid. Send for circular.

GRAFT THOSE TREES

You can do it yourself with Tiffany's Grafting Tool. Worth its weight in gold. The best and neatest tool of its kind on the market. Forged from fine crucible steel and fitted with a nice hardwood handle. Directions how to graft and recipe for making wax is sent with each tool. Sent by mail, postpaid, upon receipt of 60 cents.
CARROLL R. TIFFANY, Mfr., Franklin Forks, Pa.

PEACH TREES
APPLE TWO CENTS AND UP
STRAWBERRY PLANTS, SHADE TREES, PLUM, PEAR, CHERRY, Etc. Splendid Stock. NO AGENTS. But sell direct to planters and save 75 per cent. Free Catalogue.
TENNESSEE NURSERY COMPANY
BOX 100. CLEVELAND, TENNESSEE

Death of T. H. Todd.

T. H. Todd, one of the best-known fruit-growers of the Middle West, died recently while enroute to his home at New Franklin, Mo., from Miami, Fla., where he had gone for his health. His body was brought back to New Franklin for burial, which occurred on January 15th.

Mr. Todd was one of the best apple growers in Missouri. He had a good orchard, took good care of it, and made money from horticulture. For years he was a member of the Missouri State Horticultural Society, and was active in the work of that organization. When the Missouri State Board of Horticulture was created Mr. Todd was appointed as one of the members of the first board, and was succeeded by Mr. S. Y. Thornton when his time expired.

T. H. Todd was in every way a good citizen—not merely a man who was negatively good, because of the things he did not do, but he was active in every good work. He was one of the oldest and best friends of The Fruit-Grower; he subscribed when our paper was first published and never lost an opportunity to say a good word for it. Missouri lost a gentleman of the old school and of the very highest type of citizenship when T. H. Todd died, and those who knew him will mourn his death for a long time.

Results of Egg Contest for December

In the National Egg Laying Contest which is being conducted at Mountain Grove, Mo., a total of 5,082 eggs were laid by the hens in December, or an increase of 60 per cent over the previous month. This does not include quite a number of eggs laid on the floor, soft shells and unmarketable eggs. One Black Langshan pullet laid 29 eggs in 31 days, and a Buff Orpington pullet and a S. C. Red pullet have laid 50 eggs each in the two months. The greatest number of eggs gathered any one day was 211. We look for a decrease in January. For the first seven days of January, the ground was covered with snow, and the thermometer stood from 4 to 17 below zero.

The twelve highest pen records for December are as follows:

	Eggs
Pen 103—S. C. Reds	110
Pen 112—Black Orpingtons	105
Pen 96—S. C. Reds	100
Pen 123—Black Langshans	96
Pen 59—Silver Wyandottes	93
Pen 113—S. C. W. Leghorns	92
Pen 118—Buff Orpingtons	91
Pen 92—Buckeyes	91
Pen 54—Buff Orpingtons	88
Pen 64—Silver Wyandottes	88
Pen 100—S. C. Reds	87
Pen 22—S. C. W. Leghorns	87

The leading pen for December averaged 22 eggs per hen for 31 days. This entitles Pen No. 103 S. C. Reds of H. E. Cole's, of Winter Park, Fla., to the silver cup for the best pen record for December. This record is nothing startling or anything especially to be boasted of, but we consider it very good for a pen of five birds during the month of December, and inasmuch as the birds came from all climates and all classes of breeders and farmers.

It is not our object to prove that one variety is better than another; in fact, we do not think this contest will lead to any such conclusion. But we do believe it will show more forcibly than ever that there is more in the strain than there is in the variety. It will show that any breeder by careful selection and breeding can double his output and double his profit without materially increasing his expense for stock, houses, feed or equipment.

The standing of a number of the pens is rapidly changing, and those that are now in the lead will have to fight to keep their places. Some of the pens which were leading in November dropped behind and many of those which made a poor showing for November made splendid records for December. These changes will undoubtedly continue throughout the year, and you cannot even begin to guess at the final results for several months yet.

Renew your subscription today.

"How's Your Neighbor's Orchard?"

A most cordial and generous response came to our appeal last month in which we asked the question, "How's Your Neighbor's Orchard?" That question was asked as the result of a suggestion made by one of our subscribers. He said that his neighbor did not take care of his orchard, and requested that we send the neighbor a sample copy of The Fruit-Grower. Then, if the neighbor did not subscribe, the subscriber said he would pay for the subscription, in order that the neighbor would be enabled to get in line with progressive methods, through reading The Fruit-Grower.

We asked all of our friends who had unprogressive neighbors, in whose orchards insects and fungi are propagated for the entire township, to send us the names of their friends who would be benefited by reading The Fruit-Grower in order that we might send them a sample copy and ask them to subscribe.

We expected some replies and some names, but the returns have been extraordinary. Hundreds of names have come, from all parts of the country, being sent by progressive men and women who know The Fruit-Grower can help their friends and neighbors as it has helped them.

The vital, bristling facts and helpful articles in The Fruit-Grower make a powerful aid in helping you to awaken an interest among your neighbors in spraying, grading and packing their fruit, so as to put your section in the fore-front of modern orchard practice.

This is a wholesome spirit of co-operation. The January issue of The Fruit-Grower was one of the most important issues of the year. Its descriptions of successful spraying methods and of orchard pests are invaluable to every one who has an orchard. So heavy has been the demand for extra copies of this important number that we have been required to print another edition of it so as to supply all of the new subscribers. Still another run may be necessary, but we will make it willingly, as we realize its importance and the assistance it will be to you in helping your neighbor and improving your locality.

We invite you to grasp this exceptional opportunity to aid in the advancement of orcharding in your neighborhood. We urge you to send us the names of all of your friends who would be benefited by reading The Fruit-Grower. We will send them a sample copy and ask them to get into The Fruit-Grower Family, where they also can share in the good things that are in store for the season of 1912. Send their names now, so they will have opportunity of getting one of the unequaled January numbers. Address

The Fruit-Grower
Sample List :: St. Joseph, Mo.

Too Late for Classification

Local representative wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L420, Marden Building, Washington, D. C.

As much as $1,000 per acre has been made from our berries. McDonald berry earlier than Harvest, twice as productive. Dallas, Robinson, Jordan and others. All fine everywhere. Tree fruits. Write for catalogue. Fitzgerald's Nursery, Stephenville, Texas.

Ozarks—Fruit prospects in Benton County, Arkansas, were never better. Orchards, fruit and farm land on the easiest terms; close to good town. Still cheap, but advancing rapidly. Write us for descriptions, terms, etc. Banks & Adcock, Hiwasse, Ark.

For Sale—S. C. Buff Leghorns. Some fine show birds. A lot of magnificent cockerels and pullets, all prices. My old birds are select matings from the best breeders in America. Mrs. Anna H. Baldwin, Keswick, Ia.

Why Kellerstrass White Orpingtons? See my unique booklets. Five peerless breeding pens, scoring 94 to 96 1-4. Fine pullets for sale. W. C. Snyder, Bunceton, Mo.

Ancona Cockerels of Quality—Have a choice lot. Write me stating kind of bird wanted. J. B. Firestone, Spencer, Ohio.

PRUNING Book by Professor Bailey. Tells everything about pruning. You need it. Price $1.50. The Fruit-Grower, St. Joseph, Mo.

Tree Protectors

As valuable in summer against sun-scald, hot winds, etc., as they are in winter against cold and rabbits. Recommended by leading orchardists and horticultural societies. Can be left on throughout the year. A cheap, effective protection. **Oo not wait until rabbits and mice ruin your trees.**

BASKETS

We are headquarters for Berry Boxes and Baskets of all kinds for fruit-growers. We carry "Diamond Market," "Square Market," "Oak Briggs," "Bamboo," "Hickory Stave." Write us about **Bushel Baskets. Write for prices today.**

St. Louis Basket & Box Company
ST. LOUIS, MISSOURI

In writing advertisers please mention The Fruit-Grower.

The Griesa Nurseries
OF LAWRENCE, KANSAS

are offering this spring an unusually fine and large stock of Fruit and Ornamental Trees. Write us at once. Get our Catalog and Price List Free.

"A word aptly spoken is like appies of gold in network of silver." When you write advertisers always mention **The Fruit-Grower**

Index to Advertisements in the February, 1912, Issue of The Fruit-Grower

Page

Alarm Clocks
Big Ben 33

Agents Wanted
Bigler & Co. 68
National Realty Co. 77
Nebraska Farm Journal 75
Shores Mueller Co. ....3rd cover
Wendelken, A. C. 75
Wescott, Geo. F. 75

Apple and Cherry Pickers Apparatus
Richardson Cherry Picker Co. 48

Automobiles
Box 275 76
Brown, I. F. 76
Burg, Joseph Carriage Co. 76
Case, J. I. T. M. Co. 7
Day Auto Co. 2
Goodyear Tire & Rubber Co. 30
Hudson Motor Car Co. 47
International Harvester Co. 52
Owen, R. M. & Co. 38-39
Sears, Roebuck & Co. 53
White Compaay, The 46

Books
Burpee, W. Atlee 21
Dorn, J. C. 32
Fruit-Grower (Guide Book) 65
Ghormley, W. 48
Hummel, S. H. 69
Philo, E. R. 69
State Board of Agriculture 64
Stillwell, E. W. Co. 63

Bone Cutters
Humphrey & Son 69
Mann, F. W. 69
Wilson Bros. ....3rd cover

Buggies and Harness
Aniser Harness Co. 40
Elkhart Carriage & Har Mfg. Co. ..18
Johnston, Slocum Co. ....3rd cover
Mutual Carriage & Har Co. 32
Ohio Carriage Mfg. Co. 18

Canning Outfits
Northwestern Steel & Iron Wks. ..33
Raney Canner Co. 63

Cans and Canning Supplies
Raney Canner Co. 63

Cement Machinery
Farmers Cement Tile Machine Co. 8

Cider Presses
Hydraulic Press Mfg. Co. 18
Monarch Machinery Co. 45

Commission Merchants
Coyne Bros. 32

Cream Separators
American Separator Co. 63
De Laval Separator Co. 27
Smyth, John Mer. Co. 69

Cultivators
Allen, S. L. Mfg. Co. 17
Barker Mfg. Co. 21
Cutaway Harrow Co. 16
Deere, John & Co. 26
Johnston, W. A. 40
Light Draft Harrow Co. 16
Mendenhall, E. G. 53
Nash, Duane H. 17
Ulrich Co. 64

Farm Lands & Real Estate
American Investment Ass'n 75
Banks & Adcock 77
Box 65 75
Box 324 75
C. & O. Ry. Co. 70
Cen. California Traction Colonies. 75
Cleveland, Frank P. 75
Clover Crest Fruit Farm 75
Cramer, Wm. C. 75
Ernst, Chas. 75
Farwell, F. O 70
Fruit-Grower (Morrisania) 8
Florida East Coast Realty Co. ..75
Fox Hall Farm 75
Fredricks Realty Co. 75
Gerhart, F. H. & C. B. 75
Greef & Kelley 75
Greef & Kelley 70
Grower, W. F. 75
Hanson & Son 64
Hail, D. D. 75
Heacock, F. J. 75
Hickman, W. T. 76
Hinchee, G. W. 75
Holloway, D. 75
Houston, J. S. 75
Humphreys, J. E. 75
Interlaken Realty Co. 75
Isch, A. 75
Jantha Plantation Co. 76
Loretto Realty Co. 75
Lott the Land Man 70
McBurney, B. F. & Co. 70
McDonald Land & Mining Co. 70
McNair, A. C. 75
Magie, H. 75
Merritt, J. E. 64
Mexican Isthmus Land Co. 71
Monte Vista Realty Co. 75
Moore, W. J. 75
N. & W. Ry. Co. 71
North Tampa Land Co. 43
Owner, care Fruit-Grower 75
Parsons, A. N. 75
Polling, Theodore 75
Real Estate Salesman Co. 75
Reeve, W. S. 75
Rowell Fruit Farm 75
Sanderson 75
Scott, Pryor T. 75
Shasta Land Co. 75
Southern Ry. Co. 71
Seaboard Air Line Ry. Co. 71
Shenandoah Valley Land Co. 75
Smith, S. M. 75
Smith, W. G. 75
Stence, Thomas 75
St. Louis & Southwestern Ry. 64
Strout, E. A. Farm Agency 64
Terrell Land & Dev. Co. 64
Townsend, Dr. M. L. 75-75
Voorhees, Philip 75
Welsh, James B. Realty Co. 70
Weber, R. H. 75
Webster, E. C. & J. F. 75
Welch, J. Hart 75
White, E. F. 75
Wilson, J. A. 76
Wilson, Jot M. & Son 76
Woodward, J. 75

Farm Publications
Curtis Pub. Co. 15
Farm Journal 67
Fruit-Grower (February Bargain) 3
Fruit-Grower (Bond) 10
Fruit-Grower (Almanac) 50
Fruit-Grower (Small Fruits No.) .71
Homeseeker Pub. Co. 70
Intermountain Fruit Journal 63
Market Growers Journal 49
Red Journal 75
Up-To-Date 54

Fertilizers
Commercial Acid Co. 19
German Kali Works 28
Myers, Wm. S. 16

Food Products
Postum Cereal Co. ..6-10-11-34-35

Fruit Packages
Bacon & Co. 54
New Albany Basket & Box Co. 48
Pierce-Williams Co. 24

Gasoline Engines
Wm. Galloway Co. 53
Schmidt Bros. 55
Smyth, John M. Mdse. Co. 18
U. S. Engine Works. ....3rd cover

Grading Machines
Baker Mfg. Co. ....3rd cover

Page

Help Wanted
Huecker, Fred 76
Morse & Kent 76
Sales Ass'n 76
Shaw 75
Sheldon, Thos B. 76
Southern Ry. 76

Incubators & Poultry Supplies
Belle City Incubator Co. 66
Boldts Poultry Remedy 75
Barnes, H. E. & C. S. 75
Conkey, G. E. & Co. 75
Conniscliffe Poultry Farm 75
Des Moines Incubator Co. 68
Essex, Robt. Inc. Co. 69
Eureka Incubator Co. 69
Golden Rule Incubator Co. 75
Hedberg, Carl J. 37
Ironclad Incubator Co. 68
Johnson, M. M. 66
Knudson Mfg. Co. 76
Knudson Mfg. Co. 66
Lee, Geo. H. & Co. 66
Mankato Incubator Co. 68
Ohlo Marble Co. 69
Owen, C. G. 75
Prairie State Incubator Co. 68
Rayo Incubator Co. 66
Right Incubator Co. 68
Sanborn, Dr. Nathan 75
Savage, M. W. 66
Smyth, John M. Mdse. Co. 69
Starr, A. E. 75
Thompson, S. C. 69
Tulane Incubator Co. 75
U. U. Co. 75
White, Bob Co. 75
Wyandot Refineries Co. 75
X Ray Incubator Co. 68

Implements and Tools
Allen, S. L. Mfg. Co. 58
Automatic Jack Co. ....3rd cover
Bateman Mfg. Co. 55
Bostrom, Brady Mfg. Co. 55
Cutaway Harrow Co. 55
Deere, John, Plow Co. 26
Johnston Harvester Co. 16
Luther Grinder Mfg. Co. 55
Myers, C. A. & Co. 63
Stewart Skinner Co. 63

Insecticides
Ansbacher, A. B. 19
Blanchard, Jas. A. 51
Bowker Insecticide Co. 45
Commercial Acid Co. 76
Devoe & Raynolds 6
Entomoid Chemical Co. 76
Gardiner-Johns Co. 48
Hemingway's London Purple Co. ..11
Horticultural Chemical Co. 18
Interstate Chemical Co. 19
Michelson Kill-Em-Quick Co. 54
Pratt, B. G. & Co. 56
Rex Co. 8
Sherwin-Williams Co. 57
Taylor Instrument Co. 19
Vreeland Chemical Co. 19

Ladders
Bacon & Co. 54

Lighting Systems
Best Light Co. 61
Bright Light Co. 61
Home Supply Co. 61
Mantel Lamp Co. 61
Radiolite Co. 54
Sun Light Co. 61
Sunshine Lamp Co. 61

Live Stock
Bowersox, M. L. & Co. 76
Falkey, Luther 76
Hoyt, W. A. 76
Wickersham, G. H. 76
Worley, Clyde M. 76

Lumber and Building Materials
Chicago Wrecking Co. 62
Gordon Van Tine Co. ....back cover

Manure Spreaders
Wm. Galloway 50

Nurserymen
Allen Bros 48
Allen, W. F. 48
Anderson, P. A. 75
Baldwin, O. A. D. 49
Bauer, J. A. 29-58
Benson Omaha Nurs. 48
Berckmans, P. J. 42
Berry, P. D. 10
Berrydale Exp. Gardens 28
Boonville Nurs. 54
Brunswick, M. & Co. 48
Buteyns, M. C. 75
Capps Bros. 75
Cathcart, Alva 75
Cash Nurs. 64
Chattanooga Nurs. 58
Cooper, Samuel 25
Dodge, Blachley Co. 27
Ellwanger & Berry 28
Farmer, L. J. 22
Farmers Seed & Nurs. Co. 59
Fitzgerald Nurs. 77
Flansburgh, C. N. 75
Flansburgh & Potter 48
Flansburgh, C. N. & Son 48
Fremont Nurs. 48
German Nurs. & Seed House. 1A
Gibson, W. R. 75
Glen Brothers 32
Grand Mere Nurs. 48
Grand Mere Nurs. 75
Grays Nurs. 75
Green's Nurs. 28
Griesa Nurs. 77
Griffing Bros. Co. 36
Griffing Bros. 75
Hall, John W. 48
Harbor Springs Nurs. 29
Harrison's Nurs., C. S. 44
Harrison's, J. G. & Son 52
Hawkeye Nurs. 75
Henry, D. J. 49
Hill, D. Nurs. Co. 48
Hinshaw, J. W. 21
Holsinger Bros. 28-48
Hopedale Nurs. 25
Horn, A. 48
Hubach, Louis 48
Humphrey Nurs. 75
Hurlburt, C. M. 29
Hurst, H. L. Mfg. Co. ..2nd cover
Jones, J. W. & Son. 76
Kellogg, R. M. 59
Knight, David & Son 22
Koell, W. H. 75
Krider, Vernon H. 75
Jones-Post Merc. Co. 18
Kaufman, E. F. 76
Louisiana Star Nurs. 75
Lovett, J. T. 21
McNair, A. C. 75
McNallie, D. Plant & Fruit Co. ..29
May, L. L. & Co. 45
Mayers Plant Nursery 48
Munson Nurs. 29
Myers, P. J. 25
New Haven Nurs. 20
Norton, Arthur L. 21
Peru Nurs. 17
Perry, Nurs. Co. 75
Pomeroy, Norman 26
Randall, Alton E. 75
Riehl, Edwin H. 50
Roeder Nurs. 48
Rupert, W. P. & Son 26
Scarff, W. N. 21
Scheer Nursery 36
Seligman Plant Co. 29
Sheboygan Ginseng Gardens 75
Shenandoah Nurs. 14
Stark Bros N. & O. Co. 4
Storrs & Harrison 59

Page

Smith, Benj. F. 75
Stirdivant, Geo. 75
Sunnyslope Nurs. 50
Tennessee Nurs. Co. 77
The Newburys 75
Thomas, W. W. 22
Thompson, Mark 75
Turkey Creek Nurs. 75
Wallace, J. T. 3
Waller, O. C. 29
Westage, H. L. 75
Westminister Nurs. 21
Wichita Nurs. 75
Wiley, H. S. 76
Winfield Nurs. 75
Weston, A. R. & Co. 59
Whitten's C. E. Nurs. 24
Wildhagen Strawberry Beds 45
Winfield Nurs. 9
Wood, Allen L. 59
Wragg Nurs. Co. 58
Youngers & Co. 29

Orchard Heaters
Cederborg Engineering Co. 50
Frost Prevention Co. 44
Hamilton Orchard Heater Co. ..23
Orchard Supply Co. 10
Rex Co. 8
Richardson, Geo. C. 10-13
Round Crest Orchard Heater Co. 3
Taylor Instrument Co. 24
Underwood & Viles 50
Ward Orchard Heater Co. 76

Paints
Rice, A. L. Mfr. 63
Lowe Paint Co. 10
Smyth, John M. Mdse. Co. 27

Paper Pots
Crosby & Son 76
Crosby, P. B. & Co. 48
National Paper Box Co. 32

Positions Wanted
Address 802 Ash St. 76
Wilson, Hershel 76

Poultry
Adams, G. D. 72
Allen, S. L. 73
Alleshouse, J. A. 73
Ames, Henry 73
Andrews, E. L. 74
Anthony, Joseph 74
Arrington, E. F. 72
Bailey, B. M. 73
Bailey, Enoch 72
Baldwin, Mrs. Anna H. 72
Borden, E. H. 73
Barlow, A. G. 74-74
Barrie, R. 74
Bear, J. W. 72
Beaumont, Floyd S. 74
Beechler, L. 72
Bennett, Edwin A. 74
Berger, H. C. 74
Berry's Poultry Farm 69
Betts, Claudie 72
Bliss, D. J. 73
Blum Hatchery 74
Boss, Robert C. 73
Boomgaarns Farm 73
Bowman, Roy 73
Branch Valley Poultry Yards. 73
Brendle, H. S. 73
Brennerman, D. S. 74
Bremer, J. J. 69
Briggs, Edgar 72
Brill, F. R. 73
Briner, W. H. 73
Brock Bros. 74
Brocker, Robert 73-73
Brogden, Thomas 72-72-73
Brook Sanitary Hennery 73
Brooks, Edgar 72-73
Brookside Poultry Farm 72
Brown, Fred 74
Brown, Harvey 73
Bruen, D. L. 74
Bruns, John F. 73
Buchanan, B. T. 73
Buckel Poultry Yards 74
Buff Rock Poultry Farm 73
Burk, A. P. 74
Burke, T. H. 73
Burkman, Amil 73
Burnett & Doolittle Hatchery Co 74
Byrd, Mrs. J. N. 73
Caldwell, H. A. 73
Carlile, J. C. 74
Carnahan, Mrs. Frank 72
Carpenter, F. E. 74
Carson, Mrs. A. L. 72
Carter, E. E. 72
Cary's Farm 73
Cavanagh, Miss Edith. 73
Cedar Hedge Poultry Farm. 74
Cedardahl Poultry Farm 74
Chamberlain, W. F. 68
Chelton, Edith 73
Clark, M. A. 73
Clark, Will 72
Clymer, C. Henry 73
Cocklin, W. J. & Son 73
Colby, C. 73
Cole, John, M. D. 72
Cole's Poultry Farm 72
Congdon, W. A. 73
Connisclifte Poultry Farm 74
Conradt, C. G. 72
Coons, Frederick 72-73
Cowan, W. E. 73
Cramer, Wm. C. 74
Cronk, N. P. 74
Crosby Bros. 73
Crow Creek Poultry Farm 72
Crystal Orpington Farms 74
Crystal Poultry Yards 73
Culp, Frank S. 73
Cunningham Bros. 72
Curtis, Will 73
Custer, Oliver 73
Dahl, Wm. C. 72
Daman, F. J. 74
Davis, A. V. 73
Davis, George W. 75
Davis, Herold E. 72
Davidson, M. H. 73
Dinterman, Mrs. Ferne 72
Densmore, C. E. 74
Dietrich, Dr. Thomas 74
Divinia, S. T. 71
Doolittle, L. A. 73
Dougherty, W. H. 73
Doyle, John 74
Driggs, James A. 73
Durby, H. S. 74
Dysart Bros. 74
Eastman, H. B. 74
Edgedale Poultry Plant 73
Edgert, W. W. 72
Edgewood Farm 73
Elseuman, J. C. 72
Elk Ridge Poultry Yards 74
Ellerman, Geo. N. 74
Elm Park Place 72
Emwood Farm 74
Enterprise Yards 74
Essig, A. 72
Evitts, L. 72
Failing Poultry Farm 74
Fairholm Poultry Yards 72
Frakes, Wm. 74
Fenn, A. A. 72
Ferrill, L. J. 74
Fetrow, Robt. 74
Fewtrell, Thos. 72
Fisher, G. T. 73
Fisse, Henry Jr. 73
Forecastle Farm 73
Forest City Cornish Yards 72
Forest View Poultry Farm 73
Forselman, P. A. 73
Foster, Fred 74
Fowler Egg Farm 72
Fowler, Miss Susie M. 73
Fox, Franklin 73

Page

Frantz, O. C. 72
French & Hepp 74
Freshe, P. W. 75
Fries, Max 74
Gallatin, J. L. 74
Garbee, John 74
Garnett, F. L. 72
Gebhart, Will 76
Gee Whiz Fruit & Poultry Farm. 72
Gee Whiz Fruit & Poultry Farm. 73
Gerhard, F. Hellman 74
Giles, R. E. 74
Gillum, W. W. 73
Glenoak Poultry Yards 74
Glesenkamp, A. W. & Son 74
Golden Gate Farm 72
Goldenrod Poultry Farm 72
Granite State Poultry Yards 73
Granite State Poultry Yards 72
Gray, D. E. 73
Green, Horton 72
Green, J. Ed 74
Grelder, B. H. 69
Griffith, Paul & Gordon 74
Griffith, W. I. 72
Grimes, O. T. 73
Hafner, John J. 74
Hall, B. F. Jr. 73
Hall, D. E. 73
Hamilton, J. C. 73
Hamilton, Mrs. W. S. 73
Hammond, Ward 72
Hampton, Wade 74
Hanna, Mrs. Ad 73
Hanna, L. B. 73
Harbison, W. H. 73
Hardin Poultry Farm 73
Hardman, W. H. 72
Harris, Lee 74
Harshbarger, Mrs. Wm. 74
Hartman, Geo. 69
Hart, W. D. 72
Harter, E. M. 74
Haskin, H. H. 73
Haynes, T. 72
Heabler, K. J. 74
Heaps White Orpington Farm. ..73
Hedberg, Carl J. 72
Heller, Mrs. L. W. 73
Heilman, Frank 72
Heinrichs, Wm. A. 74
Heitkamp, Henry 73
Helpman, J. L. 72
Hess, Wm. A. 73
Highland Poultry Farm 72
Higley, T. F. 73
Hillcrest Farm 72
Hochstadter, J. A. 72
Hockstedler, J. A. 72
Hoffman 74
Holscher, John 72
Hopkins, E. E. 74
Hoppe, Wm. F. 73
Hortons, J. D. Poultry Farm. ..72
Hosmer, C. W. 72
Howland, R. W. 73
Hoyle Poultry Farm 72
Huecker, Fred 72
Huested, Mrs. Chas. 73
Hummer, C. 73
Hurley, S. L. 73
Ideal Poultry Farm 74
Ingraham, C. G. 72
Irons, J. H. 73
Jackson, Mrs. T. A. 72
Jaqua, Louella E. 73
Jones, Fred Mrs. 72
Jones, Mrs. D. C. 74
Joseph, J. B. 72
Jackson, Prof. F. H. 74
Kahler, B. F. 74
Kalvin, Dr. Henry M. 74
Kapphaber, C. J. 75
Kean, Thos. H. 73
Keefer, J. H. 73
Kellerstrass Poultry Farm 72
Kelley, H. D. 72
Kelm, Fred 72
Kenworthy, Mrs. J. R. 72
Ketcham, R. S. 72
Kilpatrick, Frank 74-74
King, G. M. 73
Knapp, Arthur L. 72
Knodle, B. C. 73
Knox, C. W. 73
Kollenmayer, J. H. 72
Koppstein, A. W. 73
Kotthoff, Wm. 74
Krebill, A. D. 73
Krichbaum C. V. 72
Lafreniere, N. L. 75
Lamson, H. 72
Lang, C. F. 72
Lange, H. M. 73
LaRue, R. S. 74
Latcham, S. V. 73
Laughlin, Charley 72
Leggett, G. D. 74
Lehman, George 74
Leidy, M. H. 74
Le Tevre, J. 73
Lewis, L. 73
Lilly White Poultry Farm 72
Little, Mrs. 73
Little Sioux Poultry Yards. 72
Long, Hiram 74
Lorenz & Co. 74
Loutzenhiser, H. 73
Lucas Bros. 73
Lykens Valley Farm 72
McClure, Charles 73
McConnell, J. Bert 74
McCue, Leslie K. 69
McDavitt, Leo W. 72
McKean, Roland 73
Mack's Poultry Farm 74
Mahle, G. C. 72
Mandeville, S. D. 74
Maple Leaf Poultry Yards. 72
Maplewood Poultry Farm 74
Martin, Dr. J. H. 73
Mason, C. C. 73
Mattison, Joseph E. 72
Medaris, Troy 73
Meek, Frank 74
Merihen, L. E. 72
Merrill, O. F. 72
Meyers, E. A. 73
Michelson, Martin 74
Miller, K. J. 72-73-73-74
Miller, M. L. 74
Minkel & Co. 74
Minorca Farm 72
Mitchell, G. A. 74
Mohr, S. K. 74
Moore, Mrs. Fred 73
Moore, J. L. 72
Morgan, B. F. 71
Morley, Mrs. J. D. 73
Mountain View Ranch 72
Mumpower, Mrs. L. 74
Murphy, Ed B. 74
Muskoday Farm 74
Myers, Mrs. Clyde 74
Myers, Mrs. J. W. 74
Nafziger, A. 72
Neel, E. Leon 74
Neville Poultry Farm 72
Newcomb, F. S. 72
Nichols, E. J. 74
Niebur, C. A. 72
Norman, Calvin 74
North, D. P. 73
Oertel, Fred 71
Ohlo Hatchery 74
Ohio Valley Hatchery 74
Oldfield, Mrs. M. F. 74
Orchard Knob Poultry Farm 74
Orpington Farm 73
Orr & Dick 73
Overbeck, Benj. 73
Overson, Mrs. Christian 74
Firestone, J. B. 77
Snyder, W. C. 77
Baldwin, Mrs. A. H. 77
Ottawa County Hatchery Co. 74

Page

Page, C. A. 74
Page, S. H. 73
Palmer, Chas. M. 72
Pavey, B. 74
Peck, Frank F. 73
Penfield, H. J. 74
Peerless Poultry Farm 72
Perry, Chas. E. 72
Peterson, Aug. 72
Peterson, Otto, Jr. 74
Pfile, Henry 69
Pifer, W. C. & Son 72
Pigeon Dept., Hillhurst Farm ..75
Plymouth Rock Squab Co. 75
Pochling, H. G. 73
Porter, M. D. 73
Poseley, H. E. 74
Powell, C. D. 73
Premium Poultry Farm 74
Purfield, Wm. 73
Rambo, Mrs. I. 73
Ramsey, Mary 74
Red Bird Poultry Yards 73
Reed, Bernard 74
Reed, M. B. Dr. 73
Rehm, Alden 74
Reiff, Joseph 72
Reimers, Herman 73
Reynolds, H. V. 73
Rice, W. E. 72
Ridge Egg Farm 72
Ried, Phil J. 72
Roberts, Forrest 73
Roberts, Jas. 74
Robinson, James L. 73
Rogers, E. A. 74
Rose, Mrs. Daisy 72
Rose Lawn Poultry Yards 73
Rosland Poultry Yards 73
Roth, Otto M. 73
Ruark, W. P. 73
Ruble, Harry E. 69
Russell, W. S. 73
Ryan, Mrs. Mary 74
Salyards, R. S. 73
Schmied Bros. 72
Schoenbohm, Rev. F. 73
Schowe, Henry Jr. 74
Schurman, Ed J. 72
Seibert, D. W. 72
Seidel, Wm. 73
Seiple, Monroe 74
Seymour, A. H. 74
Shallcross, S. F. 72
Shanander, Selma 73
Shaw, Ellsworth 74
Shaw, F. L. 74
Shaw, Joseph 74
Sheka, W. H. 74
Sheldon, D. L. 74
Shelly, P. G. 74
Shepard, Geo. 74
Sheppard, Cecil 72
Shirley, Sylvester 72
Sinsabaugh, A. M. 73
Skillman, John 73
Skinner, J. M. 73
Smith, A. Franklin 74
Smith, C. R. 74
Smith, Oscar 73
Snowball Poultry Yards 73
Snyder, H. A. 73
Snyder, Jas. R. 74
Souder, H. A. 74
South Kenton Poultry Farm 74
Southside Poultry Yards 74
Spence, J. F. 74
Spitze, Geo. L. 73
Sprague Poultry 73
Stackhouse, C. M. 72
Standard Bred Poultry Farm ..73
Stevenson, Marion 73
Stark, O. F. 73
Stick, Harley R. 74
Stock, Verne D. 74
Street, L. R. 74
Sunnyslope Nurs. 73
Sunnyslope Poultry Farm 74
Superior Poultry Farm 73
Swedburg, N. E. 73
Sweet, Chas. T. 73
Teasley, Mrs. D. C. 74
Teegarden, H. A 72
The Fowlers 73
Thurman, Wm. 73
Turman, Dr. Walter 73
Turner, F. G. 72
Turner, Z. T. 72-73
Tuttle, John 74
Twin Brook Farm 72
Van Cleve, J. W. 74
Vanderbilt, C. K. 74
Vanderhoof, R. H. 73
Valley View Poultry Farm 75
Van Rensselaer, L. D. 74
Voirol, Herman C. 74
Waldron, Edw. F. 74
Walnut Grove Poultry Farm. 72
Walnut Hill Hatchery 74
Ward, D. J. 73
Ware, Frank 73
Wardwell Poultry Yards 73
Watertown Poultry Farm 74
Watson, Ira 73
Weber, W. A. 66
Wegener, E. H. 73
Welch, Harry 73
Wells, E. E. 72-73
Wells, M. E. 72
Wells, M. G. 70
Wells, Oscar 72-74
Wenz & MacKenzie 74
Wheatland Farm 73
White, Chas. 72
White, S. A. 74
Whitney & Son 74
Wilbert, F. C. 74
Williams, A. D. 74
Willis, J. H. 72-73
Wilson, Ralph 71
Wingo, Geo. W. & Son 73
Wise, Julia E. 74-74
Wood, F. F. 73
Wood, Mrs. John 72
Wood, Mrs. W. S. 72
Woodruff, Dr. R. O. 74
Worl Bros 75
Wright, W. F. Sr. 73
Wyandotte Ranch 74
Yaggy, Henry 74
Yarmond Poultry Farm 72
Yates, J. W. 74
Yoder, Levi D. 74
Yost, C. O. 73-74
Young, Theo. B. 74
Ziemers Poultry Farm 74
Zimmer, C. H. 72
Zurburg, C. H. 74

Pruning Tools
Fruit-Growers Saw Co. 54
International Tool Co. 54
Monarch Pruner Co. 54
Rhodes Mfg. Co. 24
Tiffany, Carroll B. 77

Railroad Companies
C. & O. Ry. Co. 70
N. & W. Ry. Co. 71
Seaboard Air Line Ry. Co. 71
Southern Ry. Co. 71
St. Louis & Southwestern Ry. ..64

Roofing Materials
Barber Asphalt Paving Co. 55
Mastic Wall Board and Roofing Mfg. Co. 62
Smyth, John M. Mdse. Co. 25

Seedsmen & Florists
Anderson, A. C. 19
Archias Seed Co. 29
Beck & Beck 75
Berger, H. H. & Co. 44
Berry, A. A. Seed Co. 26
Buckbee, H. W. 24-26
Burpee, W. Atlee 21
Burrell, D. V. 24

Page

Chesmore Seed Co. 10
Childs, John Lewis 59
Conard & Jones 75
Coles Seed Store 25
Cowee, Arthur 75
Des Moines Seed Co. 26
Elkenberry Bros. 54
Farmers Seed & Nurs. Co. 59
Ferry, D. M. & Co. 59
Field, Henry, Seed Co. 14
German Nurs. & Seed House. 1A
Gilbertson, A. O. 27
Great Northern Seed Co. 59
Gregory, Frank H. 26
Griswold Seed Co. 26
Halbert, H. A. 75
Heller Bros. 63
Henderson, Peter 9-11-13
Hickory Seed Co. 26
Hoffman, C. W. 75
Iowa Seed Co. 59
James, R. H. 29
Linder, M. A. 70
Livingston Seed Co. 58
Maule, Wm. Henry 59
May, L. L. & Co. 45
Mills Seed House 29
Pacatte, Emil 75
Peppard, J. G. Seed Co. 29
Riebel, F. M. 75
Ross Seed House 36-45
Rudy-Patrick Seed Co. 59
Salzer, John A. Seed Co. 25
Stillman, Geo. L. 54
Stokes, Walter P. 27
Teas, E. Y. & Son 75

Sprayers and Appliances
American Sprayer Co. 20
Bateman Mfg. Co. 57
Bean Spray Pump Co. 56
Beck Sprayer Co. 42
Brown, E. C. & Co. 19
Carbondale Instrument Co. 57
Crown Specialty Co. 36
Cushman Power Sprayer Co. 11
Deming Co., The 1B
Detroit Engine Co. 28
Fairbanks, Morse & Co. 44
Field Force Pump Co. 23
Friend Mfg. Co. I
Galloway, Wm. 37
Goulds Mfg. Co. 26
Hamilton Rubber Co. 54
Hardie Mfg. Co. 42
Hcesen Bros. Co. 40
Morrill & Morley 49
Myers, F. E. & Bros. 56
Nebraska Apple Culture Co. 76
New Way Motor Co. 17
Owen, W. H. Sprayer Co. 54
Peppler & Son, Thos. 55
Rex Co. 8
Rochester Spray Pump Co. 57
Smith, D. B. & Co. 54
Spramotor Co. 56
Stahl, Wm. Sprayer Co. 33
Standard Stamping Co. 17-59
Tyler Mfg. Co. 18

Steel & Rubber Shoes
Mishawaka Woolen Mfg. Co. 3d cover

Stoves and Ranges
Majestic Mfg. Co. 12

Stump Pullers
Hercules Mfg. Co. 41
Milne Mfg. Co. 18

Talking Machines
D. & R. Record Co. 49
Victor Talking Machine Co. 61

Tanks
Columbian Steel Tank Co. 20

Tree and Plant Protectors
Burlington Basket Co. 10
Davis, John W. Jr. 9
National Paper Box Co. 44
St. Louis Basket & Box Co. 77

Veterinary
German Distemper Remedy Co. .. 3
Lawrence Williams Co. ....3rd cover

Wagons, Wheels, Etc.
American Wagon Co. 31
Electric Wheel Co. ....3rd cover
Empire Mfg. Co. 55
Harvey Spring Co. 18
Split Hickory Wheel Co. 19

Water Supply Systems
Missouri Water & Steam Sup. Co. 63
United Pump & Power Co. 36

Well Drilling Machines
American Well Works 63
Keystone Well Works 49

Wind Mills
Stover Mfg. Co. 63

Wire Fencing and Gates
Advance Fence Co. 69
American Steel & Wire Co. 32
Brown Fence & Wire Co. 70
Colled Spring Fence Co. 70-70
Interlocking Fence Co. 69
Kitselman Bros 69
Kokomo Fence Co. 70
Mason Fence Co. 69
Ottawa Mfg. Co. 70
Perfection Automatic Gate Co. 9
Tiger Fence Co. 70
Up-To-Date Mfg. Co. 70
Ward Fence Co. 70

Miscellaneous
Allcock Plasters 63
Allen Mfg. Co. 62
American Writing Machine Co. 60
Barber, H. L. 76
Bateman Mfg. Co. ....3rd cover
Brandt Cutlery, G. R. & Co. 54
Brooks Rupture Appliance Co. 76
Burnham, Munger Root Co. 33
Chandlee & Chandlee 63
Coleman, Watson E. 63
Collette Mfg. Co. 62
Collings, Capt. W. A. 76
Cox, Herbert R. 76
Cox, J. & Co. 76
Dale Watch Co. 63
Davis, H. 76
Dodge & Zwill 60
DuPont Powder Co. 25
Farwell, F. O. 76
Fruit-Grower (Catalog) 45
Gardner Office Supply Co. 37
Gregory, J. A. 76
Jones, T. M. 76
Kaldenberg, T. H. 76
Keller, W. L. 76
Keystone Photo Co. 76
Kiger, Orvil 76
Lowe Novelty Co. 76
Marlin Firearms 27
Mary Jane Garment Co. 76
Masters, C. L. 24
Monitor Sad Iron Co. 74
National Co-Operative Realty Co. 71
Oakwood Mfg. Co. 61
Orvellas, John 76
Old Dutch Cleanser Co. 60
Palace Mfg. Co. 61
Pike, E. C. 76
Plapa Laboratories 76
Rife Engine Co. 50
Roberts, N. E. 76
Round World Postal Club 76
Sanders, H. J. 76
Savage, M. W. 25
Slingerland School of Music 45
Sperry, D. R. & Co. 62
Taylor Instrument Companies. 24
Townsend-Wyatt D. G. Co. 62
Wagle & Co., A. E. 76
Wilson Bros. ....3rd cover

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's Caustic Balsam

IT HAS NO EQUAL

For the Human Body —It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils, Corns and Bunions CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for

Sore Throat
Chest Cold
Backache
Neuralgia
Sprains
Strains
Lumbago
Diphtheria
Sore Lungs
Rheumatism and
all Stiff Joints

REMOVES THE SORENESS--STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle **Caustic Balsam** did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

Wanted

Farmer or Farmer's Son

with rig in every County to introduce and sell Family and Veterinary Remedies, Extracts and Spices. Fine pay. One man made $90 one week. We mean business and want a man in your County. Write us.

SHORES-MUELLER CO., Dep't 60 Tripoli, Iowa

REPRESENTATIVES WANTED

No matter where you live, your past experience, your capital, your age—

You Can **MAKE MONEY FAST**

—representing us in your locality. Our *Indestructible Hameless Horse Collars* sell themselves. Adjustable—width or length. No hames, pads or straps. Prevent galls; cure sore necks. Can't wear out. Write for liberal offer.

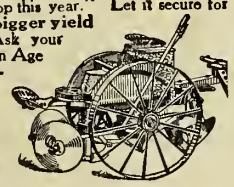
Johnston-Sloenm Co., 838 State St., Caro, Mich.

MORE POTATOES PER ACRE

Do you want to increase your potato crop 10 to 57 bushels per acre and thereby increase your profits $5 to $57 per acre?

The Iron Age Planter is the one machine with which an absolutely perfect stand can be obtained. At the Maine Experiment Station the yield where the Iron Age was used was 57 bushels per acre more than where its competitor planted. It makes no misses, no doubles, injures no seed.

In Idaho, Herbert Lambing, an Iowa Agricultural College Graduate, has gained attention by his big crops, due to scientific methods. He writes in part: "The *Iron Age* means just one half my crop this year." Let it secure for you a perfect stand, a bigger yield and more profit. Ask your dealer to show you the Iron Age Planter, with or without fertilizer attachment. Write us for special booklet and Mr. Lambing's complete letter. Both will interest you. Remember, this planter is but one tool in our complete line of Iron Age farm and garden implements. You should know them all.

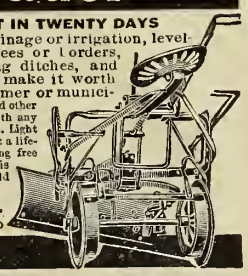


BATEMAN M'F'G CO., Box 5066 Grenloch, N. J.

20th Century Grader

SAVES ITS COST IN TWENTY DAYS

ittling ditches for drainage or irrigation, leveling land, making levees or borders, grading roads, cleaning ditches, and any other uses which make it worth n times its cost to f rmer or municipality. Has sage brush cutter and other ful attachments not found with any er grader. A one-man machine. Light strong—guaranteed. Will last a lifetime. Write now for interesting free ok telling how the use of this chine will increase the yield your crops.



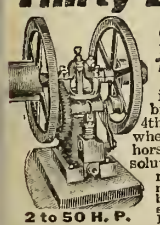
HE BAKER MFG. CO.
0 Hunter Bldg., Chicago

STOP! STOP! STOP!

Thirty Days Trial of United States Bonded Engine. Burns gas, gasoline, kerosene, distillate. Consider these

12--Advantages--12

1st, Pays for itself in fuel saving in short time. 2nd, No violent vibration. 3rd, Greatly reduced bulk. 4th, Easily portable; mounted anywhere. 5th, Every engine part and horse power guaranteed. 6th, Absolutely frost proof. 7th, Positively most economical running engine made. 8th, Only engine with pulley on both sides. 9th, Small pulley on cam shaft, for very slow machines. 10th, Perfect Lubrication, cooling & ignition 11th, Lowest cost engine in the world. 12th, Made by reputable firm, 60 years in business.



2 to 50 H. P. Wonderful New PumpingEngine

Send postal today for Illustrated Catalog.

United States Engine Works
1529 Canal St., Chicago, Ill.

CHOOSING A FARM

There are two primary considerations in choosing any farm. The first is the location and the second is the character of the farm itself. We shall only write of the location at this time.

Having found your farm, what are its surroundings? Does it have, or is it likely to have rural free delivery? This is important, for now-a-days the live farmer must keep daily pace with the market quotations, new agricultural ideas and the progress of the times in general. Is there a railway or a trolley line close by? Produce must move, for in the successful disposal of this lies the value of the land. Then, too, the progressive farmer and his family must get away from the farm now and then, not only for a breathing spell, but to mingle with others and to renew their inspiration as well as to gather new ideas from those more successful.

Is there a church close by, and what support does the community give it? The public spiritedness of a community will always show in the quality of its public buildings, and the interest and intelligence of a community may be judged by the quality of its ministers and teachers. While one may not care to attend church, yet good churches will have a tremendous influence on the character of a neighborhood. Especially will one find good schools in such neighborhoods, possibly a consolidated school if a village is not too close. What other social advantages are there, such as libraries, lecture courses, reading courses and social gatherings? Don't overlook these factors in choosing the place for your business and residence.

What market facilities have you and does the market require the kind of produce which is suited to your soil and climate? The quality of produce is often governed by the kind of customers one is serving. If near a manufacturing center, large quantities of fair quality will be required, but if near a wealthy community, the quantity of produce will not be large, but the quality must be of the best. Can you accommodate yourself to these requirements?

How distant is your market? If one has to ship, can refrigerator cars and such appurtenances be had? Will the length of haul and the consequent cost of shipping leave a sufficient margin for production? Oftentimes a wagon haul will preclude the production of some commodities. One cannot produce a large acreage of potatoes and team them a distance of ten miles to a shipping point. And if such hauls are to be necessary what is the character of the wagon roads over which they must pass? This is the most vital consideration of all. Two or three five or six per cent grades in the road will seriously impede ordinary wagon transportation, while a single sixteen per cent grade or a few muddy places will be almost prohibitive. The factor of ingress and egress or wagon roads is the most vital consideration when choosing a location to plant your home and business.

L. F. CHILDERS.
Idaho Experiment Station.

Further Experience With Western Tomato Blight.

My experience the past season with Tomato Blight has forced me to this conclusion: (for this locality at least) it will not pay to try to raise tomatoes without irrigation. Results at end of the season are practically the same as given in the September Fruit-Grower. The irrigated part of the patch has borne as heavy a crop of tomatoes as I ever saw, and there has been no further development of blight; while on the non-irrigated portion fully half the plants have died, and the balance have produced less than 20 per cent of a crop.

Now, I am not saying that irrigation is a sure preventative; but whatever tends to produce a healthy, vigorous growth is a help. For this reason plants should be started indoors very early and set in the field just as soon at it is safe. In this way they recover from the shock of transplanting before hot weather comes upon them.

At this stage of the work we find it very necessary to protect the tender young plants from the ravages of that "terror of the garden," the cut worm. To do this most effectually, we melt the tops and bottoms from tomato or other large size cans and press one down around each plant as we set them. The cans should be removed as soon as the plants get large enough for the leaves to extend over the sides or else the sharp edges will mutilate them. Cultivation should be started soon as the plants are set and a fine dust mulch kept on the ground all the time. Where one is prepared to irrigate, water should be turned on often enough to keep up a vigorous growth. Give plenty of water to soak the ground thoroughly, but be careful not to give too much, especially if your land is underlaid with clay or hardpan near the surface as the tomato is very susceptible to wet feet, and damps off very easily.

Everyone interested in the elimination of tomato blight should make a careful selection of seed for next year's planting. Select plants for seed-saving, which while healthy, vigorous and bearing a good crop of fruits, show the ideal characteristics of their variety as near as may be. If you have several varieties planted, you will, of course, save seed from that which has shown the greatest resistance to blight.

By careful attention to details I believe the Western rancher may still figure on a fairly good crop of tomatoes, and I wish that people, generally, could be awakened to a realization of the importance of this work. I intend to continue experiments along these lines another season, and trust that we may have reports from others on this subject.

The Red Ball Means Years of Quality and 8,000,000 Wearers

Every pair of the famous "BALL-BAND" Rubber Boots and Arctics and All-Knit Wool Boots and Socks is trade-marked with the RED ball.

Only the highest grade of materials and workmanship are allowed to receive this trade-mark.

This is the "BALL-BAND" standard. It has been in force from the very beginning.

"BALL-BAND" footwear has changed only in one direction—for the better.

This is why it has won more than eight million wearers—why these millions will not be satisfied with anything else.

We could save *one million dollars a year* by putting less quality into "BALL-BAND." The loss would not appear on the surface of our footwear.

But in all the years this company has not, nor will it ever cheapen the quality of its goods to meet competition.

Look for the RED BALL sign when you go to buy rubber footwear. Many dealers display these signs in their windows or store fronts for the guidance of the constantly increasing number who are asking about "BALL-BAND" footwear.

Whether you see the sign or not, you are sure to find the RED BALL trademark on all "BALL-BAND" goods. Insist on seeing it. It is your protection. Forty-five thousand dealers in all parts of the country sell "BALL-BAND" goods.

If your dealer cannot supply you, write us, mentioning his name, and we will see that you are fitted.

Mishawaka Woolen Mfg. Co.
Mishawaka, Indiana
"The House That Pays Millions for Quality"

Electric

The Only Wagon for Fruit Growers

There's a handiness and convenience about it that's impossible in high-wheeled wagons.

Why lift filled boxes, barrels, baskets and crates high into the air, only to lift them down again?

Get the Handy Wagon Habit

The low down Electric Handy Wagon is great for small fruit growers, great in the orchard. You can drive under trees where limbs are low without knocking the fruit off. Drive around and into places you can't go with high wagons. Saves half the hard work at spraying time, at fertilizing, in hauling trash, etc.

Broad tires do not cut into and rut soft ground. Make draft light. Steel wheels carry any load. Never any drying apart or tire setting.

Let us send you a book free to show you why you should have an Electric Handy Wagon. Suited to all farm hauling; a labor saver everywhere. Address

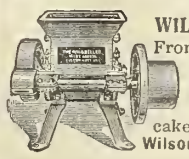
ELECTRIC WHEEL COMPANY
Box 57, Quincy, Ill.

In writing advertisers please mention The Fruit-Grower.

Make Your Own Fertilizer

At Small Cost with

WILSON'S PHOSPHATE MILLS



From 1 to 40 H. P. Also **Bone Cutters,** hand and power, for the poultrymen; grit and shell mills, farm feed mills, family grist mills, scrap cake mills. Send for our catalog.

Wilson Bros., Sole Mfrs., Easton, Pa.

Make $25 to $50 Weekly

selling the Automatic Combination Tool in your home county. A Fence Builder's Tool, Post Puller, Lifting Jack, Vice, Wrench, etc. Used by Farmers, Teamsters, in Factories, Mills, Mines, etc. Weight 24 lbs. Capacity 3 tons. No experience necessary. Free instruction. Write for special offer to live agents. Send no money. Name county where you live.

AUTOMATIC JACK COMPANY
Box 99 Bloomfield, Ind.

Our GRAND FREE MILLWORK CATALOG Has Saved the Public MILLIONS OF DOLLARS!

Over 5,000 Bargains in Building Material

Quality, Safe Delivery and Satisfaction Guaranteed or Your Money Back

More Than 100,000 Homes Built From Our Millwork and Lumber

Write for a copy of the great Home-Builders' Catalog, whose price reductions on high grade Millwork and Lumber have saved millions of dollars for the public. Get in touch with the Gordon-Van Tine Company, the big concern that, single-handed and alone, has carried on the people's fight against the greed of the Lumber Barons and the Retail Lumber Dealers. We sell enough building material every year to build a city of 20,000 homes. In the past five years we have sold Millwork and Lumber for more than 100,000 new homes.

We will ship from 1,200 to 1,500 full carloads out of our warehouses this year, and our less-than-carload shipments for the same period will run between 28,000 and 30,000. Over 40,000 Doors and 120,000 Windows, and other items of building material in like proportion, are annually shipped to all parts of the country from our mammoth plant in Davenport. All our Millwork is guaranteed up to the official standard of the Sash and Door Association.

$857.00 Buys All the Lumber and Millwork for this Fine 8-Room House Plan No. 121

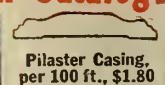
See How We Cut the Cost of High Grade Building Material!

The pictures and prices presented here give you some idea of the way we cut prices on Millwork, Lumber and **everything** used to construct new houses or remodel or repair old houses. You will note that our prices average **50 per cent below local dealers' prices.** The saving on a complete house bill runs into hundreds of dollars. Here are a few examples of our 5,000 bargains: Doors, 77c and up; 4-light windows, 70c; corner blocks, 2c; quarter-round, per 100 feet, 25c; stair balusters, 3c; stair newels, $2.57; porch brackets, 5c; porch columns, $1.63; oak flooring, per 100 feet, 52c; window frames, $1.15; plate rail, per foot, 4c; corner beads, 8c; gable ornaments, 75c; oak thresholds, 4c; grilles, per foot, 80c; flint-coated roofing, per roll, 93c; mantels, $12.00. Over 5,000 equally wonderful bargains listed and pictured in our free books. Don't fail to write for them today.

Samples of 5,000 Grand Bargains in Catalog!

Four-Light Check Rail Well-Made Windows, 70c

Head Blocks 4c



Pilaster Casing, per 100 ft., $1.80

Hardwood Thresholds, 3 ft. long, 4c

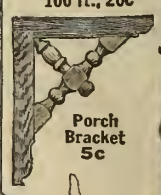
100 ft. Quarter Round 25c

Corner Blocks 2c

4-Light Barn Sash 39c

Colonial Newel, $1.40

Lattice, 100 ft., 26c



Porch Bracket 5c

Porch Spindles 1c

Base, per 100 lineal feet, Yellow Pine, $2.79

4-Foot Porch Newels 37c

Porch Balusters, each, 4c

Stair Newels, $2.57

Strong Doors, White Pine, Carefully Finished, 77c

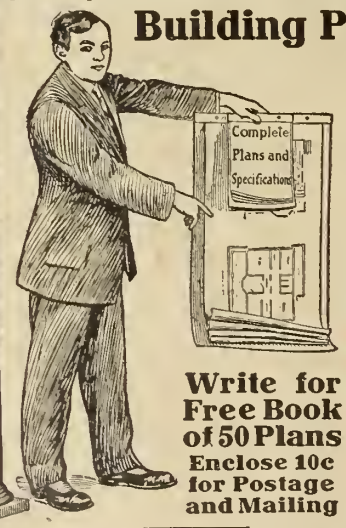
ROOFING 108 Square Feet, Guaranteed 5 Years 93c

Colonial Built-Up Column, $1.63

Cypress Column $2.43

The Largest Millwork Plant in America Selling DIRECT TO CONSUMER!

We own and operate the largest independent building material plant in America. Hence we are absolutely independent of the Lumber Trust and able to bid defiance to the Retail Dealers' Associations. We carry the biggest, finest stock of new Doors, Windows, Millwork and Lumber in the country and load direct from platform to cars, insuring quick shipment to any point and saving all drayage charges.



Building Plans Furnished FREE to Our Customers

Plans Drawn by Our Architects

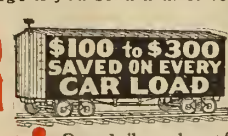
Our Architectural Department enables you to build with utmost economy. We furnish Architects' Blue Prints and Complete Specifications to our customers without cost, saving the usual architect's fee of $25 to $200.

Our Book of Plans is the Standard Authority on Home Architecture. All plans prepared by Licensed Architects who have specialized on high-class, moderate-cost farm and city homes. Every house shown has been built time after time. Cost never exceeds our estimate.

It cost us $5,000 to produce this great Book of Plans. It's yours without charge if you send a dime to pay cost of postage and mailing.

Write for Free Book of 50 Plans Enclose 10c for Postage and Mailing

LUMBER At Cut Prices!



Our daily sales of lumber are enormous. We operate a large plant and control the output of others. We guarantee our grades. We follow the Official Grading Rules.

Estimates Free Write for Free Lumber Price List or send your lumber bill for Free Estimate.

Three Big Banks Vouch for Our Responsibility

Scott County Savings Bank Davenport, Iowa

To Whom It May Concern:

It gives us great pleasure to testify to the reliability, business integrity and honesty of Gordon-Van Tine Co. They enjoy the highest credit with Western Financial Institutions. We assure prospective customers that they are perfectly safe in sending money with their orders, as we understand that if goods are not satisfactory money will be refunded.

J. H. HAAS, Cashier.

$23.93 for Stairs Complete

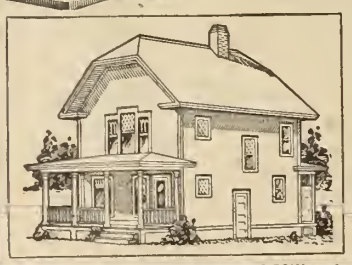
(164)

Write for the Grand Catalog That Saves Millions for Home-Builders

Save your hard-earned dollars! Send for our great Building Material Books and see the astounding low prices. Read our sweeping guarantee of quality, safe delivery and satisfaction or money back and freight paid both ways. Three big banks back up every word of it. Our customers, for whom we have saved millions, confirm it. The editor of this paper will vouch for every statement we make. Remember, this business has been established here since 1865, and the very life of our business depends on our "making good."

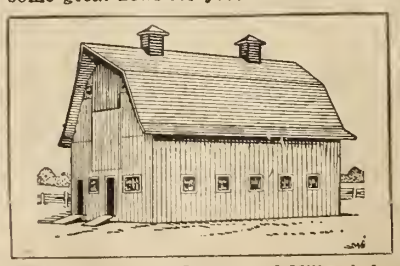
Take advantage of our record-breaking reductions from retail prices. Send for our Free Catalogs, make up a trial order and let us prove that lowest prices, high grade goods, prompt shipment, safe delivery and guaranteed satisfaction mean exactly what we say. We have some great news for you. Write at once.

GORDON-VAN TINE CO.
2832 Case St., Davenport, Iowa



$698 buys all the Lumber and Millwork for this 8-room house. Plan No. 100.

$1,013 buys all the Lumber and Millwork for this 7-room house. Plan No. 119.



$685 buys all the Lumber and Millwork for this barn. Plan No. 202.

$938 buys all the Lumber and Millwork for this beautiful bungalow. Plan No. 106.

4 FREE BOOKS!

GORDON-VAN TINE CO., 2832 Case St., Davenport, Iowa

Please send the free books checked below.

Name .....

Address .....

Occupation .....

Millwork ☐ LUMBER ☐ Roofing ☐ Plan Book ☐

If you wish Plan Book, enclose 10 cents for postage and mailing.

634.05
W E

Volume 23 Number 3

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

"The National Farm Magazine"

Small Fruits Number

Title Registered in U. S. Patent Office
Copyrighted, 1912, by The Fruit-Grower, St. Joseph, Mo.

Classified Advertisements, Pages 76, 77, 78, 79, 80.
Index to Advertisements, Page 32.
Table of Contents, Page 81.

Ten Cents a Copy
One Dollar a Year

30 DAYS FREE TRIAL

Read What Buyers Say

Wm. Hahn, Clarkeson, Nebraska, writes: "My Thiery Piano is as good as any of the Pianos ever sent to this section costing more money."

E. C. Atkins, Waltonville, Illinois, writes: "One of our local dealers wanted us to send the piano back to you but we are convinced that it is the sweetest toned piano in this town."

Geo. Mahanes, Eureka, Kansas, writes: "In a few words our idea of the Thiery Piano is that it is not only a beauty but just as perfect in tone and workmanship as it possibly could be."

H. M. DeWitt, 108 4th Ave., Gallipolis, Ohio, writes: "My daughter says that you could not have the piano back for twice as much as we are paying for it so you can just imagine how well we are pleased."

Jacob Frey, Lehighton, Pennsylvania, writes: "I have saved at least $100.00 by buying from you and I would not give your piano for any other in our neighborhood because it excels in both tone and finish."

Robert S. Harvey, Tigerton, Wisconsin, writes: "If you have any customers around here who are in doubt about the quality of your instruments just tell them to write to me."

Mr. Harry Eide, R. F. D. 2, Granton, Wisconsin, writes: "I have saved at least $150.00 by buying from you instead of from my local dealer. I would not trade my Thiery Piano for any other instrument in this section."

M. R. Dilley, Magnolia, Iowa, writes: "The Thiery Piano cannot be beat by any of the higher priced pianos in this town. We figure that we have saved $100."

P. E. Wells, Rockford, Iowa, writes: "My Thiery Piano has attracted considerable attention. I do not believe the equal of this piano is offered here within $100.00 of the price."

J. W. Clifton, Spring Ranch, Nebraska, writes: "We tested the Thiery Piano aside of another instrument costing $150.00 more money and your instrument was pronounced much the best."

H. C. Seide, Nicollet, Minn., writes: "I have saved over $100. by buying piano direct from you."

Above is a wood engraving of the Thiery Art Upright Style "40." It does not begin to show its beauty. Nothing but the instrument in your parlor on thirty days trial could show it to you as it really is. This piano stands four feet, 10 inches high; five feet, four inches long and weighs about 900 pounds. It is made in the finest fancy figured mahogany. The case is double veneered both inside and out. It has a full metallic frame, double repeating action, full copper over-strung strings in the bass. The keys are the finest genuine ivory with solid ebony sharps.

I'll ship this piano to any home in America at my expense and my customer receiving it can compare it with any other piano made."

Read What Buyers Say

L. Braden, Maroa, Illinois, writes: "The Thiery Piano which you sent to us is so much better than other instruments sold at similar prices, that we are sending you check in full for the instrument without waiting for the thirty days trial."

Fred Furious, St. Onge, South Dakota, writes: "Enclosed find check in full for Thiery Piano style 10. We would not trade it for any other instrument in this locality costing $100.00 more than we paid for it."

A. H. Jung, Elliott, North Dakota, writes: "We compared our Thiery Piano with other pianos sold in this locality and consider our piano worth double what we paid for it."

Jacob Timpe, Grand Ledge, Mich., writes: "The Thiery Piano, costing $125. less than a piano one of my neighbors has, is considered far superior."

E. C. Adamson, Konawa, Oklahoma, writes: "Piano all O. K. Everybody likes it. You need never expect me to send it back."

C. C. Hammond, Brenham, Texas, writes: "We received the Piano all O. K, and are well pleased with it and will forward you cash in full in a very few days. Your instrument deserves much praise."

F. Osberg, Ft. Russel, Wyoming, writes: "We are so well pleased with the fine Thiery Piano that we desire to pay for it right away instead of waiting 60 days time."

I pay the freight

When you order a Thiery Piano you can expect to save $75.00 to $150.00—when you place the instrument in your parlor the proof is before you. And from a Quality standpoint—if you don't stamp every detail with your O. K.—merely ship it back at my expense!

My Piano Style Book shows every one of the beautiful 1912 designs of Thiery Pianos side by side in large, beautiful engravings direct from photographs. Prints testimonial letters from my customers in every part of the country. You'll find them interesting reading.

This coupon brings you my New 1912 Style Book—Plans—Trial Order Blanks—Special Letter with Direct-to-You Prices and full particulars at once post-paid.

It costs you **nothing** to find out how much **better** a Thiery Piano is than common, made-to-sell instruments. You know there's a **difference** in piano quality—just as there's a difference in prices—**but do you know how much** that difference really is—what it **means to you** in dollars and cents—in **future** service and satisfaction? Plated jewelry doesn't wear—shoddy clothes rip and tear—cheap tools quickly break—poor furniture comes apart—and a common, cheaply made piano in your home will, in a few years time, **make you wish you had never seen it.**

As one of my customers in Michigan wrote to me after receiving a Thiery Piano—"The value you are giving me for the money I am giving you, has opened my eyes. I see now what you mean about big piano profits. **More piano buyers should learn** what I have found out."

When you buy a Thiery Piano there's **"Nothing to pay for but quality."** I want to make that just as strong as I can. And I want you to know that I am ready to prove it to you **at my expense.**

If you'll answer this ad with the signed coupon below and let me give you the information and send my Style Book, that's all I'll ask. A Thiery Piano is practically sold to you as soon as Uncle Sam brings me your trial order. I figure this way, because hardly **one out of a hundred** pianos I ship out comes **back** to me. But **you** have thirty days free trial—thirty days **judging**—thirty days **comparison** with other instruments. Then **you decide for yourself** whether you want to keep it or not.

If you don't want to pay cash in thirty, sixty or ninety days time, you can have **over two years credit.** You can arrange to pay me monthly, quarterly or half yearly, and a dozen other different ways which will be fully explained.

But no matter how you buy, the piano goes to you **at my expense without any advance money** whatever—without any obligation on your part—in fact, **you** have nothing to do but take the piano when it comes and ship it back **at my expense** if you don't want to keep it.

Don't ask me for the name of the nearest dealer or agent, because **I haven't any.** Every Thiery Piano that is sold is **shipped direct** to the home that orders it and this means but **one profit for you to pay** and that's the smallest profit that **quality** pianos can be sold on.

Don't wait—if you're a piano buyer now or at any time in the future, sign and return coupon today and my Style Book with complete information will go to you at once, postpaid.

Over Two Years Time to Pay if You Don't Want to Pay Cash!

J. B. THIERY, The Piano and Organ, Milwaukee, Wis.—As you advertise in Fruit-Grower send to me by return mail, postpaid, free of any obligation on my part, your large illustrated Style Book as checked below, with your FREE TRIAL ORDER BLANKS, rock-bottom prices direct to me and complete particulars of your money-saving buying plans.

NAME _____

☐ PIANO STYLE BOOK

_____

☐ ORGAN STYLE BOOK

_____

26 PLACE AN (X) MARK IN SQUARE OPPOSITE BOOK YOU WANT

Do You Want an Organ?

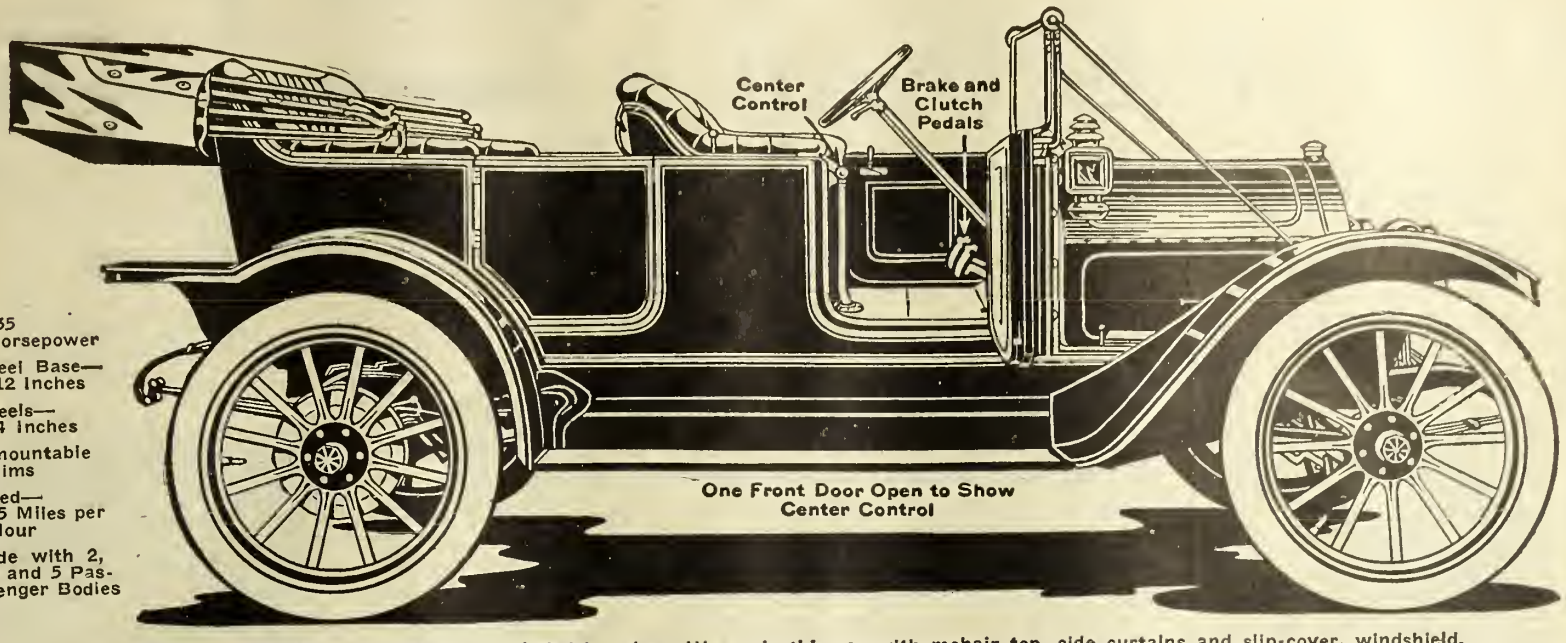
If you want an organ, send for my Organ Style Book. It is a big book which shows all the different styles of Thiery Parlor Organs, Chapel Organs and Piano Case Organs.

It is handsomely printed in colors and shows everyone of the organs in full page pictures and gives complete description.

Any Thiery Organ you want is yours on thirty days' trial and test. Any one you choose will come to you by return freight. If you don't want to pay cash for it, I'll give you all the way from one to two years' time to complete payment, and my special letter and price list will show you several ways to pay for one so that you will hardly miss the money. Not only that, but you will save $25.00 to $50.00 by dealing direct with me and if the 30 days trial does not prove this, simply ship it back at my expense.

J. B. THIERY, The Piano and Organ Man **Milwaukee, Wis.**

Reo the Fifth
$1,055



30-35 Horsepower
Wheel Base—112 Inches
Wheels—34 Inches
Demountable Rims
Speed—45 Miles per Hour
Made with 2, 4 and 5 Passenger Bodies

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip-cover, windshield, gas tank and speedometer—all for $100 extra. Self-Starter, if wanted, $20.00 extra.

The Car That Marks My Limit

By R. E. Olds, Designer

I have no quarrel with men who ask more for their cars—none with men who ask less. I have only to say that, after 25 years—after creating 24 models and building tens of thousands of cars—*here's the best I know.* I call it My Farewell Car.

I claim for this car no great innovation. The time is past for that.

Thousands of good men, for two decades, have worked at perfecting cars. No man can ever go much further than the best these men have done.

I believe that Reo the Fifth, in every feature, shows the utmost these men have accomplished. It represents, in addition, the best I have learned through 25 years of continuous striving. So it comes, I believe, pretty close to finality.

It shows what can be done by modern facilities, by boundless experience, by honesty of purpose, by the genius for taking pains. And that is all that any car at any price can offer.

The Lessons of 25 Years

Where this car excels lies in what I have learned in 25 years of car building.

I've been learning longer than others. I have learned faster than others, because I had more cars out.

That's my chief advantage.

What some think right, I know to be wrong. What some think sufficient, I know to be reckless.

Myriads of cars used by myriads of owners have taught me every possible weakness. They have shown the need for big margins of safety, for exactness, for careful inspection, for laboratory tests.

I Go to Extremes

For every part I know the best steel alloy. To make sure that I get it, I **analyze all my steel.**

I built a crushing machine of 50 tons' capacity just to test my gears.

My axles have twice the needed strength. My bearings are Timken Roller and Hyatt High Duty.

My carburetor is **doubly** heated, and adapted to low-grade gasoline. That makes the commonest troubles impossible.

I carry tests and inspections, throughout the construction, to what men call extremes. Those 25 years taught me the need for precautions.

They also have taught me that men love beautiful cars. My bodies are finished with 17 coats. My lamps are enameled—my engine nickel trimmed.

The upholstering is deep, and of hair-filled genuine leather. The wheel base is long, the wheels are large, the car is over-tired. I avoid all the petty economies.

New Center Control

The gear shifting is done by that center "cane handle." It moves only three inches in each of four directions to change to every speed and reverse.

There are no side levers. Both of the brakes, also the clutch, are operated by the foot pedals. The doors are free from obstructions.

The driver may sit—as he should sit—on the left hand side, close to the cars which he passes. With the old lever controls this was impossible, save in electric cars.

Price, $1,055 the Only Sensation

My greatest achievement, in my estimation, is the price on this new car. No other car begins to compete with it.

This is due to automatic machinery—to enormous production—to making all parts in one factory. It is due to building only one chassis in all this great plant. It is due to small selling cost, and to a very small profit.

But this price is not fixed. This initial price of $1,055 is the minimum. It is based on today's low cost for materials. It is figured on a doubled output, due to this new creation.

If costs advance our price must advance. But we shall keep it this low just as long as is possible. That is better, we think, than fixing the price for six months in advance, and leaving big margin to do it.

My Supreme Effort

Reo the Fifth marks my limit. Better materials are impossible, better workmanship out of the question. Better features or devices, if they exist, are still unknown to me.

More care or skill or quality is beyond my capability. At twice the price I could build no better car. If others can, they are better men than I.

Ask for Catalog

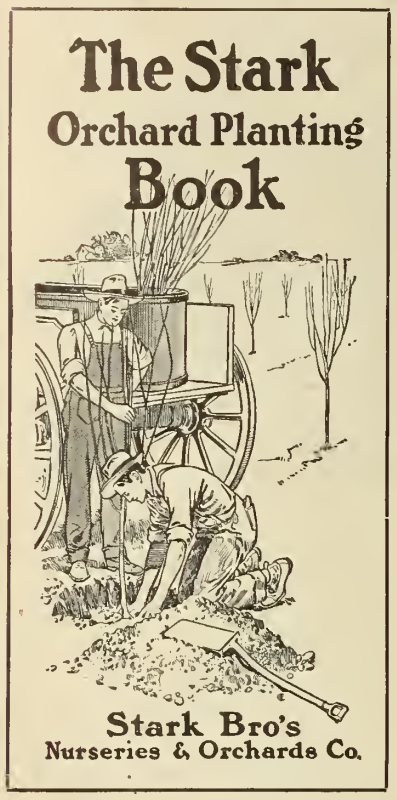
Ask for our catalog, showing the various bodies and stating all the facts. We will tell you then where to see the car.

Reo the Fifth, my finest creation, will interest every motor car lover. Ask for the book today. Address

R. M. Owen & Co. General Sales Agents for **Reo Motor Car Co., Lansing, Mich.**

Canadian Factory, St. Catharines, Ontario

Two Famous STARK Books FREE



Stark Orchard Planting Book and Condensed Stark Year Book

Two splendid, practical volumes which tell the amazing story of modern-day fruit-culture. Two books filled with invaluable, down-to-the-minute information on orcharding in all its phases; complete descriptions of varieties, season of ripening, locality where each variety does best, etc. They tell a common-sense though sensational story of profits that are being made from commercial and home orchard growing. These books shows just what **you** can make from a Stark Orchard. **And they are both free.** Use the coupon.

Stark Orchard Planting Book

A book of trustworthy information given free to the whole world—not a catalogue or piece of advertising literature, but a well of information on the planting and care of trees from the day they are received from the nursery. The contents is not the result of one man's experience alone. It is a collection of the knowledge and experience of many men. Each has spent a large part of his life working with trees. Many have had scientific training. All are rich in that greatest of all knowledge—**practical experience.** It tells the real secret of success in orchard planting.

At Planting Time Most Mistakes Occur!

This invaluable book explains in simple language how to avoid those failures in fruit growing that are directly due to easy-to-make mistakes made **when the trees were planted.**

We cannot begin to tell you here the priceless information contained in this small but most valuable book. You must have the book itself. Send for it **now.** Use the coupon. Or write a card or letter today, without fail, for this truly remarkable volume.

Please send me another copy of the Stark Orchard Planting Book. This booklet contains very timely, valuable and some belated information. I am sending copy today to a young man who was at my place yesterday, and who is starting an orchard.—C. O. Reed, Proprietor, Model Fruit Farm, Oregon Co., Mo.

Your Stark Orchard Planting Book is the best thing I have ever seen. It is what the tree planters need badly; if they will read this book and follow the instructions they will be much benefited.—J. P. Fourot, Orchardist, Sumner Co., Kansas.

The Stark Orchard Planting Book received. This is something that I have often thought should be in the hands of every planter. Will greatly aid them to make a success of the trees planted. I think it will be appreciated by all.—A. F. Buvinger, Labette Co., Kansas.

"Will you kindly send me one of your "Stark Orchard Planting Books?" Have just run across one borrowed from a friend and think it is the best and simplest information on the subject of planting and pruning trees I have ever come across. Would be pleased to have one for reference and if there is any price attached to it let me know and it will be forwarded. Trusting you have some left, I remain, —R. M. Adams, Lancaster Co., Pa."

Condensed Stark Year Book

"A Diamond Mine" of Information

Here is a book as different from the usual run of nurserymen's catalogues as day is from night. It is a veritable mint of boiled-down information on varieties for commercial or home-orchard planting, season of ripening of all varieties of all fruits, letters from successful fruit growers from every part of the country, comments by our national horticultural authorities, etc., etc. It also gives the facts about Stark Trees and quotes prices. Every statement in this book is backed by a million-dollar nursery. Planters the country over say this is the best, the most valuable and most practical book of its kind ever published. We have thousands of this kind of letters.

Stark Year Book received. I have several good horticultural works, but I believe your Year Book contains more valuable, up-to-date suggestions for the new beginner (or the old one either), than any of them.—John A. Minger, Nemaha Co., Kansas.

Permit me to thank you for your handsome catalogue. It is the most comprehensive of its kind I have ever seen. The color plates are beautiful, and of great assistance in selecting fruit.—J. O. Lewis, Wash. Co., Tenn.

Copy of the Stark Year Book received. It is not only the most beautiful and artistic work of its kind ever issued, but the most practical guide for the planter of fruit and other trees. The text is unique in many ways, especially in the directness of statement and the absolute worth of the various trees and fruits described. It should be in the library of every fruit grower. — Thos. F. Rigg, Iowa Horticultural Experiment Grounds, Hardin Co., Iowa.

Neither the Condensed Stark Year Book nor the Stark Orchard Planting Book can be purchased. They are our free gift to you.
You might as well have these book treasures in your home. They are waiting for you to ask for them. Send the coupon today.

$500 to $2,000 Per Acre With Stark Tree Orchards

To grow **paying crops,** you must have **good trees.** To be **positive** that your trees are **right,** deal with this, the greatest nursery in the United States—a firm famed for its honest policy for **over three-quarters of a century**—87 years.

It is not unusual for Stark tree growers to gather from $500 to $2,000 an acre from their trees, as you will note by the following true testimonials:

$882.93 Net Profit From 36 Trees of the World-Famed Stark Delicious Apple, Occupying only one-third of an acre

Stark Bro's Nurseries and Orchards Co.,
Louisiana, Mo.

"Report of crop of Stark Delicious for the year 1911; 36 trees, 10 years old, set in square form, 20 feet apart each way.

263 boxes Extra Fancy at	$2.33	$612.79
58 boxes Fancy at	2.08	120.64
87 boxes C Grade		149.50
		$882.93

These prices are **net**—all freight, warehouse and marketing charges have been deducted."

(Signed) F. S. BURGESS, Chelan Co., Wash.

$1,250.00 NET FROM 2 ACRES OF BLACK BEN

"The car-lot of Black Ben apples which were awarded the $500 prize at the Denver National Apple Exposition in January, were grown on a 2-acre orchard two miles east of Fruita, Colorado. The 160 trees on this two acres are Stark trees, eight-year-olds. Every one of these 160 trees are as nearly perfect as it is possible for trees to be, and from them 1,250 bushel boxes of the most beautiful apples were picked this last fall. Mr. J. C. Wilson, the owner, received for the apples from this two acres, $1,250.00 net."—Dr. S. P. Green, President, Fruita Chamber of Commerce.

STARK DELICIOUS VS. SPITZENBURG

"Have just sold crop of Stark Delicious, buyer to take all sizes and grades at $2.37½ per box. Buyer furnishes lining and wrapping paper, grades and packs the apples and nails them up.

"Spitzenburg has always been the highest price apple in this valley. This year the average price of Spitzenburg is about $1.50 per box; grower to do the packing, grading, etc., so you see the Delicious is selling for a dollar more than any other variety. My orchard is seven years old; this is the third crop. Some trees this year produced as high as ten boxes."—Dick Hart, Yakima Co., Wash.

Besides buying **guaranteed trees at low prices,** each Stark tree buyer may receive the FREE services of the famous **Stark Special Service Department.** Only a company of the size and experience of Stark Bro's could maintain such a staff of experts—men who are Tree Specialists—Horticulturists who have had both scientific education and still better, have the knowledge which comes only from years and years of **practical experience.**

310

Free Book Coupon

Stark Bro's Nurseries & Orchards Co.
Louisiana, Missouri

Send me free books without obligations on my part.

Name .....

Address .....

I expect to plant .....trees this spring.

Fill In, Cut Out and Mail this Coupon today for two Free Books

We Pay Freight

on orders $10.00 net or more, pack Free, and guarantee safe arrival in addition to giving **liberal discounts** and splendid premiums. Buy your trees now for spring planting from this great nursery and insure your future orchard profits. Send now for your copies of these two free books. Then place your order immediately.

Stark Bro's Nurseries & Orchards Co.

310 Stark Station
Louisiana, Missouri

THE WESTERN FRUIT-GROWER

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Volume 23 ST. JOSEPH, MISSOURI, MARCH, 1912 Number 3

WESTERN COLO. BERRIES

Steamboat Springs, Colo., Originally a Cattle Town, Now Center of a Strawberry District

The western slope of the Rocky Mountains has long been noted for the uniform excellence of its fruits and the many natural advantages enjoyed by the fruit growers, but out in northwestern Colorado, in a little valley along the Yampa River, there is a strawberry district, yet in its infancy, which is very much out of the ordinary and which is destined to become an important factor in the fruit markets of the great middle west. This district is located adjacent to Steamboat Springs, Colorado, at an altitude of about 6,600 feet.

Originally, Steamboat Springs was a lively cattle town. It was the principal trading point in a rich grazing territory. Then, with the advent of the railroad, the open range and the sage brush period gave way to farmers who came flocking in. The valley, rich in agricultural possibilities and abundantly supplied with water for irrigation, took on a different aspect. Well tilled fields, substantial farm buildings and high grade stock now all bear evidence of the farmers' prosperity.

The old cattle town, in turn, caught the spirit of rejuvenation. New hotels, business blocks and beautiful residences were built. Streets were paved, electric lights and sewerage installed and a daily newspaper was established. The mineral springs, from which the town derived its name, were found to have marvelous curative qualities for many of the ills of mankind, and this coupled with the natural beauties of the surrounding timbered mountains brought an influx of health-seekers and tourists.

The Remington Berry.

Many people in other parts of the country have a hearsay knowledge of Steamboat Springs based on the desirability of the district for stock raising, general farming or summer vacations, but its real foundation of prosperity, however, lies in the strawberry fields.

The strawberry industry of that district occupies a very unique position. In no other state or locality are the conditions for production and marketing similar, and a description of these unusually advantageous conditions will be interesting to strawberry growers everywhere.

The berry grown almost to the exclusion of other varieties is what is known locally as the Remington berry. Its parentage it not known but it was brought into that locality by a farmer some years ago. Its robust constitution and excellent fruit producing qualities soon made his neighbors envious and other gardens were supplied from the original bed. Then one enterprising farmer, anticipating the building of the railroad, conceived the idea that it would be a profitable crop to grow for the Denver market, and by the time transportation facilities were available, some three years ago, he had about six acres in bearing.

During his first shipping season he marketed about fifteen hundred crates of berries from the six acres and they were taken by a Denver commission firm at $3.00 per crate, f.o.b. Steamboat Springs. The success of this grower resulted in other men

FIELD OF STRAWBERRIES AT STEAMBOAT SPRINGS, COLO.

taking up the industry until it has assumed quite large proportions, but still totally inadequate to the demands of an almost unlimited market.

The Remington plant has a tall vigorous growth with an enormous spread of crown. The leaves are leathery, medium dark green, broad and somewhat obtuse, and stand very erect. The fruit stems are thick and strong, holding the fruit well up from the ground but many of the flowers open under the leaves thus protecting them from late frosts. The plant is apparently very rust resistant, as there is little or no rust to be found in the district, and insect troubles are so far unknown. In general appearance, it very closely resembles the Gandy, but unlike the Gandy it is a strong staminate and a heavy pollenizer.

Ripens Late.

The fruit has a large calyx and in color shades down from a rich red on the exposed side to a light pink on the under side. The flavor is mild and delicious with a slightly aromatic odor. It has an attractive appearance in the crate and stands shipment probably as well as any berry that can be found.

The shape of the berry, however, while large is hardly in keeping with its other good qualities, as it is similar to the old Sharpless berry, a fair proportion being perfectly conical, the others being irregular and coxcombed or flat conical.

The bloom comes in June and the fruit begins to ripen in early July. The plant has a habit of ripening its berries regularly, probably due to the even weather conditions generally prevailing, and the picking season extends well up into August, sometimes close to the first of September. This long fruiting season is largely due to irrigation, there being no lack of sunshine and water, the two essentials so important.

There are other varieties now being experimented with in the district but it is doubtful if any will be found with more good qualities than the Remington berry. Of course a better shaped berry would be helpful, but a variety offering this might and probably would be less desirable in other ways. During the past season, the writer put out ten different standard varieties for the purpose of experiment. Among them are the Brandywine, the Marshal and the Aroma, but it is likely that of them all, the Brandywine will bring the best results under the conditions in that district. It is well shaped but it is a question whether it will hold up with the Remington in other qualities.

The time is also approaching when the district will need a good canning berry and the Brandywine is right up to the top of the list in this respect. The Remington may be all right for this but that still remains to be seen.

The Aroma, the Dunlap and the Stevens Late Champion are being tried out in considerable acreage by several growers to determine mainly how their fruiting season compares with the Remington and their performance will be watched with considerable interest. What the growers in this district want pre-eminently is a late bearer, one that will fruit its main crop in August.

The Culture.

The care given the strawberry fields is very simple. Snow comes early, almost before the top of the ground is frozen, and stays on until late in the spring. This obviates the necessity of mulching to prevent heaving and freezing, and by staying on so late, minimizes very largely the danger from late frosts during the blooming season. On northern exposures, snow remains until early May. Late in that month, warm weather begins in earnest and damaging frosts in the blooming season are infrequent.

It should be remembered, also, that in this district, as in other hilly and mountainous districts, they have what is known as thermal zones or belts. The rapid slope of the land provides an air drainage. As the night cools the air, it flows down the mountain sides the same as water and stratifies in the valleys. The lowlands, therefore, are several degrees colder than farther up the slopes, or mesas, as the table lands are called. For this reason the strawberry fields are without exception located well up on the mesas and as far above the valley bottoms and water courses as is possible to obtain cultivatable and irrigable land.

It is now the general practice to grow the plants under the narrow matted row system and good results are being obtained. It is probable, however, that a larger percentage of strictly fancy berries would result from a more restricted growth of plants in the row, and when the berries are graded closer than they are at present, the necessity for this will be more thoroughly appreciated. The splendid results obtained from the hill system as practiced in the Hood River and other noted districts of the West should encourage the Steamboat Springs growers to give the hill system a thorough trial.

One important feature is not by any means overlooked in this district and that is thorough cultivation. Irrigation water is plentiful and all of the fields look thrifty and well tended. In fruiting season, they are picked over on alternate days and immediately after each picking water is turned down all of the rows. In this manner and beginning at blooming time, the soil is kept thoroughly moistened. After the fruiting season, the fields are watered whenever the soil needs water

OVERLOOKING A PORTION OF THE SMALL FRUITS DISTRICT AT WATHENA, KAN., WHERE GRAPES, BLACKBERRIES, RASPBERRIES AND STRAWBERRIES ARE THE MOST IMPORTANT CROPS.

and each irrigation is followed by cultivation.

Packing.

Pickers are paid at the rate of two cents per quart and the fruit is packed in the Leslie octagon box and shipped in 24-quart crates. This is the cheapest of all the various packages, but in view of the large size of the berries, they would appear much more attractive on the market if packed in the square American baskets and the ventilated crate used as is done with the fancy berries from some of the eastern fruit districts.

The marketing of the fruit is done through an association formed by the growers during the spring of 1911. Under an efficient management the work of the association this year was very successful. The average price received per crate f.o.b. Steamboat Grand Island, Nebraska, brought an even better price of $2.65 net per crate.

The Possibilities.

These figures illustrate the possibilities in the way of fancy prices, and the market is almost unlimited and without competition, there being no strawberries produced in any other locality at this time. The Hood River people have demonstrated what can be done in the way of long distance strawberry shipping, and the Steamboat Springs Strawberry Association proposes to equal this performance whenever the production can be brought above the requirements of the comparatively nearby territory. At the present time, there is only one hundred and twenty-five acres in bearing, but without competition from other distiicts, an enormous quantity of

FAE STRAWBERRIES, CRATED AND READY FOR SHIPMENT. GROWN BY W. J. ALT, OHIO.

Springs for the entire 1911 season was $2.49, and one grower turning into the association a total of 1,853 crates received $4,965.05 net, an average of $2.58 per crate. This grower had seven acres of berries, about one-fourth of them having been set out last year, the balance being three years' old.

Another grower brought in 2,641 crates, most of them coming from a nine acre field, which netted him a total of $6,444.04, or $2.44 per crate.

One of the cars shipped during the latter part of July to Omaha, a distance of nearly 800 miles and under an exceptionally heavy freight rate, brought a net price of $2.63 per crate after allowing for all shipping and selling expenses, including freight and transit icing charges. Another car to

THE DOCTOR HABIT
And How She Overcame It.

When well selected food has helped the honest physician place his patient in sturdy health and free from the "doctor habit" it is a source of satisfaction to all parties. A Chicago woman says:

We have not had a doctor in the house during all the 5 years that we have been using Grape-Nuts food. Before we began, however, we had "the doctor habit" and scarcely a week went by without a call on our physician.

"When our youngest boy arrived, 5 years ago, I was very much run down and nervous, suffering from indigestion and almost continuous headaches. I was not able to attend to my ordinary domestic duties and was so nervous that I could scarcely control myself. Under advice I took to Grape-Nuts.

"I am now, and have been ever since we began to use Grape-Nuts food, able to do all my own work. The dyspepsia, headaches, nervousness and rheumatism which used to drive me fairly wild, have entirely disappeared.

"My husband finds that in the night work in which he is engaged, Grape-Nuts food suppiles him the most wholesome, strengthening and satisfying lunch he ever took with him." Name given by Postum Co., Battle Creek, Mich.

Read the little book, "The Road to Wellville," in pkgs. "There's a reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true and full of human interest.

You Get More Money For Your Raspberries

If You Plant Our Vigorous New Early

"Black Pearl"

A raspberry as large as the Cumberland, but more prolific, and jet black. Free from blight, never crumbles and is five to ten days earlier than other varieties. Crops very heavily and is never winter killed. Tested nine years under our own observation.

Nets you 35c to 50c more a crate than any other variety, and is a firm shipper. We save you agent's commissions on all kinds of nursery stock. FREE catalog of trees, small fruit plants, ornamental shrubs and flowers.

Established Twenty Years

HOLSINGER BROS., Box 69, ROSEDALE, KAN.

Trade-Mark Registered Serial No. 84,394.

all those interested in the culture of "the king of fruits." Doctor Fletcher is not one of those who fear over-production of good apples, but he believes that it is time to sound a note of warning. He believes that many persons are planting apple trees with the expectation of harvesting fruit which will sell at from $2 to $3 per bushel, and all such are sure to be disappointed. He believes that if our markets are to take the great quantity of apples produced within a few years the price will have to be very much lower than it has been for several years, else the masses cannot afford to eat apples.

Perhaps the most valuable suggestion offered in Doctor Fletcher's paper was that fruit farmers grow other crops than apples. With increased production of apples, and consequently lower prices, one must consider the cost of production. He continues:

"The cost of producing fruit will be influenced to a large extent by the kind of farming, whether only fruit is grown, or mainly fruit, with other crops or live stock as a side issue. Seventy-five years ago, when most of the population lived in the country, the aim of the farmer was to produce all the articles that were needed to supply the needs of the family. He grew small quantities of nearly all the crops that would thrive on his farm that were needed to feed and clothe his family. Now the farmer grows crops for market, not for his house-

STRAWBERRIES IN MATTED ROW ON FARM OF G. R. SCHAUBER, NEW YORK
See article page 63.

which will have to be worked out, and more suitable freight and express rates are essential.

On the whole, however, the Steamboat Springs Strawberry Association had a very profitable season and the growers were uniformly satisfied. The development of the industry and the results of future seasons will be awaited with much interest as it certainly is a new experience for a fruit grower to place his products on the market without competition of any kind from other districts.

H. J. GERMAN.

Dairying and Fruit Growing.

In a paper before the recent meeting of the Virginia State Horticultural Society, Dr. S. W. Fletcher, director of the Virginia Experiment Station, discussed the future of apple growing in a most conservative manner, and what he said is well worth considering by hold. The growth o fcities and increasing competition have made it necessary for the majority of farmers to specialize along some line and to grow only the crops or raise the stock that succeed best on their farms, and to purchase those necessities that they can buy cheaper than they can raise. Agriculture is becoming more and more specialized.

"The business of fruit growing is one of the most specialized lines of farming. It is usually conducted on small farms under intense culture, and but a few kinds of fruit plants are grown. Many fruit growers have no other business. There are economic advantages in this arrangement, but there are great disadvantages also. In many cases fruit could be produced cheaper if a certain amount of other crops were grown, or stock kept. It is all right for the manufacturer to produce but one article, for he can work at it all the year. The crop of the fruit grower, however, occupies his attention but a part of the year. There is much loss in unused capital, labor, teams, tools and other capital goods, during the remainder of the year.

"Single-cropping is disastrous in the long run, as we have seen in the case of wheat, tobacco, peanuts and cotton. The fruit crop is no exception to the rule. I believe that there is a tendency to specialize too highly in fruit growing, and that in many cases it would be more profitable for the fruit specialist to grow a certain amount of other crops, or keep some live stock. He should make fruit growing his main business, but select such other interests as will most effectively fill in the gaps that appear in all kinds of specialized farming. Even though the crops he selects may not be nearly as

Clean Cultivation Pays

—if it doesn't cost too much to keep the orchard clean. It pays to consider cost of cultivation, and it is necessary, therefore, to use up-to-date implements.

The Kimball Cultivator

is the best tool you can use for stirring the soil. It covers a wide sweep, works well up under the branches of loaded fruit trees, leaves the soil level, keeps down weeds, and maintains a perfect dust mulch. No implement made equals it for use in an irrigated orchard, for the soil is smooth after cultivation, just right for running irrigation furrows.

Thousands of Kimball cultivators are now in use by the best orchardists in the country. James M. Irvine, editor of The Fruit-Grower, uses two of them at Morrisania Ranch, in Colorado, with perfect satisfaction. Ask him what he thinks about them. Write today for catalogue and prices, and be ready to cultivate your orchard at the right time. You make no mistake when you buy a Kimball—and your order should be placed as quickly as possible. Send today for full information.

W. A. JOHNSTON, Manufacturer
The Dalles, Oregon

Fairbanks-Morse Spraying Outfit

KILLS INSECTS, SAVES FRUIT

You must spray to secure perfect fruit. Use a Fairbanks-Morse high-pressure sprayer and do the work quickly and thoroughly.

The above 1 H. P. Gasoline Engine outfit will supply three ¼-in. Vermorel spray nozzles at 200 lbs. pressure, which is the pressure required for effective spraying for scale diseases. The Deluge pump gives steady pressure. Entire outfit compact, strong and easily moved about the orchard. Will give splendid service for years.

Our Catalog No. SF953 describes this and larger outfits and tells just when spraying should be done. Write for a copy today.

Fairbanks, Morse & Co.

Kansas City Denver Omaha
St. Louis Chicago

profitable in themselves as fruit, yet the total profit from the farm for a series of years may be greater, since labor and equipment are kept in use. In short, the fruit grower should have supplementary work which will not compete with the fruit crop; that is, which will not need a large amount of attention at the time that the fruit crop demands care. Some line of live stock farming is preferable because of the fertility the manure brings. Certain lines of stock husbandry in which the animals are fed in winter and pastured in summer are practicable in some cases. Dairying is first class, except that it comes in competition with the fruit crop in summer. Hogs and fruit are an excellent combination. In most cases some line of farm work can be found which will not encroach seriously upon the fruit crop, and which will make use of the equipment of the farm that otherwise should be idle. To that extent it will cheapen the cost of producing fruit.

"I recognize the fact that many of the most profitable orhards in the state are located in land that is very well adapted for fruit, but is poorly adapted for general farming and live stock purposes. In such cases it is probably more practicable to grow fruit and nothing else. But I repeat that the owners of these orchards will be at a greater disadvantage in the future than now as compared with the orchardist who has enough farming land at least to grow all the feed for his teams, and who has sufficient income from farm crops and live stock to tide over the lean years that always have come and always will come in fruit growing.

"I am not advocating a return to the days of the farm orchard, because very few farmers will take proper care of an orchard—we see wrecks of farm orchards all over the country; but I do believe that the type of orchard which will be most successful in the future is a farm on which fruit is the main crop, and sufficient grain and forage crops are grown to feed live stock, the manure from which will maintain the fertility of the farm. No system of agriculture which leaves out live stock can be permanently successful, and the experience of centuries has shown the folly of single-crop farming. I cannot believe that fruit growing is any exception."

THE FALL STRAWBERRY

The Past Year's Experience With Fall Fruiting Varieties—Weather Not Most Favorable

The winter of 1910-1911 was very severe on strawberry plants in this locality. While the weather was not very bad, so far as cold was concerned, it was a hard one on grasses and plants that suffer from a lack of snow. No one can exactly tell why strawberry plants will winter finely one winter and kill out badly the next. There seemed to be a great deal of ice last winter which covered the surface of the soil about one to two inches deep. We are are of the opinion that this has a tendency to smother the plants. Certain it is, that when we uncovered our fall-bearing strawberry plants the past spring, we were astounded by the damage done by the winter.

Everything was nicely covered with about three inches of straw in the month of December and we expected to have them winter finely. Some 6,000 plants of Productive and Superb that had been heeled in and covered with snow were badly winter-killed, a thing that had never happened with heeled in plants before with us. Our beds of Francis and Americus that were full of plants when winter set in, were badly depleted, the Francis suffering most. I think that fully 75 per cent of the Francis plants were

SUPERB.

killed outright, while the Americus were not injured over 10 per cent. I might say here that the Superb and Americus seem to be the hardiest of all the fall bearing kinds I have ever tested. I am led to believe that the Francis plants were weakened by overbearing in the fall, and when winter set in, were so near dead from overfruiting that they easily succumbed to the unfavorable winter conditions.

The Weather Conditions.

The digging, packing and shipping season of 1911 was the most unfavorable that we have ever passed through. The weather during March was raw and chilly, much sickness prevailed and it was almost impossible to get things to going. When the weather moderated, it came on awfully hot, all at once, and continued so throughout the spring and early summer. It was the most unfavorable time to ship or transplant plants that we have ever passed through.

We started in to set about five acres of the fall bearing varieties, but before we had three acres set, it came off so dry and hot that planting had to be discontinued and we never had a chance to set any more.

As has been before mentioned, the summer was very warm and dry and it was a constant fight to keep the plants alive and growing. Add to this the work of the white grubs, which were the worst the past season we have ever seen them, and one can see that getting a good stand of plants was a strenuous task indeed. We think that we lost nearly one-third of the plants from white grubs.

The fall of 1911 was quite favorable for the growth of strawberry plants so far as moisture was concerned, but it was too cold to induce the plants to make a normal growth. Many of the plants had become stunted by the excessive heat and drouth and never started to make a runner. Others made a good growth of runners, so that on the average, we got a fairly good fruiting row, but very uneven.

We had established a record for fruiting for these fall bearing strawberries in 1910, and so we decided to not allow them to fruit much, if any, the past fall. We wished to get all the new plants possible and if they are allowed to fruit, the plants will not make as many runners as they would if no fruit was allowed to form.

The Fruiting Season of 1911.

The blossoms were kept off the plants until August 20th, which is twenty days later than should be. People kept asking us about the fall-bearing strawberries, if we were going to have a crop of them this year and when they would be ripe. It occurred to us that if we did not show fruit in quanti-

A TROUBLE MAKER

Coffee Poison Breeds Variety of Ills.

A California woman who didn't know for twenty years what kept her ill, writes to tell how she won back her health by quitting coffee:

"I am 54 years old," she says, "have used coffee all my life and for 20 years suffered from indigestion and insomnia. Life was a burden and a drag to me all the time, and about once a year my ailments got such hold upon me that I was regularly 'sick in bed' for several weeks each time.

"I was reluctant to conclude that coffee was the cause of my trouble, but I am thankful that I found out the truth.

Then I determined to use Postum exclusively—for a week at first—for I doubted my ability to do without coffee for any length of time. I made the Postum carefully, as directed, and before the week expired had my reward in a perceptible increase in strength and spirits.

"Seeing the good that my short experiment had accomplished, I resolved to continue the use of Postum, cutting out the coffee entirely. This I did for nine months, finding, daily, increased cause for gratification at my steadily improving health. My indigestion gradually left me, my sleep returned, I gained 26 pounds in weight, my color changed from sallow to a fresh, rosy hue and life became a blessing.

"Then I thought I would try coffee again, and did so for a few weeks. The punishment for deserting my good friend, Postum, was a return of my old troubles.

"That taught me wisdom, and I am now and shall be all my life hereafter using Postum exclusively and enjoying the benefits it brings me." Name given by Postum Co., Battle Creek, Mich.

"There's a reason," and it is explained in a little book, "The Road to Wellville," in pkgs.

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

One Year's Growth of a Pear Tree in Joseph Renot's Orchard at Wiggins, Mississippi

The Fruit Grower's Paradise—

You Can Raise More Fruit and Make More Money if You'll Come to

MISSISSIPPI

Do you realize that there's a wonderful new fruit country now being settled where your knowledge and ability will grow more fruit and finer fruit, and give you and your family a better living than ever before?

In Mississippi they're raising grapes, pears, strawberries, blackberries, Japanese plums, figs, apricots, Satsuma oranges, French prunes—land at present selling at extremely low prices—rich soil—high, well-drained, healthful locality. Abundant rainfall. No irrigation or drainage necessary. The water is pure and plentiful. Hundreds of Northern settlers are in this region near Wiggins and Powers, Mississippi, 35 miles from Gulfport, a deep water harbor. They're enjoying the delightful climate—warm and pleasant the year 'round—and they're making big money from small investments.

Rapid and dependable shipping facilities to Chicago and the East. An active cash market fostered by a Growers Association of over 300 farmers and fruit growers. This with the local canning factory guarantees quick purchase and good prices for everything you grow. A $50,000 Demonstration Farm and Nurseries right on the tract insures your success. Experts in charge—advice free.

Come to Mississippi—you can make a good living right from the first. A truck garden will keep you and yours comfortable while your fruit is coming into bearing. Then you'll make money on a scale impossible in the older, less favored regions.

Mail This Coupon for the Proved Facts

We are doing more to make our farmers and fruit growers successful than any other land company doing business in the South. Think of this and the fact that you can buy land in this fertile district at only $2 per acre down and 50 cents a month per acre thereafter. No interest. No taxes. Guaranteed title.

Mail the coupon or send a postal or letter for all the proved facts illustrated from photographs; bank references, letters from settlers now here, etc. Write today. Address

MISSISSIPPI FARMS COMPANY,
1120 Commercial Nat'l Bank Bldg., Chicago.
Fleming Building, Des Moines, Iowa.
Wiggins, Mississippi

Mississippi Farms Co.
1120 Commercial Nat'l Bank Bldg., CHICAGO

Please give me the facts about your Mississippi fruit lands.

Name .....

Address .....

City .....

State .....

ties, same as we did during the fall of 1910, that many people would say that they were not to be depended upon to bear a crop every year. The more we thought of this, the more the truth of it bore upon us. So we ordered that the clipping of blossoms be discontinued.

This is why we did not have as much fruit in proportion to the number of plants as we did the year before, and why the fruit was later in ripening than in 1910.

The state fair, in Syracuse, was held this year during the week of September 11th to 16th. We were

PRODUCTIVE.

only able to show eight quarts of these ripe berries during the week at the Fair, but the plants were in excellent shape and we took up about twenty of them and set them in six inch pots and shipped them to the State Fair. They were given a good position at the end of the Western New York Horticultural Society's exhibit and attracted the greatest attention. People would come into the hall and hold up their hands in wonderment. There are thousands and thousands of people who have not even heard of a fall bearing strawberry, let alone seeing and tasting the fruit. From this time on, we continued to make pickings of the fruit, which were sold to stores, hotels and shipped to distant cities, at 25 cents per quart.

The last large picking, eighty-four quarts, was gathered October 26th. These were largely used to send as samples to horticultural and agricultural editors in different parts of the United States. The berries were wrapped in glazed cotton and packed in a quart basket which was nested inside of another quart basket to lend strength to the package and all wrapped up tight in strong paper and mailed. By November 1st, the ground was frozen hard, snow came in a few days and bushels of the fruit were thus destroyed and buried from sight.

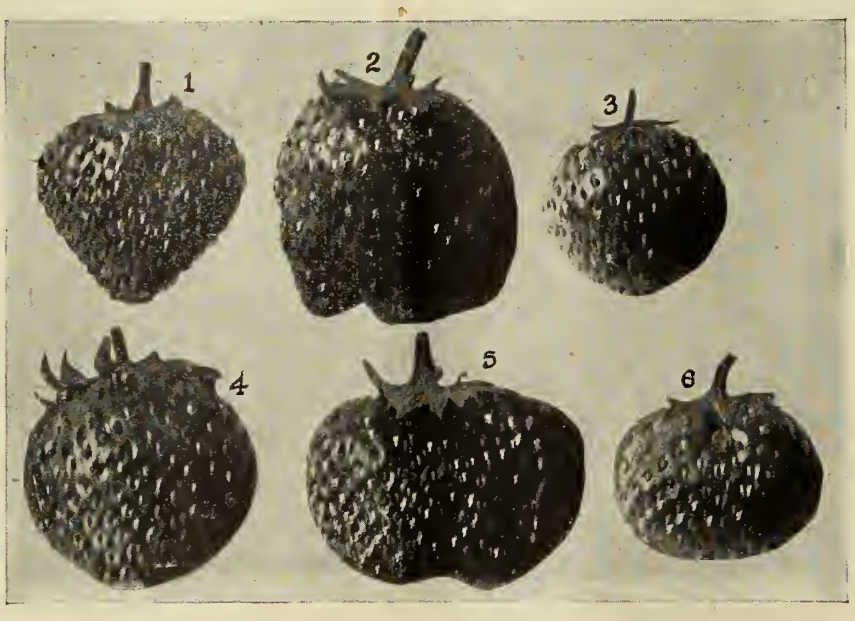
Observations.

While we established new records and showed how late fruit could be gathered this year, we do not believe it best to try to prolong the fruiting season quite so late. We think it best to stop cutting the blossoms August 1st. Then the plants will begin to ripen about August 20th and bear the bulk of the crop in August and September, with a few in the fore part of October. This would be our plan for the North. In the South, we believe that the season of ripening could be materially extended, perhaps well into the winter. When fruit is secured during the warm sunshiny weather, it is firmer, ships better than summer strawberries and is of finer flavor, although not as deep colored, perhaps, as in summer. When the weather gets cold, rainy and sour, the fruit is visibly affected, in color, flavor, and general appearance. The proper time to get the bulk of your fall strawberry crop is in September.

Many people will not believe that there is a real fall bearing strawberry. When we tell them about cutting off the blossoms to prolong the season, they ask us if cutting off the blossoms of any kind will not cause it to bear in the fall. The one thing that must be pounded into these doubting Thomases is that these true fall bearing varieties bear their fruit in the fall of the first year. All strawberry growers know that common kinds of strawberries will not bear fruit the fall of the same year they are set out. If you cut off the blossoms of a common kind of strawberry, that is the last you see of the blossoms that year. The

FRANCIS.

one thing that distinguishes fall bearing or everbearing varieties from other kinds is the quality of producing blossoms continuously from May until December. If these were allowed to mature, we could get a crop of fruit at intervals from June to December. In order to concentrate matters and get a large crop all at one time, it is best to clip off all blossoms until August 1st, as has been mentioned.



INDIVIDUAL BERRIES OF FALL BEARING VARIETIES.
1. Productive. 2. Francis. 3. Autumn. 4 Superb. 5. Americus. 6. Iowa.

AMERICUS.

These fall bearing varieties will also bear a large crop of fruit in June as well as common kinds of strawberries and after the June crop, they will bear another fall crop, thus we get three crops in the space of two years, one crop in the fall of the first year and two crops the second year. Most of these varieties are more fruitful in the spring than are common varieties. In order to get the three crops in two years, the plants must be unusually well fed and cared for to the best advantage.

Varieties.

So far as I am informed, the best four varieties now before the public are Francis, Americus, Superb and Productive.

Francis is a weak growing plant, although very healthy when it once gets started. The plants blossom extravagantly and bear fruit accordingly. It bears on old plants and young runners, the runners often ripening fruit before they strike root. The berries are very large, square shaped, irregular, very glossy and attractive. The flavor is fair. It outyields all other varieties with us.

Americus is a strong growing plant that makes more new runners and new plants than Francis although the foliage closely resembles that variety. The plants are strong sturdy growers and endure winters well. It is very productive and individual berries often grow real large. It is of fine flavor and takes well in market. We find that it fruits more heavily and the berries are larger on strong rich soils, although it does finely on any soil. It seems to meet the requirements of the average planter better than any other variety I have tested.

Productive. This variety is the strongest growing plant of all the fall

From
Our Ovens
To
Your Table

Untouched by human hands—

Post Toasties

—the aristocrat of Ready-to-Serve foods.

A table dainty, made of white Indian corn — presenting delicious flavour and wholesome nourishment in new and appetizing form.

The steadily increasing sale of this food speaks volumes in behalf of its excellence.

An order for a package of Post Toasties from your grocer will provide a treat for the whole family.

"The Memory Lingers"

Postum Cereal Company, Limited,
Battle Creek, Mich.

Plant "Pedigree" TREES

From "Country Life in America," Feb. 15, 1912:

The greatest new idea in fruit growing is "Pedigree Trees" a notion started by Mr. George T. Powell about fourteen years ago. By this method we can save several years of waiting, get bigger crops, make trees bear every year, secure larger fruit, and even get trees that are practically immune from certain diseases. Not all of these advantages can be had in every case, but eventually this idea will revolutionize nursery practice.

The old way was to propagate trees by means of buds taken from water sprouts or other non-bearing wood. This made straight, quick-growing trees, but postponed bearing.

The new idea is to propagate only from bearing wood of trees of known record. For instance Mr. Powell had Tompkins County scoured for the best King tree and found one that had never failed to bear a crop of fine apples for about twenty years, although it had never been sprayed, and, best of all, it seemed immune to the canker which has killed nearly all the old King orchards. Mr. Powell has propagated fifty trees from this one. And he has Sutton Beauty orchards propagated from a tree which corrects the worst failing of this variety, viz., wood that is too weak to carry a load.

Several nurserymen now offer pedigree trees. They cost a little more, but who cares? The cost of trees is a very small item in the history of an orchard.

Pedigreed Trees in Stock

Here is a brief description of some of the Pedigreed Trees we have in stock. See also list in our ad on page 44 of this issue of The Fruit-Grower.

McIntosh Red—11 year old trees, 16 ft. high, 16 ft. spread, diameter of trunk 9 inches. Fruited for five years. The ninth year produced ten boxes fancy fruit. Prize winner at National Apple Show at Omaha, Nebraska, also in every local show entered.

Newtown Pippin—Age of trees 11 years, height 18 ft., spread 18 ft., diameter of trunk 9 inches, trees perfectly sound in every respect. Fruited for four years; produced last crop 11 boxes fancy fruit.

Gano—Nine year old trees, height 20 ft., spread 17 ft., diameter of trunk 10 inches, fruited for three years, produced four boxes of fancy fruit, which won first prize at the Colorado National Apple Show; carload from this same orchard won $250.00 loving cup.

Jonathan "A"—Seven year old trees, height 18 ft., spread 14 ft., diameter of trunk 8 inches. Fruited regular heavy crops, 1910 crop, 11 boxes fancy fruit. Color very dark red. Prize winner at four different apple shows.

Mammoth Black Twig "C"—Seven year old trees, height 20 ft., spread 20 ft., diameter of trunk 11 inches, fruited heavy crop each year, 1910 crop, 8 boxes fancy fruit. Color good.

Romo Beauty "D"—Nine year old trees, height 12 ft., diameter of trunk 8 inches, borne heavy crops for three years, 1910 crops, 10 boxes of fine fruit.

Spitzenburg "A"—Nine year old trees, height 16 ft., spread 14 ft., diameter of trunk 8 inches, bears regularly, and in 1910 produced 6 boxes of fine fruit.

Stayman Winesap "C"—Nine year old trees, height 20 ft., spread 18 ft., diameter of trunk 8 inches. Winner of first prize on plate Denver National Apple Show, 1910. First special prize Barteldes Seed Company. First prize on one box lots and shared the Grand Sweep Stakes prize of $250.00 loving cup with Gano.

Winesap "A"—Eleven year old trees, height 12 ft., spread 12 ft., diameter of trunk 8 inches, fruited regularly and bore heavy crops, 1910 crop, 14 boxes fancy fruit.

W. W. Pearmain—Ten year old trees, height 20 ft., spread 20 ft., diameter of trunk 10 inches, borne regularly for four years, in 1910 produced 15 boxes fancy fruit.

Ragan (Black Ben)—Fifteen year old trees, height 25 ft., spread 25 ft., diameter of trunk 12 inches, fruited regular heavy crop, 1910 crop, 22 boxes fancy fruit.

Your Chance to Test Pedigreed Trees

We want you to test Pedigreed Trees in your own orchard, give them a fair trial with other trees and be guided in your future planting by results.

Send us only $1.50 to cover cost of packing and handling and we will send twelve of our choicest pedigreed trees, worth $4.20, as shown below. Select the variety of apple wanted, cross out the other four, sign coupon and mail today.

Winfield Nurs. Co., Winfield, Kans.

COUPON

Winfield Nursery Co.: Enclosed find $1.50 for which please send me 12 pedigreed trees, as follows, for testing. I agree to pay express charges.

10 Apple, 3 to 5 ft.....$3.50
Ragan, Stayman Winesap, Jonathan, Winesap, Rome Beauty.
1 Hottes Elberta Peach, 4 to 5 ft..... .35
1 Royal Duke Cherry, 3 to 4 ft..... .35
Regular price.....$4.20

Name .....

Address .....

Stop! Look! Listen!

STOP planting drone fruit trees—LOOK into their history before you buy them—LISTEN to the way of success—the Pedigreed Way, the only way by which fruit can possibly be made universally sure and successful.

Don't Plant a Single Tree Until You Know Its Pedigree—

Just what its parentage has done for its owner

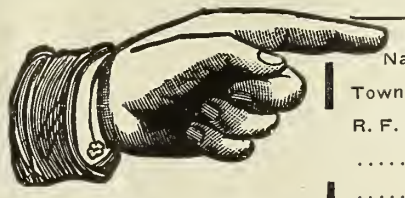
You know what it means to grow live stock from prize winner individuals. It is just the same with your trees. Cut out uncertainty.

Special Offer Now to Introduce Pedigreed Orchard in Your Community

Last year we grew an unusually large amount of the best varieties by **our exclusive pedigreed method**—every one of the trees was grown from a very select scion off of a very select heavy bearing tree of very fine quality of fruit and a very regular bearer. There are no other trees on the market of this class. We want a sample order of these trees in your community and the offer that we will make you is one you can't afford to reject.

Write Your Name Right There

—Fill out the other spaces, cut out and mail to us for **pedigree sample orchard offer**



We Will Send You

OUR SAMPLE PEDIGREED ORCHARD OFFER ON THE FOLLOWING LIST OF VARIETIES, and copy of our Grand Free Book, "PEDIGREED HORTICULTURE."

APPLES

	2 Yr. Extra	2 Yr. 4-6 ft.	2 Yr. 4-5 ft.	2 Yr. 3-4 ft.	1 Yr. 3-4 ft.	1 Yr. 2-3 ft.
Gano	5420	5500	3920	3510	1540	420
Jonathan	8520	12670	8230	5050	3940	3290
M. B. Twig	1640	1480	290	440	920	180
Newtown Pippin	130	60	180	180	1360	610
Rome Beauty	2910	1380	1780	990	1680	1030
Spitzenburg	440	580	510	390	1210	440
Stayman Winesap	1780	3030	780	620	5510	1900
Winesap	2620	2780	3930	2920	3900	1960
W. W. Pearmain	2810	1230	640	530	560	270
McIntosh Red	280	....	560	400	2150	620
Ragan (Blk. Ben)	6340	3130	3270	1560	4390	1330

PEACHES

	5-6 ft.	4-6 ft.	4-5 ft.	3-4 ft.	2-3 ft.	1-2 ft.
Japan Blood Dwarf	280	490	1330	930	840	60
Hottes Elberta	1260	1230	4750	5110	5280	..
Phillips Cling	....	....	200	260	410	..
Orange Cling	....	....	150	190	400	..
Mamie Ross	....	380	210	50	140	..

CHERRY

	5-6 ft.	4-6 ft.	3-4 ft.	2-3 ft.
Early Richmond	100	1070	1200	200
Montmorency	370	760	2070	580
Royal Duke	1070	3080	310	550

Mail Coupon Today—This coupon does not put you under the least obligation to purchase a single tree, but if you expect to plant any trees, you can't afford to place your order until you get our big sample orchard offer. Get your pencil right now, fill out the coupon, mail **today.**

Big Commercial Planters

Our method gives you in trees that which has been given the live stock growers and seed growers years ago. No drone trees — every one a quality-bearer, quantity-bearer, and regular-bearer. Any one of these trees will make you five times as much profit as an ordinary tree and doubles the selling value of your land.

SEND THE INQUIRY COUPON TODAY

Address all correspondence to

Winfield Nurseries

WINFIELD NURSERY CO. **J. MONCRIEF, President**

WINFIELD, KANSAS, U. S. A.

Originators and the only nursery in the world growing exclusively by pedigreed method.

Coupon

Winfield Nursery Co., Winfield, Kansas, U. S. A.

Send me a copy of

Pedigreed Horticulture

(free of charge), and you may quote me on the following Pedigreed Trees:

Quantity.	APPLE	Size
.....	Jonathan	.....
.....	Mammoth Black Twig	.....
.....	Gano	.....
.....	Ragan	.....
.....	Rome Beauty	.....
.....	Spitzenberg	.....
.....	Stayman Winesap	.....
.....	Regular Winesap	.....
.....	W. W. Pearmain	.....
.....	McIntosh Red	.....
.....	Newtown Pippin	.....
.....	Hottes Elberta Peach	.....
.....	Japan Blood Dwarf Peach	.....

Name .....

Town .....

R. F. D. No..... State.....

.....

.....

.....

bearing varieties. The old plants crown up and grow to prodigous size. The foliage is dark, thick and leathery. The young plants are large and produce in great abundance. The berries are medium to large in size, firm, with seeds on the outside, a good protection when shipping to market. The flavor is fair and the color good. I named this variety for Mr. Cooper, and its name suggests its leading characteristic. It is a pistillate variety.

Superb. The plants of this variety are very hardy and endure the winters fully as well as Americus. They are great runners and one young plant, if set early in the spring, will cover over a great space with runners and new plants. The plants do not run even in size but many are small with a few large ones. The fruit is very large, beautiful, glossy colored and as even as if turned in a lathe. With us it is not as productive as the other three varieties, but there seems to be no waste energy, every blossom and fruit coming to perfection.

The Francis and Americus bear fruit on the young runners as well as the parent plants. The Productive and Superb, bear only on the old mother plants. The latter two are more adapted for producing the three crops in two years. The Francis and Americus seem to bear so much fruit in the fall of the first year that they need transplanting to a new place the next spring.

I have tested several other seedlings of Mr. Rockhills' and Mr. Coopers', but up to date, have not seen anything superior to the above.

New York. L. J. FARMER.

A BOX OF FRANCIS STRAWBERRIES FROM L. J. FARMER.
Photographed October 30, 1911.

Orchard Heating vs. Jack Frost.

A few years ago the idea of "heating all out of doors" would have been thought by many as ridiculous and out of reason. Orchard heating is new to the Colorado orchardist, but the practice is not a new idea.

Careful observance of the weather conditions and study of the United States weather forecast should be made before and during the period when spring frosts are expected. There should be well tested thermometers in the orchard as well as on the outside, and notes should be made of the readings.

There is no doubt but that the earth stores up a certain amount of heat during a warm day and that this heat is given off in some quantity during the night, and that a cloud or smoke over any given area will act as a blanket and cause the heat to be radiated more slowly. But when a cold spell is preceded by several rather cold, cloudy days, there is much less heat stored in the soil as the soil, during all these days, has been slowly giving up its heat, therefore the blanket of smoke does little good in this instance. Smoke, however, does much to retain the heat from the heaters and also helps to prevent the frozen fruit from thawing out too rapidly after sunrise in the morning.

If the temperature on the outside of the orchard falls too much below 19 degrees F., there is little use to maintain the fires unless one has a large number of heaters, for it will take a large number to keep the temperature at about 30 degrees F. In a few instances the temperature of protected trees has been raised about 14 degrees, but as a rule it takes very good equipment, using plenty of fuel, to raise the temperature 10 degrees F. The degree of temperature damaging to fruit will depend largely upon the stage of growth of the fruit buds. The amount of damage done to the fruit will depend a great deal upon the amount or number of thrifty buds.

The theory of holding back the fruit buds by keeping the soil around the roots frozen is very misleading because the commencement of bud growth is independent of root action. If the soil could be so treated as to affect the surrounding temperature to such an extent as to keep the sun from warming the atmosphere around the fruit buds, then it would be well to treat the soil, but, so far, nothing of this kind has been found worthy of recommendation.

Sweet cherry buds, which have started to swell, will not stand a zero temperature for any length of time. Dormant peach buds will not stand 15 degrees below zero for any length of time. Dormant apple, sour cherry, and native plum will stand the lowest temperature likely to occur in the fruit sections of Colorado. A strong, vigorous peach tree, well filled with bloom, ought to go through a temperature of 28 or 29 degrees with a good crop if the frost is of short duration and does not freeze the tissues solid. When set, peaches have been known to withstand a temperature of 27 or 28 degrees for a short time. Apples, when in full bloom, will not stand a temperature lower than 28 degrees, and this will do a great deal of thinning of the fruit. After they are set they will not stand much below 29 degrees without a great loss to the crop.

One great advantage in fighting frost is to have the trees bear plenty of bloom. The more flower or fruit buds the better, as this gives a larger number for frost elimination. When an apple tree bears full bloom, if one can save about one flower out of ten or twelve, he ought to harvest a full crop of apples. Properly pruning a tree for a number of years will have much to do with making it bear a full bloom every year. When a tree is allowed to over-bear one year, there is a tendency for it to become a shy bloomer the next spring. Thinning will do away with the use of props and will help the trees to form more fruit buds for next year's bloom.

There are several good orchard heaters on the market, although it is probable that none of them have reached perfection. Be sure that the kind bought will meet the individual requirements, and then do a little experimenting in regard to lighting and extinguishing them. The number of heaters needed will vary somewhat with conditions, but one will not miss it very far if there is one heater to the tree. It is better to have too many than too few. Heaters that will burn from six to eight hours will not, as a rule, require refilling in the night.

R. S. HERRICK,
Colorado Exp. Sta.

Turn Your Orchard into a Real Gold Mine
This Year By Spraying Right

SOLID STEEL —NO WOOD

The Right Way to Spray is to get

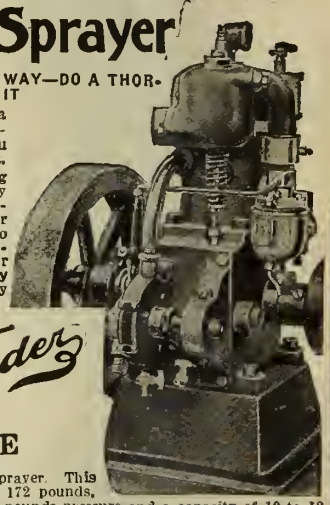
Don't Get a Makeshift—Get a Real GENUINE CUSHMAN —The Kind the Big Experts Buy

The CUSHMAN The World's Best Power Sprayer

AND GO AT IT IN A BUSINESS WAY—DO A THOROUGH JOB OF IT

THERE never was a time in history when there was a greater opportunity to get rich in fruit growing—provided you use brains. No matter how hard you work, you will positively fail unless you thoroughly spray your fruit.

The CUSHMAN SUPERIORITY as a sprayer for making money out of fruit growing is conceded by by all experts and big orchardists who have used it, either alone or with other makes. No orchardist who has used a Cushman would ever use any other at any price. We have won every Gold Medal and every First Prize in every National, State and County contest.



The CUSHMAN Winner-Wonder SPRAYER ENGINE

is absolutely the most powerful power ever put on any sprayer. This engine is the result of a lifetime study. Only weighs 172 pounds, develops over four horsepower, maintains over 250 pounds pressure and a capacity of 10 to 12 gallons spray mixture per minute. You can use two, three or four leads of hose—all the power you can use.

The CUSHMAN Steel Trucks are the most practical ever designed for sprayer use.

Steel Tanks are better than wood. We use heavy galvanized steel—no denting or leaking. No drying out. Inside coated with Cushman Chemical-Resisting Compound.

THIS SPRAYING GUIDE AND BEAUTIFUL ILLUSTRATED CATALOG FREE TO YOU

Every fruit grower should read this book on spraying, telling why the Cushman is "The World's Best Power Sprayer." Write for your copy today.

Cushman Mfg. Co.
Branch—Spokane Washington
St. Joseph, Mo.

IMPORTANT NOTICE—Unless you get your order in early, you will positively be badly disappointed on delivery and may not be able to get at any price.

Wilkinson's Red Hot Heater

For Orchards, Vineyards, Gardens, Etc. Burns Wood, Coal, Coke, Charcoal, Etc. Agricultural Chemicals and Spray Materials. Note our low prices for February. Aresnate of Lead, $8.50 per hundred pound keg. Lime-Sulphur Solution, $8.00 per barrel. Flour Sulphur, $2.25 per hundred pounds. Copper Sulphate (Blue Vitriol 6c per pound. Paris Green, 16c to 18c per pound. All standard makes, guaranteed. Write for prices on pound lots.

ORCHARD SUPPLY CO.
412 N. MAIN ST., ST. LOUIS, MO.

Cherry Picker

Attention, growers, some of our pickers are an absolute necessity in your orchard. Note—Cherry stems cut with rough ends drop into sack hung from corrugated shears attached to light glove and are removed from the bottom by simple device. For a limited time we will fill all orders at the extremely low price of $1.00 each or $5.00 per half dozen, by express. Address

RICHARDSON CHERRY PICKER CO.,
Dept. B. Benzonia, Mich.

Strawberry Plants THIRTY Varieties

The best collection obtainable. Varieties of all seasons and adapted to all sections of the United States. We have what you want, ask for our descriptive catalogue and price list.

D. McNallie Plant and Fruit Co.,
Sarcoxie, Missouri

In writing advertisers please mention The Fruit-Grower.

You Can't Fail With A Fairfield!

90% Hatches Guaranteed!!

"For Every 100 Hatchable Eggs Placed in My Fairfield Incubator I Personally Guarantee You 90 or More Hearty, Lively, Profit-Making Chicks—And My Guarantee Means Satisfaction to YOU or Your Money Back!"

Sam Thompson
President.

I CAN show you proof of hundreds — yes, THOUSANDS—of hatches which have been made on the Fairfield with results running all the way from 90% to 100%—results *never before* equaled by any other incubator at *any* price.

Every Fairfield Incubator which leaves my factory is backed with a binding, must-do-it guarantee to produce 90% hatches, or better—and if it fails I take back the incubator, refund your money and pay freight charges both ways!

No "shell game" about that! No chance for YOU to lose—no speculation, no uncertainty!

The Fairfield is NOT "the newest thing out"—it is NOT an experiment. It is not an unknown quantity. It has stood the time test for many years.

The Fairfield which I offer YOU today is the same honest, sure-and-certain, dependable, guaranteed Fairfield which I have sold to thousands of the country's leading poultrymen during past years—it is so good that I can see no way to improve it, no "new wrinkle" that could add to its value in any way. It is built right here in Fairfield in my own factory by the most skilled labor and from the finest materials possible to secure. It is constructed throughout of the very best seasoned California redwood. It positively will not shrink or warp and if you can find *in any part* of the Fairfield a particle of "composition board" or other equally flimsy cheap materials such as used in many so-called high-grade incubators I'll make you a present of the machine. No other *heating system* in use can compare with that used in the Fairfield for *steady, even, perfectly distributed temperature*—absolutely eliminating the chick-killing hot centers and cold corners. My heating system is manufactured from finest copper and carries the life-producing warmth over the entire egg chamber. This means healthy, strong, vigorous chicks, turkeys, (ducks and geese, too) which mature rapidly to a marketable size.

NOW!! Put Me to the TEST

Try the Fairfield Two Hatches at My Risk

You don't need to take my word as to the many merits of the Fairfield—nor the word of the thousands who have found poultry success in the use of this World's Greatest Incubator!

PROVE all these things for yourself, in your own home, in your own way! Send for my Big Poultry Book right now—TODAY. Select the size of incubator you like best—the Fairfield is made in three sizes, 110, 165 and 220 egg.

Let me ship the machine direct to your station, FREIGHT PREPAID, for a fair trial at my risk. Not merely for a week, or two weeks or a month—but for 42 days or longer—time enough for two big, successful, encouraging 90% to 100% hatches.

Get a Fairfield Brooder also, on the same basis. In the Brooder you can house the swarm of little chicks from your first hatch, while the incubator is filled the second time. Watch the little chicks grow and develop from day to day! Compare them with any hatch you ever made or ever saw made with any other incubator. Use good, hatchable eggs and load the machine to capacity each time and if you don't get results FROM BOTH HATCHES which are entirely satisfactory to you IN EVERY POSSIBLE WAY pack up the incubator, ship it back to me freight collect and receive back every penny of your money.

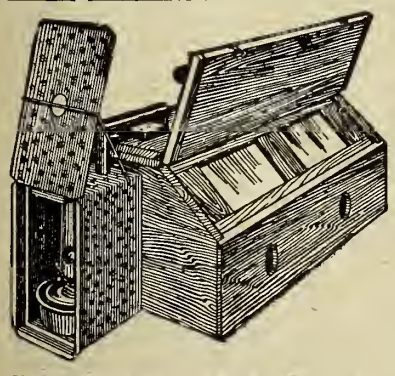
That's the only sort of a basis on which you should buy ANY incubator. That's the basis on which every Fairfield that leaves my factory is sold—**and they never come back because every Fairfield performs just as it is guaranteed to do!!**

Your Neighbor Has a Fairfield!

I haven't room here to publish any of the thousands of letters I have received from satisfied Fairfield owners. My friends and customers are located in every part of every state in the union. It is altogether likely that one or more of your very near neighbors owns a Fairfield—and you will probably find his name in my big poultry book, signed to an enthusiastic letter about the Fairfield. I'll be glad to give you the names of Fairfield users in your locality so you can look them up and learn at *first hand* what your best friend and neighbor thinks about the Fairfield.

Get HIS Opinion!

My New Model Fairfield Brooder



The illustration published here falls far short of doing justice to the new model Fairfield Brooder. This brooder is in the same class as the Fairfield incubator—the best in the world at any price.

My Fairfield Brooder will "mother" your little chicks as fast as they are produced by the Fairfield incubator—and this brooder is reducing the death rate among young chicks to practically nothing and paying for itself many times each year in the chicks it saves and raises to maturity. There are a number of original and valuable features about this brooder not found in other makes. Large illustrations and detailed description will be found in my Big Free Poultry Book which I will send you as soon as I receive your name signed to the accompanying free book coupon.

Mail Coupon for BIG FREE BOOK TODAY!

Sam Thompson, President
Nebraska Incubator Company
50 Main St., Fairfield, Neb.

Sign and Mail This Coupon Today and Get My

Big Poultry Book FREE

I want you to have a copy of my dandy big poultry book—whether you eventually give me your order for an incubator or not. My book is the finest and most complete catalogue and poultry guide ever published—and it is mailed absolutely free—and without any obligations of any kind if you will just sign and mail this coupon before the books are all spoken for. The best time to mail YOUR coupon is RIGHT NOW.

Sam Thompson, President, Nebraska Incubator Company,
50 Main St., Fairfield, Nebraska:

Dear Sir: Please mail me, postage fully prepaid, your big New Poultry Book and Catalogue. This request does not obligate me in any way.

Name _____

Town _____ County _____

R.F.D. or Street No. _____ State _____

THE FRUIT-GROWER

ST. JOSEPH. MISSOURI

Title Registered in U. S. Patent Office. Bro. Jonathan—Trade-Mark—Registered
Copyright, 1912, by The Fruit-Grower, St. Joseph, Mo.

Address all communications and make remittances payable to "The Fruit-Grower,"
Eighth and Charles Sts., St. Joseph, Mo.

WM. G. CAMPBELL, General Manager JAMES M. IRVINE, Managing Editor
E. H. FAVOR, Associate Editor

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....J. C. BILLINGSLEA.....First Nat'l Bank Bldg.
New York Office.....A. H. BILLINGSLEA.....No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS.....New York Life Bldg.
St. Louis Office.....A. D. McKINNEY.....Third Nat'l Bank Bldg.
Minneapolis Office.....ROY R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents Agate Line. $7.00 per inch. Fourteen Lines to an Inch.
Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.

No advertising in class generally termed "Objectionable" accepted under any conditions. Editions mailed on first day of month. Forms close on 20th of preceding month, i e., January forms close December 20th, etc.

An Advertisement in The Fruit-Grower will place you in touch with One Hundred Thousand of the Most Prosperous Farmers in America

SUBSCRIPTION RATES

Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c, or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list.

Remit Coin, Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 MARCH, 1912 Number 3

Shippers or Stockholders—Which?

At the late meeting of the Grand Junction (Colo.) Fruit-Growers' Association an interesting situation developed, which will be of interest to members of shipping associations generally.

The Grand Junction Association has considerable stock held by persons who do not ship through the association; in previous years stockholders have received substantial dividends on their stock, but lately the cost of doing business has increased until no dividends have been paid. At the meeting recently held a controversy arose between shippers on one side and non-shipping stockholders on the other. It was claimed by the latter that they could not sell their stock, since there is still some treasury stock available for new members; on the other hand, there are no dividends on this stock, and investment stockholders are losers. One member said he had $600 worth of stock in the association, which he is not permitted to dispose of; he is no longer engaged in the fruit business, and receives no benefits as a shipper, and that his money is practically confiscated, since he receives no dividends on his stock.

The controversy which arose in this association is the same old fight that has come up in many other associations. The contest between men who hold stock in the association for investment purposes, and those who hold stock as shippers for the service the association will render in marketing their crops. The investors are interested in charging a heavy commission for handling fruits, and the shippers are interested in keeping the commission down to as low a point as is consistent with service.

The investor in the Grand Junction Association claims that his money is used as working capital for the association, without any return being made for such use. He insists that the association increase commission for handling fruit to 7 per cent, so that dividends are available. On the other hand, shippers suggested that the commission be increased to 6 per cent until the extra commission of 1 per cent provides a fund of $40,000 to be used as a working capital. The latter suggestion was adopted, according to our information.

Among men who are giving most thought to the subject of shipping associations there is a feeling that stock dividends should not be paid nor should any stock be sold with any expectation of such returns. Instead, the capital stock should be issued to members who ship fruit, but the bulk of the working capital should come from these shippers, in proportion to the quantity of fruits shipped, and any surplus should be divided among them on the same basis. It is claimed that if this is not done, it is possible for the control of a shipping association to be secured by the investment stockholders, who will keep commissions up and cut expenses in every way possible, even at the expense of service rendered. They will be interested only in profits of the association, rather than in return to the growers shipping through the association.

If working capital for the association is not secured through the sale of stock, it must be secured by fixing a commission on fruits and produce handled which is high enough to provide a surplus, to be used as working capital. When this is secured, commissions can be reduced to actual cost of handling the business, and if at any time there remains a surplus it should be distributed among the members in proportion to quantity of fruit furnished by them.

If for any reason this plan should not be adopted, then it would seem as though the stock sold to persons who hold it as an investment should be treated as preferred stock, and the commission charged shippers should be great enough to provide a fixed return on this investment—say 6 per cent. If there is a surplus over and above this figure, then it should be pro-rated among the shippers according to their shipments. In this way the stock of an association will not earn above a fixed sum, no matter how large the commission charged nor how great the volume of business done, and there will be no danger of any controversy such as too often occurs in shipping associations.

This in an important matter and should be carefully considered in organizing shipping associations. It is well to ask the question: Is the association formed to make money for stockholders or to market the fruits of members? Practically every association is formed for the latter purpose, and it is wise, therefore, not to adopt a plan of organization which is likely at any time to make it possible to favor the investors at the expense of the growers and shippers for whom the association was formed.

Over-Production of Apples.

Recently this subject has been discussed a little more seriously than for some time past, the slow demand for apples being largely responsible for the subject having been revived. It is pointed out that apples are dragging this season, notwithstanding the crop for 1911 was not nearly as large as many others that have been harvested. The question is asked if it isn't possible that within a few years there will be still further trouble in selling apples, in view of the increased production.

No one who seriously considers the subject believes that the United States had more apples in 1911 than the people in this country could easily consume. Suppose the crop amounted to 45,000,000 barrels—and it was not nearly so large as that—it would be only a bushel and a half per capita, even if not a single apple were exported. Certainly this is a small quantity for our people to consume; much greater quantities of apples have been consumed in this country, time and again.

Now, what's wrong? First, we are getting away from the apple-eating habit. It's hard to make this confession, but we believe that the consumption of oranges and bananas has undoubtedly lessened the demand for apples. Perhaps this has been due to the fact that consumers could know what they were getting when they bought oranges or bananas, but were in doubt when they spent their money for apples. Better methods of grading and packing apples will undoubtedly increase the confidence of the buying public, and that means greater consumption.

Then, too, apples have been too high from the standpoint of the consumer. No matter what the grower gets for his apples, the price is usually pretty high when the apples get to the consumer, and this high price has undoubtedly shut off consumption.

Not too many good apples are grown, nor are there likely to be for some time to come. But there are too many inferior apples put up every season—too many were put in storage last fall. If good apples could be put in the hands of consumers at reasonable prices, the consumption could be multiplied many times. We are a nation of apple-eaters, but the quality of the fruit and the price must be right.

The question is, what are the growers going to do about it? The solution of the problem is largely in their hands.

American Potash Supply.

Uncle Sam has started out to find a supply of potash which will be ample for our needs, and it seems that the problem is in a fair way of being solved. Here and there have been found deposits of potash, but the most promising source of supply is from the kelp fields of the Pacific coast. Kelp is a seaweed which grows most vigorously, some of the stalks being more than a hundred feet long. It is claimed that this kelp contains a great percentage of potash, and that it is most valuable as fertilizer. It is further claimed that by-products will be valuable enough to pay all expense of treating the seaweed, leaving the potash as clear profit, and it is further claimed that $40,000,000 worth of potash can be secured every year.

This is good news for Americans, for it means that a waste crop is to be made most valuable, and that a lot of money heretofore sent abroad for fertilizer will be kept at home.

Vote for Parcels Post on March 18.

March 18, 1912, has been set apart as the day on which all who are interested in parcels post are urged to write to their congressmen and senators, urging their support of an up-to-date parcels post bill, and not a bill which provides only for parcel delivery on rural routes. Every farmer and every other person who wants parcels post is urged to write to the congressmen from their respective districts and the senators from their states, expressing their desire in this mater. Don't forget the date—March 18, 1912.

Prof. W. A. Henry, well known for his work in the Wisconsin College of Agriculture, has recently done very effective work in behalf of a parcels post bill, and reports that the express companies and other interests opposed to parcels post are hard at work against such a bill as the farmers of the country want. Professor Henry states that the agitation for 1-cent letter postage is part of a well-planned campaign against parcels post, and he urges those favoring the parcels post to oppose the 1-cent postage bill.

It is hard to understand how the United States has remained so far behind other nations in regard to parcels post. Practically every other civilized country has parcels post, and packages can be sent by mail from New York to Germany more cheaply than they can be mailed to Hoboken or Jersey City. It is to be hoped that enough influence will be brought to bear upon Congress to secure the passage of the parcels post bill now before the Senate.

As for 1-cent postage taking the place of parcels post, we cannot understand why the propositions are antagonistic. We don't believe parcels post will be a losing venture for the postoffice department, so that it will have no bearing upon the plan to reduce letter postage.

TESTED SEED CORN

All our corn is grown under our personal supervision and is carefully cleaned and graded, and tested by experts trained at the United States Government Laboratory.

STRAIGHT NECK DWARF **Milo Maize**

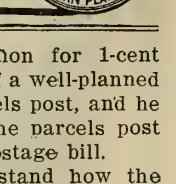
WILL GREATLY INCREASE YOUR YIELD. Nothing like it. Earliest and best. This is the year of all others to secure this strictly new and improved variety which is so much better and more productive than any other.

FREE SAMPLE and Big CATALOG

of 106 pages with hundreds of illustrations. Write also for the Barteldes Cultural Guide. It is FREE.

VERY CHEAP—First-class Nursery trees carefully selected and inspected. Also fertilizers, garden tools, incubators, and poultry supplies. Best goods and lowest prices. Ask for Special Book.

BARTELDES SEED COMPANY,
Oldest Seed House West of the Mississippi River.
835 Massachusetts Street,
LAWRENCE, KANSAS.



SMALL FRUITS IN COLORADO

When it is possible to clear from $300 to $500 per acre from between-the-row crops of small fruit, as is done oftentimes in the Grand Valley of Colorado, why does the average fruit grower plant trees at all? The question is a puzzling one at times, just as the ordinary business man is puzzled in years when his business shows little profit, because he chose it in preference to some other enterprise which might have made him wealthy. It is a fact, however, that many ranchers in the Grand Valley have cleaned up more from the small fruits planted between their rows of fruit trees than they have in later years from the main crop.

The principal small fruits grown in the Grand Valley are grapes and strawberries, while in the Plateau Valley, also in Mesa County, the dewberry is the money-making small-fruit crop.

More than two-thirds of the grapes have been pulled out in the Grand Valley in the past two or three years, and the acreage is slight compared to what it was; possibly not over 500 acres in the entire valley. This is due principally to the fact that the peach growers had one or two exceptionally good years, and when they netted from $500 to $1,000 per acre, they didn't have much time to waste on a minor crop, like grapes. Now many of these growers are sorry, for the frost has never destroyed a crop of grapes, even in those years when every other fruit crop was practically a total loss. Since the smaller acreage of grapes, there has been a corresponding increase in prices, and grapes now often net the grower from $200 to $400 per acre, while some of the growers have cleared as high as $500 and $600 per acre, from vines planted between the trees.

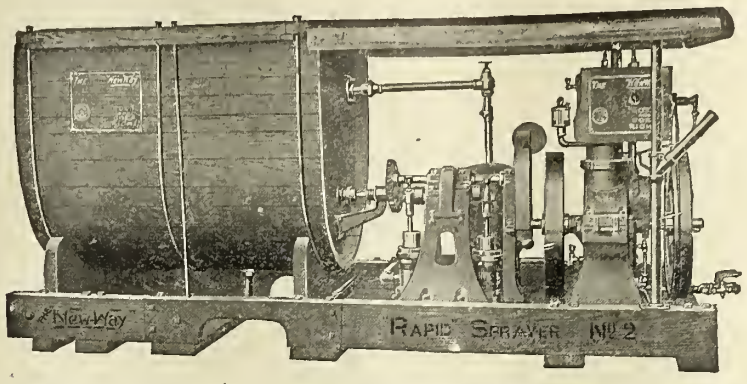
Covered in Winter.

Few people outside of the valley are aware of the fact that practically any of the finer grapes which can be grown in California, are also easily produced in the Grand Valley of Colorado, de-

If You Want Beautiful Apples and the Greatest Quantity, Insure Having Them By Using

THE "New-Way" "Rapid" Sprayers

Wenatchee, Wash., June 7, 1911.
Gentlemen:
Two years ago I bought a "NEW-WAY" Spray Outfit, large size, and this spring one of your smaller size. Neither one has given me any trouble. If I was to buy another it certainly would be a "NEW-WAY."
Yours truly,
(Signed) O. G. FRANCE.



Watson, Ill., Nov. 12, 1911.
Gentlemen:
I am now through packing my apples and will say I am well pleased with my "NEW-WAY" twin cylinder sprayer. I sold our apples at $4.00 per barrel at the packing house, and the parties that bought them say they are the finest apples they have ever seen.
Yours truly,
(Signed) JOHN W. WALLS, Supt.
Wright & Co., Orchard.

It is guaranteed to stand hard, continuous, high pressure work and is built complete in our factory which insures its high quality.

Pump, either two or four cylinders, gear driven with crank bearings one inch apart which eliminates all chances of breakage of crank shafts, a very common complaint with other styles of spray pumps with bearings wide apart.

Pump pressure dome is drawn steel tested up to 600 pounds pressure. No danger of bursting under high pressure as with cast iron domes.

Engine is our celebrated "NEW-WAY" Air Cooled, the highest quality engine made. Most all other sprayers are equipped with the cheapest engine the sprayer makers can buy and will not stand up to heavy duty work like the "NEW-WAY".

Write for Our Catalogue S-1 giving full description

THE "New-Way" MOTOR COMPANY
LANSING, MICHIGAN, U.S.A.
25 ASH STREET

JOHN DEERE PLOW CO.
Kansas City, Mo., U. S. A.

spite the more severe cold. They are saved from winter-killing by covering the plants, after pruning, with a heavy layer of soil, which is removed in the early spring.

California, however, has an advantage over Colorado in the production of these fancy table grapes, in freight rates. California can ship grapes to Denver at $1.25 per 100, which is the same rate that applies to the Grand Valley, with an advantage in distance of somewhere close to 1,000 miles. Probably, however, if the acreage were increased so as to permit the carload shipments this discrimination might be remedied by an application to the railroads for relief.

Grape culture has been carried on in the Grand Valley for the past ten or fifteen years, coincident with the raising of other fruits. It was early discovered that the Flame Tokay and Cornischon, as well as the Sultana, Muscat and other varieties, made famous by their successful culture in California, could be grown in the valley by protecting the plants from the winter colds. The spring frost rarely did the vines any damage.

"Our grapes have never been frozen out since I came here," said H. W. Patten, a prominent fruit grower of the Clifton section; "and they have been our most profitable crops, even though I have but one-half an acre. I have seen the vines frozen three times in one spring, after they had budded out, but they still had a fair crop, budding again after each successive freeze. Grapes in the valley require about the same care as the fruit trees, both in irrigation, pruning and cultivation. They probably require less water than the trees.

"My vines are set eight feet each way, although I believe if I was planting more grapes I would set them eight by ten. This would allow more room for cultivation and there would not be the likelihood of injuring the vines."

A Crate to a Vine.

Mr. Patten, in common with a large number of the growers of the Grand Valley, believes that the Flame Tokay is the best grape to be grown in Colorado, with the Cornischon a close second. Both do exceptionally well in this soil. The Eastern Concord grape does not grow as large here by at least one-half as it does in the East. Other varieties of fancy grapes, while they do as well as the varieties named, will not bring the price in the market.

Grapes bear with remarkable profusion—very close to a crate to each vine. The crate holds twenty-five pounds, and will net the grower nearly a dollar each for the Tokay and 25 cents less for the Cornischon. Planted in eight-foot rows, 800 vines can be set in one acre, less, of course, between the tree rows. Practically the entire output of grapes of the valley is marketed west of Denver and in Colorado, the fruit going out in express shipments. One of the reasons given for the decline in grape raising is that the large acreage previously planted made such an output as could not be handled in the Colorado markets. It was generally all dumped on the market at the same time, with the usual result.

The grapes generally ripen about the time the last Elbertas are shipped, and if they are sent to market at once they find a consuming public already pretty well sated with other fruits. It has been found, however, that the grapes can be held in dry storage with but little trouble, and without much loss. Mr. Patten simply fills his packing boxes and stands them away in his packing shed, or cellar until Thanksgiving day approaches, when he finds the market has recovered from any temporary indisposition. Experiments are now being made which will result in making it possible to hold grapes until the Christmas holidays by packing in sawdust. On his half acre of grapes the past year Mr. Patten netted about $150, and in addition to that he lost about 1,000 pounds of his crop.

Grapes are pruned in the fall, after the crop has been taken off, generally being cut back to two or three buds. They are then covered up with earth and remain in that condition until the spring months. Pruning in spring, after the sap has begun to run would cause them to bleed.

Five-Pound Bunches.

The Flame Tokay grows in gigantic bunches in Colorado, one grower exhibiting a single bunch at the county fair weighing more than five pounds. From a commercial standpoint, however, it is doubtful if such experiments are a success, as in most cases the large bunches begin to rot in the center. The grape has always been a successful crop in the Grand Valley, although whether it will regain its old prestige remains to be seen. Experiments are now being made with grapes from the famous Rheingau vineyards in Germany, which it is claimed grow to perfection here. These are the grapes from which Germany's most famous wines are made and Verner Z. Reed, the Loma millionaire, declares that the cliffs which protect the orchards in the valley are ideal for their cultivation.

Strawberries are also raised to some extent in the valley, chiefly in the Fruita section, where from five to ten cars are shipped out every season. They bring the growers good money, but for some reason their cultivation is not generally carried on in the county. Routt County has the call on strawberries in Colorado, although Glenwood Springs at one time aspired to fame as a strawberry center. The high altitudes around Steamboat Springs produce a berry which ripens in July and which sells at fancy prices on Denver and Eastern markets, as no other strawberries are in competition at that time. Growers net from $2.50 to $3.00 per crate for their berries, and make profits of as high as $700 per acre. The rows are planted four feet apart, with the plants from eighteen to twenty inches apart in the row. The only difficulty there is with the grass, wild timothy at times crowding out the strawberry plants.

The Dewberry District.

In the Plateau Valley and Debeque sections, there are some strawberries, although the luscious dewberry is the principal small fruit crop. Plateau Valley has become famous as a producer of the dewberry and the crop is generally sold before it is harvested, despite the fact that a twenty-mile wagon haul is required to get it to the railroad. The bulk of the dewberries are shipped to Denver, Colorado Springs and Pueblo, although experimental shipments to Eastern cities have come through in remarkably fine shape The vines are planted six feet apart and about 1,000 to the acre. They bear luxuriantly and bring good prices. J. P. Baldridge, known as the "Dewberry King" of the Plateau Valley mates his average profits at $500 per acre. The berries are packed in pint boxes, and a crate of twenty-four nets the grower from $2.25 to $2.50. In the upper valley they are not covered for winter, although that would be necessary in the lower end of Grand Valley. In the plateau, however, the heavy snows protect the vines. They are pruned heavily just before the picking season, at which time, all of the old wood is taken out. The vines spread rapidly and the main difficulty is in keeping them in the rows in which they were set out. The berries are easy to pick, but gloves are required as a protection from the thorns. The fruit attains tremendous size and is of a fine flavor. The dewberry industry is still in its infancy in Colorado and there are thousands of acres which could be planted to this variety of berry and show handsome profits to the man who undertakes the venture.

LOUIS MEYER.
Colorado.

To Study a Strawberry Disease.

A new disease has been causing the strawberry growers of New York state a great amount of trouble during the past few years, and an effort is being made by those growers in the vicinity of Dundee to have an expert plant pathologist from the state agricultural college spend a portion of his time in their strawberry fields and work out a method of controlling the disease.

MICHIGAN SMALL FRUITS

Western Michigan Specially Adapted to the Culture of Strawberries, Raspberries, Etc.

The crops grown and the industries followed in different localities are largely matters of natural selection and through trials and experiments it is generally determined what crops the soils and climatic conditions of each locality are best fitted to produce, account being taken of the transportation facilities and market conditions. In considering this subject, we should proceed by first making sure that there are good, sound reasons why the local farmers should turn their attention to small fruits. It happens that the reasons for this method are so apparent that it is really a matter of surprise that the subject has had so little attention in the past. Our location within a night's journey from the large markets, such as Chicago, Milwaukee, Detroit, Toledo and Cleveland, and within about an equal distance from the center of population in the United States, which is supposed to be at Bloomington, Ind., makes it possible for us to market our products upon the tables of the ultimate consumer by express service and without the actual need of refrigeration, although carload shipments under refrigeration is cheaper transportation than express and local shipments without it. Having the markets for the fresh fruit close at hand, and also that might be raised against the proposition of planting small fruit and berries upon a large scale. Immediately our "conservative friend" will inquire where we are going to get the pickers. In reply to this question I would say that there are two courses to pursue; first, wait until the labor is abundant and has been in our midst several years waiting for employment, and then set out our fruits; or secondly, set out our fruits and berries, let it be known that we are in need of labor, and get it just the same as we would proceed in any other line of business. Just at this point I desire to emphasize the statement that I have previously made on numerous occasions, that the greatest obstacle to the development of the locality is the statement current among the farmers which we frequently hear, "The farmer can't afford to hire." I wish that every one of my readers would ask every farmer who makes this statement how he excuses or justifies himself in devoting his attention to a business that will not pay wages. You should not have any fear about the labor proposition. When you have the work to be done and go about it in a business-like way to get the help, you can do it. A diversity of crops maturing at different seasons through the year will make it possible for labor to find almost continuous employment. While the local situation remains as it is now, farm labor is only wanted for two short seasons, and is naturally scarce and at a premium during these periods. To get back to the subject, I believe that I have demonstrated that all conditions are favorable for an extensive development of the business of growing small fruits and vegetables in western Michigan, and will now proceed to a brief consideration of the various crops that may profitably be grown.

A WESTERN MICHIGAN STRAWBERRY FIELD.

Strawberries.

The best varieties to grow are the Senator Dunlap, Warfield or other medium-sized deep red berries. The yields vary according to the care and attention given to the crop by the grower. I have a record of a field of four and and one-half acres grown at Covert, Mich., this last season, which yielded 1,200 cases or an average of about 266 cases per acre. Figuring on 75 cents per crate makes a return of $199.50 per acre, and this I do not understand to be an extraordinary yield. To illustrate the stability of our home market as compared with markets that are obliged to ship all of their crops, will say that at our factory we paid last year to our local growers 75 cents per sixteen-quart crate, and crate returned. At one time during the season following the heavy rains, when the berries softened rapidly, we were able to buy strawberries at other points at an average cost to us, landed at Fremont, crate included and express charges paid, of 66 cents. Based upon today's market of the canned product, we expect to pay 75 cents per sixteen-quart crate for local strawberries the coming season.

Red Raspberries.

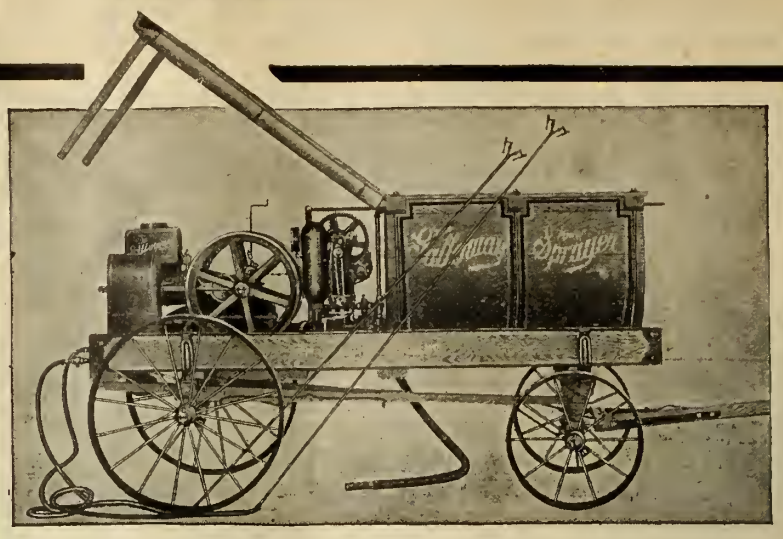
The most popular variety is the

having, what is of equal importance, a canning factory in our midst, which serves as a balance wheel for our markets, and gives us at all times a dependable market for our products and relieves us of the risks of transportation and bad accounts, the location proves to be ideal for the purpose. Being convinced of the advantages of location, we should next consider the suitability of the soil and climate. This is a point that requires no explanation or argument. The fact that other localities, such as Grand Rapids, Bangor, Hartford, Watervliet, etc., are successfully growing these crops and, knowing that their location for such crops as peaches is less suitable than ours, it would naturally seem that our location is at least equally if not better suited to the culture of small fruits and berries.

No Decrease in Prices.

Possibly before going farther we should consider the future outlook as regards the demand and probable prices for these commodities. Prophecy is, of course, a matter of guess, and the only safe basis of judgment is from the history of the markets on these commodities for the past few years. It is a matter of common knowledge that fruits and berries have commanded high prices for several years past, and the steadily increasing higher standard of living and refrigerator transportation which permits wide distribution and tends to reduce the danger of low prices which is apt to occur when crops are large, leaves us no chance to imagine that there can be any material decrease in prices in the near future.

Thus far, our consideration has shown nothing but favorable indications, and fair consideration requires that we look about for any objections



Galloway Power Sprayer

WE HAVE been setting the pace for engine manufacturers. We propose now to start a lively clip for power sprayer manufacturers; therefore it would not be fair to give you the price here, because we want you to consider the proposition fully, and you might wonder how a power sprayer of absolute first quality, guaranteed in every way that an experienced orchardist could ask, could be sold at the price we are making on our new Galloway Power Sprayer.

Construction—

Best material, no equal for power, durability and efficiency. Engine and pump bolted to platform, pump is driven with sprocket and chain. No gears, connecting rods, etc., to waste time, take up room and cause trouble. You can take the engine off and use it for any other work.

Simplest engine built. The famous Galloway, time tried and tested.

We made our first sprayers more than a year ago. Have given them the fullest possible trial and we present them now to the fruit growers of America, knowing that we have the machine that will deliver the goods.

There are several new automatic features; there is an abundance of power; there is utter simplicity; there is durability; there is quality all the way through.

Don't simply send us your name. Write us fully. We are mighty likely to quote you for the entire sprayer what you are accustomed to think of paying for the engine alone.

Remember, this sprayer carries all the Galloway guarantee of quality. It's sold on the Satisfaction or No Pay Plan. Write us fully today. It will mean a big saving to you.

THE WM. GALLOWAY CO.

1030 Galloway Station WATERLOO, IOWA

What Gardeners Say

About the Market Growers Journal. Hundreds of other letters like them from pleased readers.

"I can't afford to miss a copy. I got more for that dollar I sent you last year than any I ever invested." —Frank Rinehart, Covington, Va.

"I have only taken your paper for one year, but would not be without it now."—M. S. Burt & Son, Greenport, L. I.

"I need every dollar I make, but a dollar for the M. G. J. brings me big interest."—H. D. Keichel, Rockdale, Pa.

"Your Journal is as good as another hand in the garden."—J. R. Judd, Lawrenceburg, Tenn.

$25,000 A Year From Twelve Acres

That's what this man, M. L. Ruetenik, of Ohio, makes his market garden yield —with a net profit of $1,000 per acre.

Read the story of his success—his start without experience and with only $100—methods practiced—big money crops—plan of profit-sharing that has been studied by Steel Trust—secrets of success. Read the whole absorbing story in this newest book for vegetable growers,

The Market Garden Guide

Different from any garden book you have read—not cut and dried theories, but actual facts about most successful gardeners in America. Story of Ruetenik farm only one feature. Secrets of success of sixteen other prominent gardeners revealed. Practices of most famous gardenig sections described—how Boston gardeners make land worth $2,000 to $4,000 an acre show a profit from vegetables—how a Pennsylvania man grows $1,000 worth of celery an acre—how New Jersey growers make asparagus pay them $400 to $600 an acre—how mushrooms that sell for 50 cents a pound are grown—concise directions for growing and marketing all important vegetable crops—timely hints for every month.

Read this book and compare your methods with the methods of men who have more than "made good." Profit by what they have learned. Make sure you are doing everything to get best possible results. Get this newest book, then, about market gardeners and truck farmers. Just printed. First time offered. Get it free by sending $1.00 for the only paper printed for market gardeners and truck farmers.

THE WEEKLY

Market Growers Journal

Every one who grows vegetables needs this paper. No other can take its place. Every issue written by practical gardeners and full of solid, helpful information. A dollar brings you book and paper a year. Can you afford to miss this chance to get this wealth of information?

We guarantee satisfaction. Any time you think you are not getting your money's worth, return the book and we return your dollar.

Fill in coupon and mail today with dollar bill, check or money order. Write your own order if you prefer. Address

Market Growers Journal

601 Walker Bldg. LOUISVILLE, KENTUCKY

USE THIS COUPON

MARKET GROWERS JOURNAL,
601 Walker Bldg., Louisville, Ky.

Enclosed find $1.00 for which send me "The Market Garden Guide" and your paper one year. It is understood that any time I think I'm not getting my money's worth, I'm to return the book and you'll return my dollar.

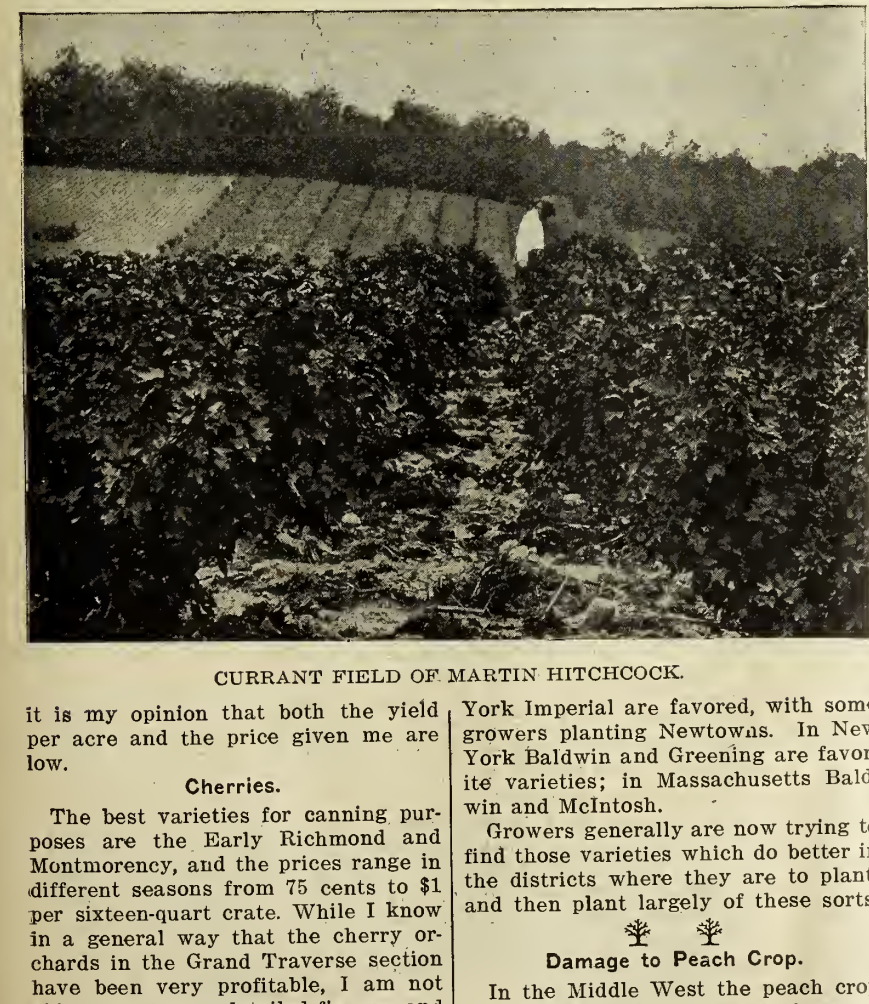
Name .....R. F. D.....

Town..... State.....

Cuthbert, and while we understand that this does not yield quite as heavily as some other varieties, the quality is so much superior and the price accordingly higher that we recommend this variety. Prices for the coming year will probably be about $1.25 per sixteen-quart crate.

Black Raspberries.

There are several good varieties, such as the Gregg, Ohio and Kansas. I am advised that in other localities the average yield is 125 sixteen-quart cases per acre. The first crop usually runs sixty to seventy-five crates per acre, and when the bush has attained



RED RASPBERRY FIELD OF WILLIAM BARNES, EMMET COUNTY, MICH.

full size, about 200 crates per acre, and my understanding is that 125 crates is the average of all bearing acreage, both young and old. Price for the coming year will be about $1 per sixteen-quart crate.

Gooseberries.

This crop is grown here in a large way, and I do not feel that it is necessary to devote any time, at present, to this item.

Blackberries.

I have been unable to secure satisfactory data on this subject and the information thus far obtained shows a range of one to two hundred sixteen-quart cases per acre and an average price of about 80 cents per crate, and it is my opinion that both the yield per acre and the price given me are low.

Cherries.

The best varieties for canning purposes are the Early Richmond and Montmorency, and the prices range in different seasons from 75 cents to $1 per sixteen-quart crate. While I know in a general way that the cherry orchards in the Grand Traverse section have been very profitable, I am not able to quote any detailed figures, and have not given this subject very much attention.

Plums.

This crop is grown very extensively and very profitably, I understand, in the neighborhood of Hart and Shelby, and I know of no reason why these could not be grown here with equal success, now that spraying methods are well understood and these same remarks would appiy with equal force to the different varieties of pears.

Michigan. FRANK GERBER.

Varieties of Apples to Plant.

Never before has The Fruit-Grower had so many letters from persons intending to plant apple trees asking varieties to be planted. It seems that those who heretofore have been told to plant Ben Davis as a commercial sort are now convinced that there is something better, and they are trying to find those varieties which do best in their respective localities.

This discrimination in taste as to varieties is leading various fruit districts to specialize in certain sorts. For instance, Hood River, Ore., is a great district for Newtown Pippin and Spitzenberg; the Yakima Valley and the Wenatchee districts are making a great success of growing Winesaps, both the old Winesap and Stayman; Colorado grows wonderfully fine Jonathans and Winesaps, and some growers are careful enough in their methods to make big money out of Grimes Golden.

Virginia growers in the mountain districts are planting Newtown Pippin —Albemarle Pippin, they call the variety there—and Winesaps; in the Shenandoah Valley Winesaps and

CURRANT FIELD OF MARTIN HITCHCOCK.

York Imperial are favored, with some growers planting Newtowns. In New York Baldwin and Greening are favorite varieties; in Massachusetts Baldwin and McIntosh.

Growers generally are now trying to find those varieties which do better in the districts where they are to plant, and then plant largely of these sorts.

Damage to Peach Crop.

In the Middle West the peach crop has been seriously damaged, if not entirely destroyed. This applies to the fruit districts of Kansas, Missouri, Illinois and Michigan. It is likely that some of the Arkansas districts have also suffered, but from other sections in that state come reports that the crop has been unhurt.

In the peach belt of New York there has been serious injury, but some of the hardier varieties have enough live buds left to make a fair crop, if there is no further injury. In Georgia and the peach districts of the South, it is said, there has been no damage up to this date.

The fruit districts of Colorado report no injury whatever. In fact, the winter there has been an ideal one. Reports from Morrisania Ranch, near Grand Valley, Colo., at an altitude of 5,600 feet, state that 6 below zero is the coldest weather of the winter, and everything is in perfect condition for a full crop, if there should be no injury at blooming time.

What's the Matter With Rome Beauty?

A prominent apple handler recently told us he was having considerable difficulty in selling Rome Beauty apples, and asked what is the opinion of growers as to the future of this sort. It seems that Rome Beauty had a great boom last winter, but evidently failed to make good, for the markets which took considerable quantities last season are not at all anxious to buy Rome Beauties now.

In defense of Rome Beauty as a market apple it may be said that it is wonderfully fine for baking purposes. This was demonstrated at the recent National Apple Show at Spokane, where Rome Beauty won first place as a baking sort, on flavor and appearance, and also because it bakes quickly.

Another good thing that may be said of the variety is that it blooms late, and there is little danger of killing by late frosts in spring. Blossoms are strongly self-fertile. Trees should be kept open to permit fruit to color well, for a pale Rome Beauty is not an apple that the market wants.

It will be well for those who contemplate planting this variety to consider these points. Certainly it should not be planted except in districts where the apples take on high color.

If your neighbor reads The Fruit-Grower, your fruit crop is more secure.

No prudent housewife should trust to a printed description in buying a range, for a very glowing description can be given to a very inferior range. You are not asked to buy a *Majestic Range* in this way. But you are invited to go to any dealer who handles the *Great Majestic* and compare it point for point with any other range on earth. Then you can decide and buy intelligently. There are Majestic Range dealers in nearly every county in 40 states—so you will have no trouble in finding one—and it will pay you to drive an extra ten miles, if need be, to see and carefully examine the *Great Majestic* before investing your money in a range of any kind. You don't buy a range every day, or indeed, every year, and when you do, you want the best your money can procure—one that will last a life time—that's the

A Perfect Baker— A Fuel Saver

Great Majestic Malleable and Charcoal Iron Range

Outwears Three Ordinary Ranges

The Majestic is the ONLY range made entirely of malleable iron and charcoal iron. Charcoal iron won't rust like steel—malleable iron can't break. The *Majestic* is put together with *rivets*—joints and seams absolutely air tight like an engine boiler. Oven lined with guaranteed *pure asbestos board*, covered with an iron grate—*you can see it*. No heat escapes or cold air gets in, insuring a *dependable* baking heat with *half* the fuel required in ordinary ranges.

All Copper Movable Reservoir—Other Exclusive Features

Reservoir is in direct contact with fire and heats like a tea kettle through a copper pocket stamped from one piece of copper—a patented feature found only in the *Majestic*.

Has an *Oven Thermometer*—accurate, not sometimes, but *all* the time. All doors drop down and form rigid shelves. *Open end ash pan—ventilated ash pit—ash cup* that catches ashes and prevents them from falling on floor. It's the best range at *any* price and should be in *your* kitchen. Write for our booklet, *"Range Comparison"*.

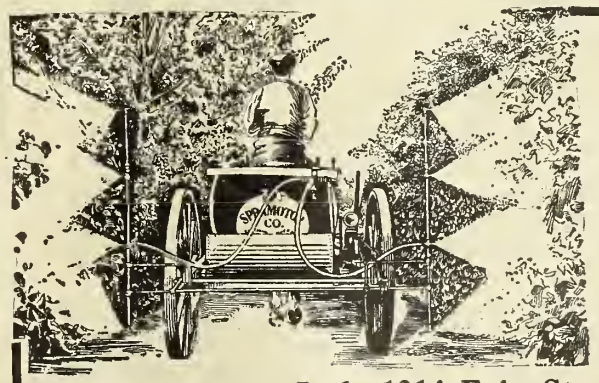
Majestic Manufacturing Co.,
Dept. 92 St. Louis, Mo.

Berry Boxes Leslie, Oblong Quarts or Hallock Quarts. 16 and 24 Quart Shipping Crates

All Kinds of **BASKETS**

TREE PROTECTORS A SPECIALTY

St. Louis Basket & Box Co., St. Louis, Mo.



Successful SPRAYING

With a Horse-Power **SPRAMOTOR** you can spray to some purpose. High pressure insures best results. Over 500 in use. For 1 or 2 horses. Regulation is automatic—no safety valve. Can be hand operated. Nozzle protector. 12 gal. air tank. Nozzle control perfect for height, width and direction. Equally efficient in field, vineyard and orchard. Guaranteed against defects for a year. Write for free treatise on crop diseases.

AGENTS WANTED

Spramotor Co., Ltd., 1314 Erie St., Buffalo, N. Y.

Labor-Saving Methods—
In Your "Fruit Factory" and in Our Pump Factory

Every up-to-date business man nowadays, whether fruit grower, farmer, merchant or manufacturer, is studying how to make **every move count**—how to make every dollar spent show a good return; how to save time; how to get more work done. It hits **you** in getting your spraying started and finished at just the right time; in doing it as **thoroughly** and as **easily** as possible; and without unnecessary breakdowns or other wastes of time and energy. **We** study it in every department of the big plant where we make Deming Spray Pumps. In **your** "factory" the problem is to produce more of the fruit that brings in the big dollars. Spraying will enable you to do it; Deming Spray Pumps will help you save labor and get more work done. We make them with **you** in mind; it's to our interest, as well as yours, for you to get your spraying done on time, to get it done thoroughly, and without any unnecessary fuss or bother. Back of

Deming Spray Pumps

there are nearly twenty years of planning, experimenting and designing. We were among the earliest spray pump builders of the country, and Deming Spray Pumps have kept the leadership simply because we have lived close to fruit growers and their needs—found what they require, and supplied really **practical** machines—with the **necessary** parts left **in** and the "frills" kept **out.**

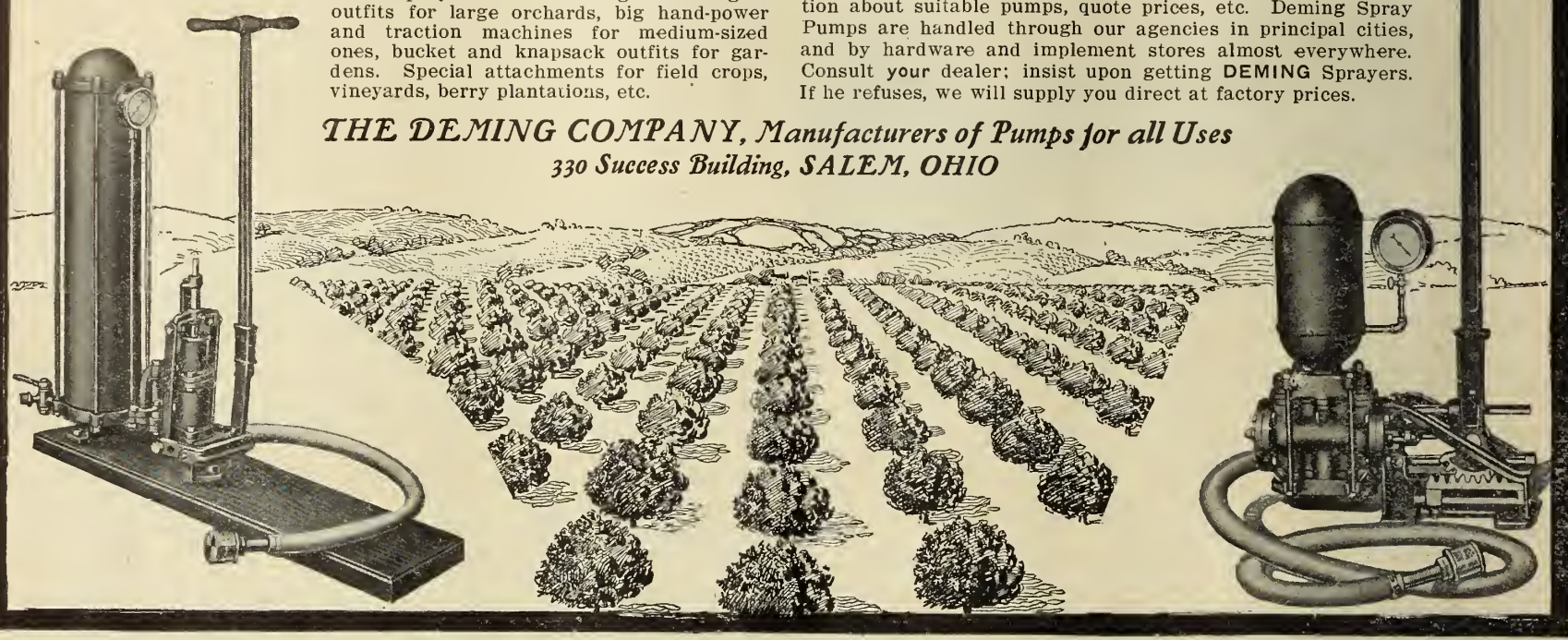
This Year We Offer More Than 20 Different Sprayers

Whatever the size of your orchard, or whatever you grow that needs spraying, we can fit you out uncommonly well. We make nearly two dozen sprayers for all uses—gasoline engine outfits for large orchards, big hand-power and traction machines for medium-sized ones, bucket and knapsack outfits for gardens. Special attachments for field crops, vineyards, berry plantations, etc.

Write for Catalogue and Name of Dealer Near You

Complete particulars are given in our new Catalogue, and if you'll tell us about your orchard, we'll give special information about suitable pumps, quote prices, etc. Deming Spray Pumps are handled through our agencies in principal cities, and by hardware and implement stores almost everywhere. Consult **your** dealer; insist upon getting **DEMING** Sprayers. If he refuses, we will supply you direct at factory prices.

THE DEMING COMPANY, Manufacturers of Pumps for all Uses
330 Success Building, SALEM, OHIO



AUTOMOBILE EXHIBITION

The Kansas City Show One of the Largest and Most Successful Held in the U. S.

Almost four hundred automobiles and auto trucks, representing about eighty different makes, were on display at the automobile show in Kansas City during the week of February 12 to 17. The show was conducted under the auspices of the Kansas City Motor Car Dealers Association, and was not only the greatest show of the sort ever witnessed in Kansas City, but one of the three greatest automobile shows ever held in the United States.

Kansas City has become third in importance as an automobile distributing center, being outclassed only by New York and Chicago. On this account the dealers who planned the show determined at the outset that it would be an epoch-maker in motor car history in Kansas City. That their efforts were successful remains undisputed. The displays were made in the Coliseum, and the space in that mammoth structure was crowded to the limit, and then packed throughout the entire week by the throngs of sight seers.

The motor car industry has within scarcely more than a decade developed from an industry of little promise into one which takes rank as one of the five greatest manufacturing industries of the country. It has made this phenomenal growth because it has demonstrated itself to be an industry which is contributing very largely to our comfort, convenience and welfare. The automobile and the motor truck have solved one of the greatest problems in the way of transportation the farmer has been compelled to face. And it has been well demonstrated that motor trucks are of invaluable service on the farms of the country.

At first motor cars were considered as toys for only the wealthy, but as they were improved they were proven to eliminate distance and do effective work in solving the transportation problem, so that today motor car makers are well aware of the fact that the farmers of the United States are the ones who can use automobiles and auto trucks to the best advantage. On this account many of the motor car makers are devoting particular attention to the needs of the farm. They are making cars which can haul a heavy load over rough roads, or can pull plows in the field. Other cars are built for pleasure riding on country roads, and to serve in transporting the families to town.

Among the visitors at the motor car show farmers were very much in evidence, and all of the car makers or dealers who sought the trade of farmers sold a large per cent of the orders taken at the Kansas City show to rural customers. Mr. Taylor of the Reo Company told The Fruit-Grower man that in one day he has sold fourteen cars, an even dozen of which went to farmers in Missouri and Kansas, the other two cars going to purchasers in Kansas City.

Such a show as this was of invaluable service to prospective motor car buyers, as so many different models and makes were on display, and each make was accompanied by an experienced demonstrator who told about the features of particular merit of his car. The frame work and machinery of nearly all makes of cars were on display, and each model had portions of the cylinders cut away so that all of the interior was open to view, and a careful inspection could be made of exactly how each machine worked. This was really one of the greatest educational features of the show, as it got right down to the fundamental principles, and through the assistance of the courteous demonstrators, the minutest detail of the working parts of each car was made perfectly understandable. The varnish and upholstering on an automobile does not constitute the valuable part any more than the grooming on a horse or cow constitutes the merit such animals may possess. But when the body of the car is removed, and nothing but the working parts left, one can inspect and compare the heart and vitals, the throbbing life of the machine.

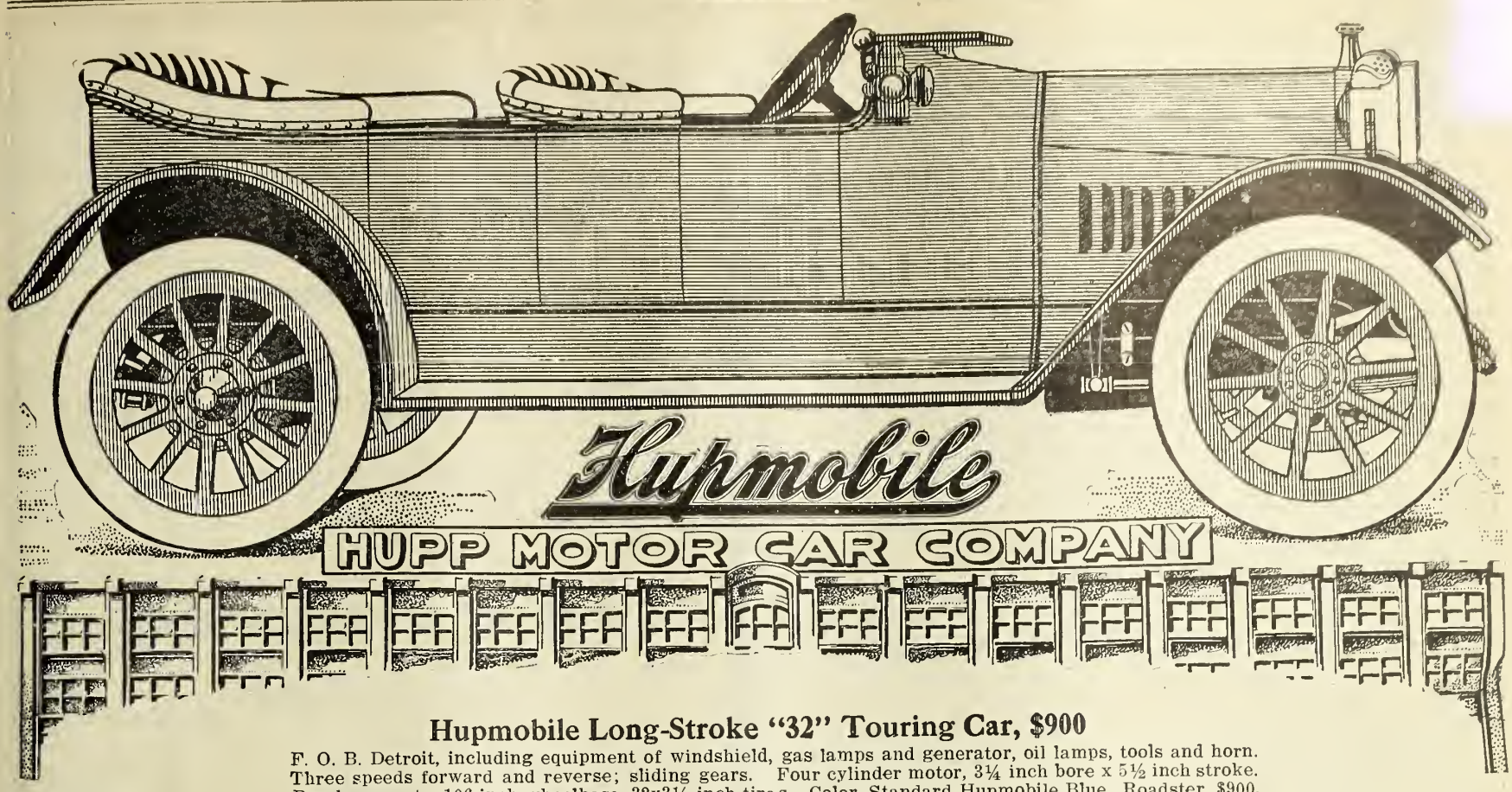
The Fruit-Grower man was interested in watching the cars which were most closely inspected by farmers, and it was very noticeable that those cars which had not been regularly advertised in the farm press were least attractive, while those manufacturers who had advertised consistently in the agricultural papers were given the most attention and were the ones who sold cars for use on the farms. There were many of these, but more in the way of touring cars than motor trucks. Some of the motor trucks, such as the Mack and Avery were much admired by farmers, and a few of these were sold, but on the heavier makes of trucks farmers gave but little attention, as they are not intended and cannot serve as effectively in farm work as upon the paved streets of the cities.

But there was one car on display that possesses advantages as a farm car much above the ordinary, and that is the general utility car, a car which can be used for pleasure purposes and be easily converted into a car for hauling small loads of produce or freight. One of such cars as this, the Day Utility Car, was on display, and was continually surrounded by a group of interested people. This car marks a new era in motor car building, as it is really two cars in one—one for pleasure purposes and one for work. This Day Utility Car is a roomy five-passenger car, possessing graceful lines as a touring car, yet the rear seat and doors can be very quickly removed, sideboards put in position, and become a light truck or delivery wagon. This is the kind of car that farmers and fruit growers have been wanting, as it will solve many of the perplexing problems of making quick trips to town with light loads.

With such a car as this the farmer who lives ten or twenty miles from town is within as easy touch with the pleasures of the city as his neighbor who drives a team and lives only five miles out. In fact, with the motor car he has the advantage, as the car can not only haul loads of reasonable size, but it can conveniently carry five passengers. Then, after a day of hard work as a wagon, the sideboards can be removed, the rear seat slipped into position, and the car is ready for an evening's spin with the family, and is not too tired to develop its full power at a moment's notice. This car was one of the features of the show, and will undoubtedly become better known at future shows, for as yet it has been on the market but a couple of years.

The man or woman who is considering the purchase of an automobile found a world of information at the Kansas City show. Anyone who doubts that automobiles are of vast importance to every class of industry, and for every conceivable purpose where transportation is required, would have every shadow of doubt dispelled by having spent an afternoon or evening at the motor car show in Kansas City. He could have seen cars that were designed for every purpose and driven by electric power or internal combustion engines. He could have seen cars ranging in price from $350 to $5,000, from little simple runabouts to a most luxuriant seven-passenger limousine with room for a lunch table between the seats, or motor trucks which could draw a gang of plows, carry a load of two to seven tons and equipped with a self-dumping body or which could furnish power for driving a threshing machine or electric light dynamo.

Ask your neighbors to subscribe for The Fruit-Grower. They'll thank you.



Hupmobile Long-Stroke "32" Touring Car, $900

F. O. B. Detroit, including equipment of windshield, gas lamps and generator, oil lamps, tools and horn. Three speeds forward and reverse; sliding gears. Four cylinder motor, 3¼ inch bore x 5½ inch stroke. Bosch magneto, 106 inch wheelbase. 32x3½ inch tires. Color, Standard Hupmobile Blue. Roadster, $900.

'Long-Stroke' means Long-Stroke in the new Hupmobile

We have figured always that it was the wisest kind of enlightened selfishness to give more than the public expected.

Thus, only one motor in America has a longer stroke than the engine in the new Hupmobile "32."

And the car which shares this distinction with the Hupmobile sells for several times the Hupmobile price of $900.

The relation of stroke to bore in the new Hupmobile is the mean average of the best and latest European practice.

But we did not stop with this positive assurance of greater pulling power.

The cylinders are cast en bloc and the crankshaft, of special drop forged high carbon steel, equipped with three especially liberal bearings, instead of two.

Note these evidences of extra-generous construction, one at a time, please, and compare them with other cars at the Hupmobile price.

Observe that the valves, for instance, are not only all at one side—an admirable advantage—but completely encased, yet instantly accessible and oil-tight and dust-proof.

Again, you find another evidence of careful workmanship in the manner in which the inlet and exhaust manifolds are cast integrally with the cylinder block.

You will also note the advance in construction that we have made by casting together, from the highest grade of aluminum alloy, the upper part of the crank case and the entire transmission case.

This construction is completed by making the lower part of the crank case from pressed steel.

You will see in this engine and transmission unit a triumph of mechanical adaptation, which makes for increased efficiency and space economy.

The full-floating rear axle of the Long-Stroke "32" is, in itself, a work of high degree, which places the Hupmobile in an exclusive class.

The rear axle connection is by means of a single universal joint enclosed in a taper tubular housing which is jointed to the transmission case.

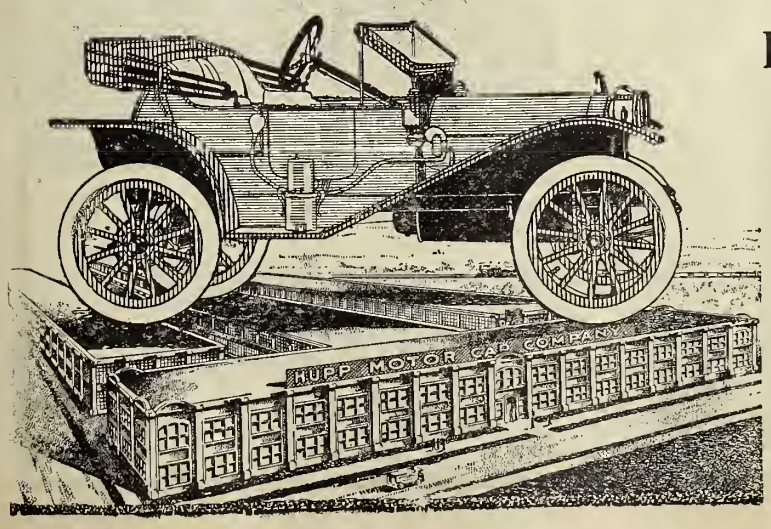
By this means we avoid the use of truss rods, yet have produced the strongest and stiffest axle possible. Each rear wheel runs on two roller bearings mounted on the axle tube, while the axle shafts are bolted to the hub flanges.

You can ascribe all these constructive advantages to the fact that the Hupmobile organization has always been held practically intact. In every essential it is the same as it was when the first Hupmobile was built.

The chief engineer, E. A. Nelson, is the same man who designed the original Hupmobile runabout—whose priority in its own class has never been seriously disputed.

The department heads who have been associated with Mr. Nelson and the skillful workmen who have executed his designs, have remained with us in our progressive development.

We should be glad to send to your address 4½ x 8½ photogravures and full description of this handsome car.



Hupp Motor Car Co. 1210 Jefferson Ave. **Detroit, Mich.**

Standard 20 h. p. Runabout $750

F. O. B. Detroit, with same power plant that took the world touring car around the world—4 cylinders, 20 H. P., sliding gears, Bosch magneto. Equipped with top, wind shield, gas lamps and generator, oil lamps, tools and horn. Roadster with rear deck and steel box for tools and accessories, $850.

A recent exhaustive report of the efficiency of the Hupmobile runabout in nearly a year of army service is contained in a booklet entitled "A Test of Service," which we will gladly send on request.

The new Hupmobile plant, now nearing completion and illustrated at the left, will have a capacity of 15,000 to 20,000 cars a year; and the Runabout —always a car of unprecedented popularity—will continue to occupy the same large part in our manufacturing plans that it does at present.

STRAWBERRY CULTURE

Scientific Methods of Growing Strawberries as Practiced By an Eastern Subscriber

The market wants your early berries, not only in car lots, but trainload lots, and will pay you a good price to get them if they possess the desired quality; but will not accept inferior fruit in such quantities at a price which will justify you in growing it. The difference between growing, say, one thousand bushels of strictly fancy berries and the common berries is not so great as you may imagine. The express charges, however, are just the same on both lots.

There must be a change in the method of growing berries as well as a better understanding of the laws of nature in plant life which govern the development of fruit. Many of us are setting and cultivating too many acres for the amount of fruit we are getting. We must concentrate our efforts on fewer acres; fertilize better; cultivate better and propagate our plants in such a manner that they will respond to better tillage by devoting their energies to the development of fruit instead of runners.

The assumption that one plant is just as good as another for the purpose of propagation is no more true than that one animal of a certain breed is just as good as any other. It does make a difference as to how they are bred to develop good qualities. Strawberry plants propagate themselves sexually, or by seeds, and asexually, or by runners. When grown from seeds they receive two parental impressions just the same as an animal, and may take a greater impression from one parent than the other. Because of this we can never be sure of the kind of fruit or foliage we are going to get. Not one seedling in ten thousand will equal our standard varieties, because the latter have been culled from hundreds of thousands of seedlings, or found by chance in some out-of-the-way place, where the seed happened to fall. All fruits—that is the flesh—grows as a substance for seeds to develop in, and whenever the seeds are wanting there will be no fruit, or it will be badly deformed.

Some one has prophesied that we would soon have seedless berries because the banana and some oranges and other fruits grow without seeds. These have been propagated asexually, or by buds, so long that they have lost their habit of seed formation or are only freaks, but they serve to prove the argument that I have long advanced that fruitfulness could be largely increased or decreased by good or bad propagation. No one has ever yet seen a large, luscious strawberry unless the potency of pollen was strong and healthful as well as the pistil and receiving fluid of stigma.

Let the Plants Bear.

The passion of the plants to breed by seeds (which are only the plant's eggs) is as strong as that of any animal and if not held under restriction by pruning they breed themselves into impotency in an incredibly short time, and this is especially true of strawberries. It will not do to remove blossoms year after year and never allow plants to fruit, because it is well understood that whether in plant life or animal life a physical power never exercised will soon be lost. They must be allowed to develop berries to strengthen their ability in this direction, but must no more be allowed to fruit to excess than you would allow a valuable stock animal to breed excessively. I speak now of the plant for purposes of propagation.

When a plant becomes exhausted it then multiplies its species by producing runners. Sometimes such plants produce bloom in great profusion, but at harvest the berries are deformed, small and have many blanks. We cannot cut an animal in pieces and grow several animals from him, because he contains only one indivisable life germ, while the tree and plant is not only an individual as a whole, but the protoplasm, as that material in which the principle of life resides, is found in all the nodes and internodes of the branches and often the roots of the tree. And it is for this reason we are able to propagate by runners, cuttings, grafts, etc.

Plants propagated in this way are children of one parent, and receiving but one impress they bear fruit, as a rule very closely resembling the plant from which they were taken, and yet when placed under changed conditions the greatest variations often take place. Variation is one of the great laws of nature. No two blades of grass or anything else ever grew which were exactly alike. Sometimes these bud variations are so great as to constitute entirely new varieties. In floriculture the number of new varieties produced in this way is very large and cases in fruit go well up into the hundreds and will become more numerous when fruit growers understand and begin to look out for them.

Propagation from Crowded Beds.

We often find a branch of an apple tree bearing fruit differing widely from other branches, and this may be increased by propagating from that branch. So in this way we may greatly improve varieties by continuously propagating from perfect plants and those which vary in the right direction. Every fruit grower should be constantly on the lookout for such plants, and when found a part of the bloom should be removed to prevent exhaustion, and the fruiting yield constantly renewed from these perfect and vigorous plants. The present custom of taking strawberry plants from alongside of the wide matted row is very bad. It should never be done. These plants are often the last to form in the fall and they have immature roots and their fruit buds are not fully developed. The roots being immature and standing alone without protection from the foliage of other plants the frost weakens the roots so that they perish upon being transplanted. Strawberries lose their habit of fruiting by being propagated from densely crowded beds. Experiment shows that strong fruit buds will not form where the sun does not shine on the crown. We notice that the foliage of an isolated plant droops in all directions, fully exposing its crown to the light. A plant cannot assimilate its food except its leaves are exposed to the sunlight, and as the substance which forms the fruit must all first go to the leaves to be digested, this cannot be accomplished in even moderate shade. Plants also lose their fruit bud forming habit by being propagated on land especially rich in nitrogen, and on low land with quicksand subsoil, which keeps the water near the surface. Such plants become viney, and while they will form millions of plants to the acre, yet when transplanted to the fruiting field they carry this habit with them, and instead of berries you get only runners.

For these reasons the wide matted row must be abandoned by all who expect to grow strictly fancy fruit. Each plant must have its own room, sunlight and root pasturage. In the wide matted row the plants are struggling for existence and constantly warring on each other. The surplus plants not only "pump" the water out of the ground, but a crust forms and excludes the air from the roots. But as the capillary passages are perfect, in this packed soil, the water is drawn to the surface, carried off by the sun and wind and the ground dried out with great rapidity. The usual spring drouth, prevailing at about the time berries begin to ripen, often greatly reduces the size of the berries.

Growing In Hills.

The ideal way of growing berries is strictly in hills or stools. In this way all runners are kept cut off as fast as they appear. If the plant is in full fruit-forming vigor when a runner is

Dow Spray Materials

Dow Lime Sulphur Solution

CONCENTRATED

Dow Arsenate of Lead

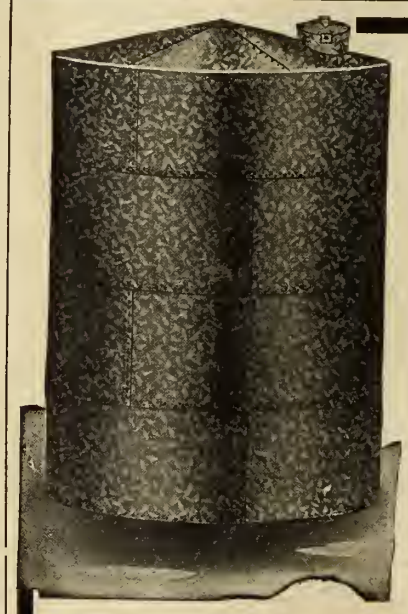
PASTE

WRITE US TODAY FOR

Guarantees—Recommends—Prices

The Dow Chemical Co.

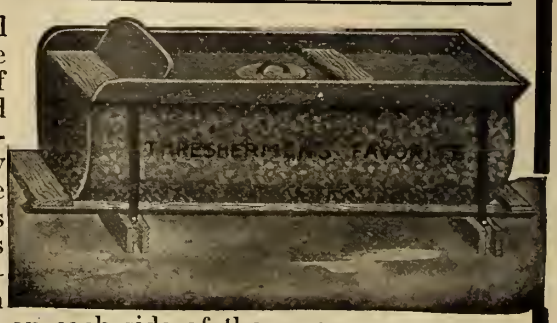
MIDLAND, MICHIGAN



Store Oil in Columbian TANKS

Our Oil Storage Tanks are made throughout of the highest quality of galvanized steel. All seams are doubled and soldered tight. All necessary flange connections and manholes furnished. Write for our prices, stating the size or capacity.

Oil Wagon Tanks



Columbian Oil Wagon Tanks are constructed of heavy galvanized steel and with double seams. Heavily soldered. Have flange connections to which two lines of hose can be attached for filling a row of smudge pots on each side of the wagon.

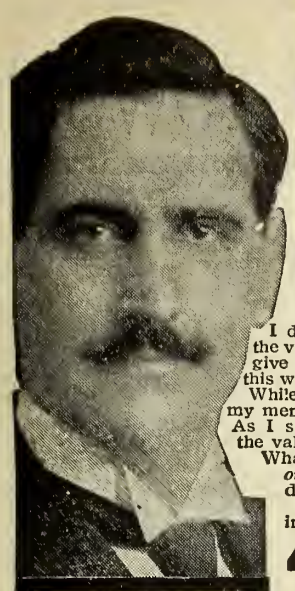
Write for our catalogue, "Tanks for the World." Our prices will interest you.

"TANKS FOR THE WORLD"

Columbian Steel Tank Co.

1600 West Twelfth Street

KANSAS CITY U. S. A.



LISTEN!

"HOW CAN I MAKE MORE MONEY IN 1912"

That's Just What Confronts You Now. The Question Is—How Can It Be Done? An Intelligent Answer to This Question Is Worth Real Money. I Will Answer That Question and Won't Charge You a Cent Either

I don't know any better way to give you the valuable answer to this question than to give it just as it came to me. It happened this way—

While I was out on my farm one day, one of my men was hauling manure on an alfalfa field. As I stood watching him I got to figuring out the value of manure—

What that strip of land would produce *without* manure and what the land would produce *with* manure.

The figures so startled me that they inspired me to write a new book and christen it "A Streak of Gold." Because when I came to figure it out, I found that the extra crop I would get where the manure was spread was a veritable streak of gold, which I could not possibly get at all without the manure.

Now I could not begin to put before you in this advertisement all the facts I have to give you on this question of how to make more money on your farm in 1912. All I want to say is, just drop a postal and I will send you this wonderful book

"A STREAK OF GOLD"

wherein I prove the big money there is in manure—wherein I prove the actual cash value of manure—wherein I show on highest authority, how to best care for manure—and wherein I give you the tried and proven way to cash in on this great value.

In addition to my own experience, this book contains information carefully gathered from all sources and presented in clear, simple form, easily understood.

If you read this book and follow its instructions, you are bound to make more money in 1912. And here's a little proposition I will make you just to back up my confidence in this book. If after you get your copy you don't find that the information is worth real money to you, providing you are a farmer, and have manure to haul, providing you should apply its teachings, I do hereby agree to redeem the book at your request any time, at $1.00 in cash.

You cannot buy a hook with equally valuable information at any price today from any publisher that I know of. So much for the book.

10 OR MORE MEN WANTED

I want 10 or more men in every township to write me quick for a very special proposition that will save them big money. Are you one? Write me a postal at once. Do it NOW.

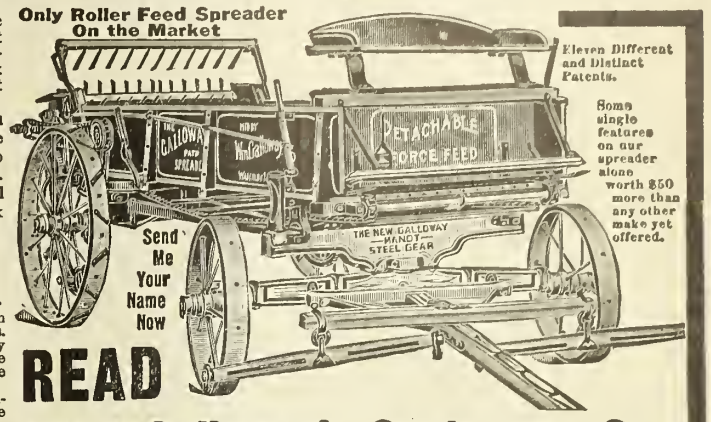
Now, I have a proposition to make you, Mr Farmer, that is perhaps entirely different from anything ever offered on manure spreaders.

I could not make it if I did not know exactly what I was talking about, and just how the proposition would work out. You see I have made this proposition before, and I know.

Here it is—I make six different sizes of spreaders in my factory here at Waterloo. They are all new in design—modern in construction—original and different and better in every feature. They are made as good as high class materials, high class labor, and high class machinery can make them. And these are the only three things that *make* **QUALITY.** There is nothing more than these that can add to quality.

After I get the quality I make the price, as you know, by selling a tremendous quantity.

Only Roller Feed Spreader On the Market



Eleven Different and Distinct Patents.

Some single features on our spreader alone worth $50 more than any other make yet offered.

Send Me Your Name Now

READ

What Galloway's Customers Say

A. E. LYMAN, Chardon, Ohio:—The Galloway Manure Spreader is all right—it works fine and is away ahead of the old way. I spread some manure on a piece of meadow last winter and the hay was as heavy again as on the other part.

HENRY KUHLMANN, SR., Chester, Neb.:—I cannot speak highly enough about the Galloway Spreader. It is the best friend I have on the farm and the easiest thing to make money with, as most any farmer can afford to have one at such a reasonable price. Everybody that sees it agrees that it is the only profitable spreader made.

PAGE WHITAKER, Calhoun, Ill.:—The spreader we bought of you last winter is giving satisfaction. Our corn where we put seven loads (about 1,500 pounds to load) of manure to the acre made (as near as we could estimate) fifteen bushels more per acre than exactly the same land without manure.

PAUL MOUSER, Harpster, O.:—I have one of your spreaders and think it the whole thing in that line and I am talking it up right. It will pay for itself this year on twelve acres; six of wheat and six of corn. I've had mine a year now and it never gave me the least trouble. If anyone wants to see the Galloway at work, or rather at play, mine is on exhibition any or all the time.

12 Months Use FREE and Interest on Your Money If This Test Fails

Now here's what I am willing to do. You let me send you one of these spreaders to try on your place with any kind of manure, and under any condition. Try it 30, 60, or 90 days if you choose. Then decide whether or not it is the best spreader for you. Sold on five different liberal selling plans, after you decide whether you want it. Remember your credit is good with me. Remember it is good financing to buy a manure spreader on time if you have to.

Now Listen! The question for you is, how can you make more money! If, at the end of 12 months the spreader I send you has not been a paying investment for you, providing you have as much as 100 loads of manure to haul out, I will, and hereby do agree, to take back the spreader—pay the freight both ways—give you back your money—and pay you interest at 6 per cent from the time you sent me the price of the spreader. Can you beat it? And could I make the offer if I did not have something better than the other fellows' "best!" Just drop me a postal now and say: "Send me your proposition and new book, **"A Streak of Gold;"** also your spreader catalog, and all other particulars about this unusual offer that nobody else has ever made." And I believe after you get them you will agree that I have answered the question, how to make more money on your farm in 1912. Just write me right now.

Wm. Galloway, President, THE WILLIAM GALLOWAY COMPANY, 1039A G Galloway Station, Waterloo, Iowa

cut a new fruit bud and crown will form; the roots will increase and force their way farther down and spread out in search of food until the plants attain a wonderful size. We have often had single plants grown in this way which could not be covered with a bushel basket without doubling up the foliage, and from which over four quarts of berries were picked. If however, the plants have the viney habit, when you cut a runner another will start in its place, and it often requires the removal of several runners before a new fruit bud will form.

For hill culture the ground must be very rich or we cannot fully occupy the land. To secure the largest yields we must have as many plants on the ground as we can furnish sunshine for and at the same time cultivate and gather the fruit. To set them any further apart is a waste of land, and if the ground is not very rich they will not stool up enough. My favorite way, and one involving less labor, is to grow them in a hedge row. The rows are set thirty to thirty-six inches apart and plants twenty-four to thirty inches in the row. The first runners are thrown around directly in line and allowed to root so the plants will stand about ten inches apart when all the others are chipped off.

For this purpose I use the Planet Jr. rolling runner cutter, which can be attached to a cultivator or to a garden wheel hoe. It is the natural instinct of the plant to spread its runners out where each new plant will be in full sunshine, and so a large majority will be seen trying to cross the row, so that this wheel readily cuts them all off. In this way the alleys furnish abundant root pasturage and sunshine finds every leaf. We are able to cultivate nearly the entire surface so as to destroy weeds and maintain the dust mulch. In the fall we mulch heavily between rows with any kind of straw we can buy cheap and leave it until after berries are picked. It is then stirred up and burned off to destroy insects and fungi.

Another great advantage of this method is that the berries are all large and even in size, are easily picked, look very fine in the quart boxes and command a ready sale at the highest price. If the ground was not rich enough to grow in any except matted rows I would not plant any at all but sow the ground to cow peas, then plow under and apply plenty of stable manure. In the meantime I would prepare a small propagating bed and grow my own plants for setting the following year. There is no question but the country is on the eve of great prosperity. Labor will be fully employed and transportation companies are providing better conditions for distribution in carload lots. Under these conditions the consumption of fruit will be something enormous and prices must rule high, but to gather the financial harvest we must go at it right.

New Jersey. C. A. UMOSELLE.

Poultry Raising in the Orchard.

An ancient huckster drove a yoke of oxen hitched to a linchpin wagon down the streets of a Hoosier city and lustily cried, "Fruit and lumber!" His "fruit and lumber," however, were what we modern folks call hoop-poles and pumpkins.

Since the days of the ox, the linchpin wagon, hoop-poles and pumpkins, methods of farming have undergone a great change. Formerly, the frugal farmer exchanged his surplus produce for the very few necessaries of life not produced on his own premises, and passed his days in peace; now the farmer no less than the merchant must be a business manager, and pay the hard-earned cash for many things that he does not even attempt to raise. In the struggle for existence, therefore, the farmer must more and more employ sound business methods.

Since I am writing to fruit growers especially, men who have learned already through the columns of The Fruit-Grower many of the "ins" and "outs" of profitable fruit growing, I will confine myself to one of the most valuable supplementaries of fruit growing, poultry keeping in the orchard.

While the young orchard is growing to the age of fruit bearing, what can I do to bring in the indispensable dollars? This is a question in point to every beginner in the business. Well, let me help you solve the question. Had you ever thought of raising poultry? If you have, or if you have not, let me tell you why it is the thing to do, and why you should do it. Poultry keeping is the thing for the young horticulturist, because he can start in the business quickly, cheaply and right where he is. He can set his colony coops around through his young orchard and make good money while his fruit trees are growing. He can raise two crops on the same ground, a crop of eggs and a crop of fruit.

The young orchard is not the only place to raise poultry. In the shade of the old orchard is an ideal place for the brood coops and colony houses, and the old orchards, as well as the new, can yield the wide-awake fruit grower two cash crops in the same season. If you are not raising poultry in your orchard, you are missing a most profitable part of an orchard's product.

Poultry raising, like fruit growing, has undergone many changes in the past fifteen years. Fifteen years ago few fruit growers could be induced to set out anything but a Ben Davis apple tree; today it is quite different. Similarly, the old Dominiques, Cochin and Barred Plymouth Rock chickens are giving place to the Orpington family, and the old Mallard, Muscovy and Pekin ducks are being replaced, especially for egg production, by the Indian Runners.

Methods of raising poultry have also greatly changed. On up-to-date poultry farms we see fewer large, expensive buildings and more cheap open-front and colony houses. Some years ago, too, a pond of water was thought absolutely necessary for ducks; today thousands of Indian Runner ducks are raised with water for drinking only.

Poultry keeping is profitable. When I first began in the poultry business my objects were health and pleasure, but I had not gone far when I discovered that there was in it an attractive profit. My first purchase was a pair of Indian Runner ducks. "Old Polly," as I called my duck, began laying early in February and, to my surprise, laid every day for ninety successive days. This awakened me to the money-making qualities of the Indian Runner. I immediately purchased a flock of fifty and began the duck business in earnest. The first year I raised a fine flock of over 600 ducks, some of which I sold for $4 and $5 each. Not being satisfied with ducks, I later purchased a fine trio of Kellerstrass' Crystal White Orpingtons. I now have three varieties of thorough-bred Indian Runner ducks—American Standard, or fawn and white, imported English penciled, and the pure white. The eggs from my best pens are bringing me $8 for thirteen. I also have three pens of Crystal White Orpingtons, of the best blood lines obtainable, eggs from which I am selling at $3, $5 and $8 for thirteen. I mention prices merely as a convincing demonstration that there is profit in poultry.

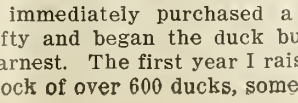
With poultry, as with fruit, the best is always the most profitable. Every fruit grower knows that money spent in first-class stock is always money well spent. The same is true with poultry. It takes but little more work to produce a thousand eggs that are worth from $5 to $8 per dozen than to produce a thousand that are worth only 25 cents per dozen. The Orpingtons and Indian Runners with an established egg record of 240 eggs a year are to the poultryman what the improved varieties of fruit are to the horticulturist or fruit grower. With a few well-kept modern Orpingtons and Indian Runners and some small portable poultry houses, the industrious fruit grower should be able every spring to turn the extra space in his orchard into an attractive sum of convenient cash.

You do not have to go to the tropics to raise two crops on the same ground, you can do it right where you are, in your orchard.

Indiana. MRS. D. O. TEASLEY.

Get your neighbors to subscribe.

Rippley's Solderless and Seamless Brass Lined Spray Rods



are lined with ⅜-in. heavy BRASS Tube, no Joints to break; 100 per cent better than other makes. Fine for power and all makes of sprayers. Guaranteed satisfactory. Order from this advertisement. 6 ft., $3.00; 8 ft., $3.50; 10 ft., $4.00; 12 ft., $4.25.

RIPPLEY MANUFACTURING CO., Box 10, GRAFTON, ILLINOIS

Paper Pots

Prof. R. L. Watts of Penna. Ex. Station writes: They are entirely satisfactory. They are the easiest folded paper pot on the market. Square, no waste space, shipped flat, low rates. 1,000 3-inch, $1.25; 5,000 for $5. 1,000 4-inch, $1.75; 5,000 for $7.50.

P. B. CROSBY & SON
1000 Ingleside Avs. Catonsville, Maryland

BRITISH COLUMBIA FRUIT

Strawberries a Profitable Crop—System of Cultivation and Fertilization on West Coast

Within a reasonable distance of Victoria, in fact, wherever daily delivery of the produce is profitable, and where the price of the land is not prohibitive, strawberry growing has proved very successful. In some localities, such as Gordon Head and Soanick, the business is being conducted on quite a large scale, the soil proving especially adapted to the requirements of this berry. Where I live—South Salt Spring Island—all goods have to be delivered by steamer and, though water transportation carries the fruit in better condition than by rail, lack of sufficiently frequent service has handicapped me in the past, preventing my growing strawberries as largely as I would have liked. But this is all being changed now for the better.

I have had twelve years' experience in growing this fruit, and my berries have achieved a sufficient fame to prevent my having any difficulty in selling the amount I found it advisable to produce. During these twelve years I have experimented a good deal and I here propose to give the results of my experience:

INDIAN SQUAWS PICKING STRAWBERRIES IN A BRITISH COLUMBIA BERRY FIELD.
—Photo by Fleming Brothers, Victoria, B. C.

Although it is the general practice here to grow the berries for market in the matted row system, some preferring the wide and some the narrow row, I have discarded this for two reasons, first because the plants are apt to get too thick in the row, involving the labor of thinning and, secondly, the weed trouble, for this system calls for a great deal of costly hand weeding which, at the present high rate of wages, eats up too much of the profits. My method I will describe in due course, but before doing so I would like to point out the effect upon the fruit the different kinds of soil will produce.

As no strawberry will succeed in poor soil, it must first be understood that in each case the soil must be rich enough to grow a good, healthy plant. This being granted, a sandy soil will produce an earlier and better-flavored berry, but smaller and fewer of them than will a heavier soil. Sandy loam gives a fairly early berry, of large size, good flavor, and a good crop. On soils that are heavier the crop will be later, less rich in flavor and generally less firm, but with stronger plants and more fruit. Swamp muck well drained produces enormous stools and rank growth of leaves and berries, but owing to excessive moisture, even when drained, most of the berries rot before ripening, the balance being soft, sour and flavorless. I am assuming above that the same variety is planted in each of the soils.

I prefer a somewhat sandy loam, well enriched and properly prepared, preferably by a previous suitable rotation, as follows: First year, potatoes, properly manured; second year, grain, with which red clover is sown; third and fourth years, clover. If the clover, at the commencement of the fourth year of the rotation, is given about 300 pounds of commercial fertilizer which is rich in potash, and 440 pounds of phosphate, it will make a very fine growth. After the clover is cut for hay the land should be given a good top dressing of barnyard manure, say fifteen loads to the acre, and then plowed under in the fall. Next year, to avoid the white grub, our only strawberry pest, a crop of potatoes should be grown. This kills all weeds and the cultivation works the soil up well.

After this crop is off, the soil, which is now rich in humus and fertility, should be well cultivated, both to get a good tilth for the plants, and to get rid of any stray potatoes. Then it should be marked out in straight lines four feet apart, both up and down the plot and at right angles to this.

Where the lines intersect a strawberry plant should be carefully set, with the roots well spread out and both roots and tops carefully reduced.

This is done in the fall, long enough before frost for the roots to get some grip of the soil. The plants are now in hills four feet apart each way. After the plot is planted it should be gone over lightly with a fine-tooth cultivator, to remedy the compacting caused by setting the plants and treading on the ground. If properly planted there is no upheaval by the frost.

Several cultivations with the fine-tooth cultivator should be given when needed to kill stray weeds and to retain the soil mulch. It will also pay well to hand weed close around each plant, as this will save trouble later on. As soon as the flower buds get any size, say in April, straw or grass free from weed seeds should be used as a mulch, and cultivation must stop until after the fruit is gathered.

By fall planting a small crop can be secured the first season, since the plants are well established. Care must be taken to promptly remove all the first crop of runners.

Directly the berries are gathered, cultivation is begun, and, of the second crop of runners, enough are saved to root six strong plants around each

Has The Fruit-Grower Helped You?

EVERY day we get dozens of letters from Fruit-Grower subscribers saying that any one of the numbers already issued for 1912 is worth the price of a year's subscription. They have read articles which will actually help them make more money. No doubt this has been your experience—and yet this is only a part of the service The Fruit-Grower renders its readers.

You need The Fruit-Grower; you need to know the experience of others; you need our crop reports, etc. The way to be sure to get them is to renew your subscription today. Don't put it off; Send your renewal now, so there will be no danger of your missing a single issue.

Long-Time Renewals Save You Money

Send your renewal for several years at a time. There is a substantial saving to be made, for The Fruit-Grower for three years will cost you only $2.00; five years will cost $3.00, ten years for $5.00. Send at least $2.00, and have your subscription out of the way for three years, anyway. You know The Fruit-Grower and know you'll get your money's worth.

Another thing: Send names of your neighbors who should read The Fruit-Grower. You know who they are, and we don't. They will appreciate receiving a sample copy of The Fruit-Grower, and we will send it to them upon receipt of their names. Do this for their sakes, and for ours, please.

The Fruit-Grower
St. Joseph Missouri

parent, one six inches from the parent and six inches from one another, making each hill contain seven plants six inches apart.

At the same time the hills are again hand weeded, after which the weeds give but little trouble. Cultivation, when necessary to secure soil moisture, is continued until the following March, when a handful of fertilizer containing nitrate of soda, 440 pounds; murlate of potash, 440 pounds; superphosphate, 1,120 pounds per ton, is worked in around each hill, but not so close as to burn the plants.

Cultivation, weeding and mulching is then done as before, until the berries are all gathered in this, their second year—the first full crop—and then with a scythe all the strawberry leaves are mowed off and the mulch spread very lightly over the plants. When dry it is burned off, to kill insects and fungous spores. This does not injure the plants if the mulch does not cover them too heavily.

Another good crop can be obtained the next year, but after this the berries grow smaller and, to my mind, are better plowed under. By the hill system, I can cultivate both ways, so the amount of hand weeding is largely reduced. I figure that it is worth close to $100 per acre to fertilize and cultivate one year as I have described. The number of hills per acre is 2,722, and the number of pounds of fruit per hill averages in a fair year two pounds, worth from 30 cents per pound, at about the end of May, to 6 cents and even less, towards the end of the season, so it is clear that early berries pay best. After deducting all expenses this crop should show a net profit of from $300 to $400 per acre, according to season.

Although the labor bill is high, the produce is of the best possible quality if this plan is followed, and it is only the very finest berries that will hold their price during the season. There are also a lot of cull berries, which, however, are apt to cut the price, but restaurants like these for canning for, though culls by comparison, the berries are merely not of largest size. Moreover, as they do not need to be sold in "hallocks," the cost of containers has not to be reckoned on. The best berries are shipped in crates containing twenty-four chip boxes of one pound, full weight, each. The size is regulated by law, so the buyers are protected. I find private customers the most profitable, though grocers and the Fruit Exchange (co-operative) handle much fruit. As I have my own family, I cannot say as to the present cost of picking the fruit. It used to be 1 cent per pound, but with increased production and the scarcity of pickers, I understand the price is higher, but variable.

Dunlap is an excellent early berry, while Maagoon and Gladstone, a superior berry in every way, leave little to be desired for a main crop, but any berry will grow well in our magnificent climate. A large, well-flavored berry of firm substance to stand shipment, well graded, and the pack of full weight, will always capture the market if ripe enough. An under-ripe berry cannot compete with it and, as we have so short a distance to ship, local berries should be able to drive all others from the field, once they come in. But unfortunately, insipid and half-ripe berries from outside capture the earliest buyers before ours are available, and though not to be compared, they are bought at high prices by those who must have the first of everything, regardless of quality.

As regards the barnyard manure to be ploughed under before cropping with potatoes, as described in the preparation of the land for strawberries, the newer it is the better, as it is never so valuable as when fresh, and if the potatoes are kept clean, little trouble from weeds should accrue. But if the land, after harvesting the potatoes, is not rich enough, I make a special compost which is at once free of weed seeds and very full of fertilizing elements. Being on the coast, where dogfish, herring and other fish can be obtained early in the year in large quantities, I compost this with stable manure, using land plaster kainit, or failing these, ordinary dry soil, to prevent loss of nitrogen. The whole pile of compost is left to heat, whereby the bones are softened and seeds killed. A thick blanket of soil, covering the pile, keeps in the smell, which would otherwise be unbearable until the fermentation has reduced it, and the pile must never be let become quite dry, but must be kept from exposure to the weather all the same.

In the fall, after the potatoes are dug and before the strawberries are planted, as much of this as needed is worked into the soil. Unfortunately this compost, ideal for the purpose, is only obtainable by those near the sea. After the berry plants are once in the ground I use nothing but this fertilizer, as it contains no seeds. If weeds once get ahead, the bed gets in a hopeless condition.

As to commercial picking and packing of this berry, the less handling the fruit has the better, so the pickers should be instructed to properly arrange the berries in the box in which they are sent to market. If each of them has a tray holding half a crateful—twelve one-pound boxes—of the little chip hallocks in which they are sold, it is easy for them to pack berries of even size in each box. Not all of one size, mind, but all of one size in each box. No berries of a size under any desired standard should be thus boxed at all, but the picker may have some other vessel in which to place these culls, or other and less skilled pickers may follow and gather these separately.

In picking, each berry should have the calyx and half an inch of stalk left on, not because this helps to make weight and to fill the box, though this is true, but because the berries are thus protected against crushing. No berry without calyx should be packed. The pack should be evenly arranged, all berries with their tops upwards, so that no green shows. The less ripe berries beneath, as these will best stand the crushing of the others.

A common mistake is to pick the berries not sufficiently ripened. I am speaking now of the local market only, where sales are immediate and distances short, so the fruit is not crushed in transit. Under these conditions a ripe berry, if of firm texture, is the best.

As the pickers bring in their trays of a dozen each, they may even use the commercial crates, holding two dozen boxes, if they keep them clean. They should receive a ticket, to be cashed in later on, to save trouble.

Now all boxes containing berries of a certain size should be packed in crates together, other sizes going into separate crates, so that all boxes in each crate should be alike. This is what sells them. All this packing should be done in a shed with open sides for sake of coolness, for coolness is of the utmost importance, since undue warmth hurts the fruit even more than shaking in transit.

If the crates are to be conveyed to market in the packer's wagon, an excellent plan is to fit a false bottom to the wagon on which spiral bed springs are fixed, as in a spring mattress. When the crates are set on these, they can be taken over even fairly rough roads with but little damage. A white wagon top keeps the fruit cool, and for the same reason, the inside of the wagon should be the same color, for dark colors absorb heat. It is attention to details that makes all the difference between No. 1 fruit and the ordinary cheap kind.

W. J. R. HAMILTON.

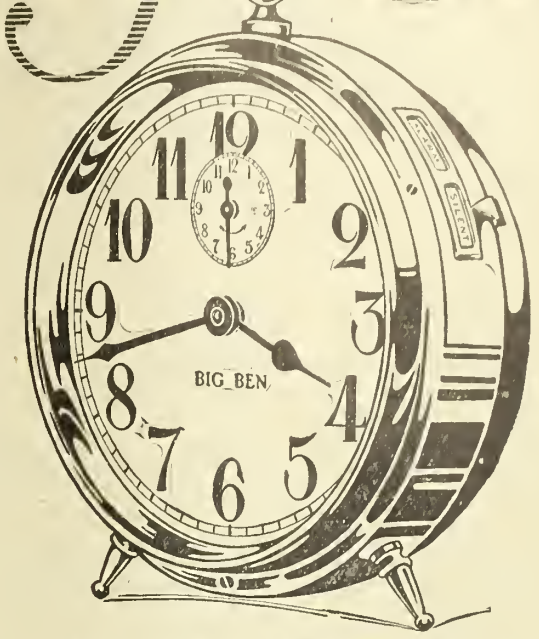
British Columbia.

Kind of Spray Outfit to Get.

In some remarks concerning spray outfits the Ohio Experiment Station says: "In selecting a spray outfit, care should be taken to purchase only machines which seem to have the qualities of durability, simplicity and sufficient capacity for the use of the average orchardist. The kind and quality of materials used in the construction, together with the sufficient strength of parts and quality of the workmanship, largely determine the durability of the pump, if the design is good. Only brass or bronze or other non-corrosive working parts will resist corrosion by the sprays. Parts liable to give trouble should be readily accessible so they can be easily removed and repaired. Large bronze ball valves and fairly large air chambers are desirable features. Hose leads should be at least 35 feet long with extra long hose connections and two hose bands at each end. Extension rods should be preferably of bamboo, lined with brass or aluminum tubes, and about ten feet in length. Cut-offs, preferably of the leakless type, are needed at the base of the rods. Vermorel nozzles of double and quadruple patterns are generally satisfactory, but disc nozzles usually are preferred to the other types, especially on power outfits."

Ask your neighbors to subscribe for The Fruit-Grower.

Big Ben



What Franklin said, I say again—
"Plow deep while sluggards sleep"—Big Ben

Farm-work goes like clock work when it is *started on time* each morning. Run your farm as *factories* are run. Have a *whistle* start the work-day. Big Ben, the national sleep-watchman, will *blow* such a *whistle* for you—in other words, he'll ring his tuneful bell at any time you say. Begin the work on schedule time each day, and you'll do a great deal more. *More work done, more money made.*

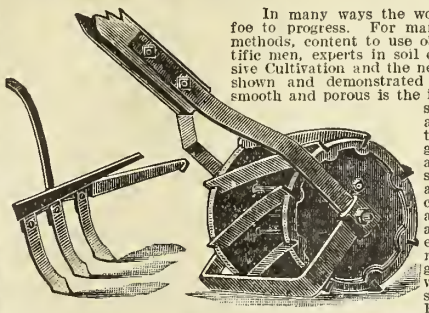
Some men get rich on farms and others fail. What is the reason? Most always it is this:—Some farm systematically and some do not.

The best system begins with the rising hour—start with getting the farm hands up on time.

BIG BEN IS BUILT FOR THAT ONE THING. TRY HIM ON YOUR FARM. See him at your jeweler's today. Note his big jolly sunlike face—his great, strong keys that are easy to wind, his large, clean-cut hands and figures which make time-telling easy, even in the faint morning light. Hear Big Ben's jovial voice — his *whistle*. You'll want him in your room and in the rooms of every farm hand on your place. Nine men will do the work of ten the first day he is used. Thus he'll pay for himself.

A community of clockmakers stands back of him—*Westclox, La Salle, Illinois.* If you cannot find him at your jeweler's, a money order for $2.50 addressed to them will bring him to you express charges prepaid.

Garden Cultivation



In many ways the world moves slowly. Precedent has always been a foe to progress. For many years people have been content to follow old methods, content to use obsolete tools for the raising of vegetables. Scientific men, experts in soil culture, have long pointed out the value of Intensive Cultivation and the newer and better methods to produce it. They have shown and demonstrated that cultivation which leaves the ground level, smooth and porous is the ideal method, the productive method. This porous soil mulch kills weed growth, retains the moisture at root of the plant where it is used in forming the nutrient solution upon which the plants feed, gathers the heat from the sun and holds it to force a more rapid growth of the plant, improving both size and quality. The Barker Weeder, Mulcher and Cultivator makes this perfect soil mulch. Will cut the crusts after heavy rains, pulverize the clods and leave the surface smooth and porous. This allows the perfect aeration of the soil and the escape of the noxious gases from below, which if retained poisons the plants and retards their growth. No other garden cultivator will do this work. No other garden cultivator will make a smooth level soil mulch of even depth. Yet the Barker is easy to operate. The mechanism is simple, nothing to get out of order or require delicate adjustment. Users have found the machine meets every need for even granulation and intensive cultivation, saves time and does better work than can be done with out-of-date cultivators. Drop us a postal giving your name and address and let us give you more definite and detail information regarding this Weeder, Mulcher and Cultivator. Will also include our special "Factory to User" offer. Write today to

THE BARKER MFG. COMPANY, David City, Nebraska

40 ACRE ORCHARD BARGAIN

In full bearing condition. No scale, 20 years old, 2,000 trees, level clay ground, well drained, 1½ miles from town. Varieties are Akins, Rome Beauty, Ben Davis, Winesap and Jonathan. Can be divided into 5 or 10-acre tracts, giving each purchaser the same proportion of each variety. Beautiful location. Because of the sudden death of owner's father and the necessity of settling the estate, the owner, who recently purchased this orchard, is compelled to sell at great sacrifice. This orchard will pay for itself in one good crop. This orchard will stand investigation by any government expert in the United States. Price $6,000, if taken immediately. Address

P. S.—Will rent on reasonable terms, if cannot sell. **Chas. E. Coffin, Greenfield Indiana**

$10 WILL BUY

FIFTY No. 1 Apple, and FIFTY 4 to 6 ft. Peach trees, or 100 of either. No Better trees grown. Ask about the "JUMBO" Peach, and how you can get $15.00 worth of Choicest Trees for $5.00. You will want trees that bear Prize-Winning Fruit. See ad, page 50 of February Fruit-Grower. A full line of Up-to-the-Minute Sorts. Send for list.

SUNNY SLOPE NURSERY, HANNIBAL, MO.

AUTO-TRUCKS AND FRUIT

Fruits Hauled in Trucks Bring Better Prices—Cost of Auto-Truck and Horses Compared

It has been repeatedly demonstrated that fruits are often more injured in hauling from the farm to town than in the long haul by rail. Indeed, it has been found that strawberries shipped long distances by rail, but which have not been hauled over country roads, arrive on Northern markets in much better condition than home-grown berries which have been jolted over the average country road. Home-grown berries are therefore often neglected, under such conditions, and the shipped fruit bought instead.

Shrewd fruit growers have come to appreciate these facts, and as a result they are more interested in the subject of auto trucks than ever before. At all the automobile shows farmers have inspected not only the pleasure cars, but the commercial trucks, as well. Thousands of readers of The Fruit-Grower, we believe, are interested in using these trucks in transporting their fruits to market or to shipping station; they are therefore interested in an article published in the Michigan Farmer, telling of the actual experience of a fruit farmer living near Detroit.

This man lives thirty miles from the market where he sells his produce. He uses a one-ton auto truck to haul his produce, and is satisfied with his experience. During the past season this truck traveled about 12,000 miles, so that it has been thoroughly tested. The machine is a double-cylinder twenty-horsepower truck, measured according to the Amerian League of Automobile Manufacturers' rating, and twenty-four horsepower according to the brake test. The platform is about five and a half by ten feet, of the stake-body type. Capacity is rated at one ton. Price of the car is $1,300, when fitted with patented cushion tires, and $1,150 when equipped with pneumatic or solid tires.

The writer made a trip on this car from Detroit to the farm and back, the distance shown by the cyclometer being 64.3 miles. The actual traveling time from Detroit to the farm, which lies among the hills about five miles to the northwest of the city of Rochester in Oakland County, was actually two hours and five minutes, no time was lost on the outgoing trip on account of the car. A considerable portion of the road was very good, consisting of city pavements until the city limits was reached, cement road for a few miles, six miles of Royal Oak sand, then possibly twelve or fourteen miles of gravel road which was in first-class condition. The remainder was largely ordinary dirt road, much of it of a sandy nature, which on this particular day, was wet, a condition not altogether suited to power traffic. The last six or seven miles of the journey were among the hills where steep grades were encountered, steeper, probably, than would be found in most parts of our state. In climbing these hills the truck was compelled to go over long stretches of very stony road.

The test was made on October 5, and for two weeks previous, excessive rains had fallen. The dirt roads were wet and mud holes of considerable length and depth were found.

The journey back to the city took two hours and thirty-five minutes actual running time. We stopped once on account of the car, the supply of gasoline having become exhausted through an oversight. The tank of the machine was supposed to have been filled, when it actually had not been, as discovered later. Inquiry of a party who had been using the machine the past year showed that he had not failed to reach the market on a single trip this season.

The truck was loaded with fruit, consisting of thirty-eight bushels of pears, eleven and one-half bushels of grapes and four bushels of apples at the farm of Jacob Perry, who lives near Goodison and who has been delivering fruit on the Detroit market for the past twenty years. The truck weighed alone 3,060 pounds and with the load of fruit, 6,190 pounds, making the fruit weigh 3,130 pounds, or over 50 per cent more than the rating of the car. Three persons were carried on the car besides the load, Mr. Perry, Mr. E. P. Telotte, who has been using the machine on the Detroit Eastern Market for the past season, and the writer. Our combined weights were about 500 pounds. The truck appeared to carry this load very nicely. There was apparently no shifting of the load whatever on the trip. While making the outgoing journey, bundles were laid on the center of the platform and in traveling over rough places it was seldom that they would be jarred from their position, thus indicating the steadiness with which the vehicle held its load.

From observation on this occasion and the experience of those who have used the machine during the past year, one is impressed with the fact that the fruit arrives in a better condition than when delivered on wagons. A little consideration will show this to be reasonable. In the first place, the fruit is on the road a much shorter time. It takes a good team eight or nine hours to cover this route, where the auto truck delivers it in two hours and thirty-five minutes. So, instead of the fruit being jarred for eight or nine hours, it is jarred in this case less than one-third the time. Then again, the rapid movement of the fruit through the air cools it. Anyone who has ridden in an auto, even on a still, warm day, knows that with a machine traveling at fifteen miles an hour, there is a stiff breeze and one feels like buttoning his coat. This breeze has the same effect upon the fruit. It has been the experience of growers, that strawberries delivered on the truck, when sold beside those from the same field and of the same grade and picking, delivered on a wagon, brought higher prices, thus testifying to the condition of the fruit delivered.

An advantage which is often overlooked when considering this proposition of getting fruit to market with the auto truck, is that the farmer is enabled to watch both ends of the business. That is, he can have supervisory control over the harvesting of his fruit crops and at the same time attend to the selling side. With the auto truck he leaves the farm in the evening after supper, arriving on the market in good time to retire in the evening, sells his load early in the morning and is back home again between 9:30 and 12 o'clock. This enables him to look after the pickers, watch the packing of the fruit and do such other work as befalls the owner of a fruit plantation. With teams, the owner must apply his efforts to practically one end of the business alone, either that of harvesting the crop or disposing of it upon the market, leaving the other end to some subordinate.

The final questions to which all propositions of this kind are put is the cost, and the question, "Can I deliver my fruit more cheaply by use of an auto truck than by the old system of using horses?" is the one most interesting to the majority of men. By as extensive an inquiry as it was possible to make, we find that an auto will regularly do the work of three teams on the route above mentioned, since a team cannot stand making distance one way every day. Figuring on this basis, we deduce the following table, which we believe to be very near the exact cost, both as to original investment and the upkeep of the two different systems.

Comparative Cost.

Original investment with horse system:

Six horses at $150	$ 900.00
Two wagons, complete at $125	250.00
Two sets harness at $40	80.00
Total	$1,230.00

Good Seeds

Good vegetables and abundant crops can come only from GOOD seeds. THORBURN'S Seeds are good seeds: they have been the standard for purity and fertility for *over a century.*

Special Offer

Beet, Egyptian	05
Cabbage, Private Stock Flat Dutch	10
Carrot, Long Orange	05
Celery, Golden Self-blanching	10
Leek, Carentan	05
Lettuce, Grand Rapids	05
Muskmelon, Hackensack	05
Watermelon, Sugar Stick	05
Onion, Yellow Globe	05
Pepper, Ruby King	05
Radish, French Breakfast	05
Tomato, Chalk's Early Jewel	10
Sweet Basil (Herb)	05
Summer Savory (Herb)	10
Chinese Cabbage (Pe-Tsai)	05
Parsley, Extra Curled	05

16 full-size pkgs., regular value $1.00

$1.00 Worth for 50c.

Send 50c. in stamps or silver to-day for this special offer. Remember, disappointment and lost time only, can result from using inferior "cheap" seeds. THORBURN'S Seeds are "tried and true." Test them.

Send for our new 1912 catalog any way. It is a beautifully illustrated book—144 pages of valuable advice, interesting information and helpful suggestions. Get it. It's FREE.

Thorburn's Seeds

110 years in business in New York.

33H Barclay St., through to 38 Park Place

In writing advertisers please mention The Fruit-Grower.

$5000

A YEAR FROM A TEN ACRE FARM

is not an unusual record with small fruits when best varieties are selected and proper culture given.

Knight's Book on Small Fruits

tells what varieties to plant and the care to give them in order to produce these results. Send for a copy of it today and learn the facts about **Giant Himalaya Berry, St. Regis Everbearing Raspberry, Great Gibson Strawberry** and all of the other money-making varieties of **Strawberries, Raspberries, Blackberries, Dewberries, Gooseberries, Currants, Grapes,** etc. This book is not mere theory, but the result of over thirty years of experience and study. They are free as long as they last.

DAVID KNIGHT & SON Box 100 SAWYER, MICHIGAN

Go South Sir!

Farm Land $10 an acre

up can be purchased in the Southeast along the Southern Railway, Mobile & Ohio R.R. Ga. So. & Fla. Ry. supporting good 12 churches, schools, stores and improved highways.

LIVE STOCK, POULTRY AND DAIRYING business pays big, and is conducted at smaller cost than in other sections of the country. Luxuriant pasturage and green fields the whole year 'round make this possible.

ALFALFA GROWS abundantly in nearly all parts of the Southeast. Many acres produce 4 to 6 tons, selling locally from $14 per ton up.

APPLES, FRUIT, TRUCK AND COTTON are other big paying crops. Apple orchards net $100 to $500 an acre, and truck gardening $200 up.

CLIMATE UNSURPASSED—Every day in the year one can work in his fields. These long seasons allow raising two and three crops from the same soil each year.

Subscription to "Southern Field" and booklets on States of Va., N. & S. Car., Ga., Fla., Ala., Miss., Tenn. and Ky. sent FREE.

and Grow Rich

M. V. RICHARDS, L. and I. Agent, Southern Railway, Room 33, Washington, D.C.

FRUIT TREES

100,000 Apples, Peaches, Cherries, Pears, Plums, Quinces and small fruits at wholesale prices, all government inspected. Write today for our Free Catalogue and buy direct from the growers.

Ontario Nurs. Co., Inc., Bx. 21, Geneva, N. Y.

The Farmer's Review Club

The publishers of The Fruit-Grower are glad to announce that arrangements have been made whereby we can offer in connection with The Fruit-Grower one of the very best weekly farm papers in existence, The Farmer's Review, published at Chicago, Ill.

The illustrations herewith show a cover page of the Farmer's Review, also cut of a beautiful art calendar which will be sent free to everyone accepting this liberal clubbing offer. Here is some interesting data regarding the Farmer's Review and the Bride Calendar.

SOMETHING ABOUT THE FARMER'S REVIEW

Each week you will find in The Farmer's Review a mass of valuable information, a wealth of practical ideas, a gold mine of absolute facts that will enable you to grow larger crops, raise better livestock and earn higger profits.

Farmer's Review subscribers are "livewire" farmers because The Farmers' Review is just that kind of a paper.

More than 90,000 successful farmers in the great Middle West read it carefully every week. These men have built solid successes with the same judgment that prompted them to subscribe for The Farmer's Review in the first place, and then to continue to take it regularly thereafter.

THE FARMER'S REVIEW "BRIDE" CALENDAR

is without a doubt the most beautiful painting of modern times. Words cannot begin to do justice to its remarkable beauty and the accompanying illustration, printed in black and white and greatly reduced in size, conveys but faintly the impression of loveliness and daintiness with which the beholder of the painting itself is always charmed.

The lithographic artists were successful in making an exact reproduction of the original, and the work has been carried out in 14 colors and gold on fine quality highly enameled portrait paper to insure perfect results.

The calendar measures 7½ inches in width by 3 feet in length, which permits of an artistic arrangement of the figure and the long veil and sweping train add much to its attractiveness. There is no advertising on the front to prevent framing, but the panel effect really does away with the necessity of framing. Calendar for 1912 is printed on reverse side.

The regular subscription rates of The Fruit-Grower and the Farmer's Review are $1.00 a year, but we offer this $2.00 value to anyone sending remittance of only $1.50.

THE FRUIT-GROWER, One Year $1.00
FARMER'S REVIEW, One Year..... 1.00
$2.00

BOTH FOR $1.50

Remember that in addition to the two publications, the Farmer's Review wil send you this beautiful art calendar free of charge, and The Fruit-Grower will also send free a copy of the Brother Jonathan Calendar. This offer holds good until May 1st only. Send remittance at once, and address, "Farmer's Review Club Department."

THE FRUIT-GROWER, St. Joseph, Mo.

Operating expenses, depreciation and upkeep reduced to a single day.

Two drivers at $1.50	$3.00
Two teams to stable and hay at $1.15	2.30
Grain for three teams	1.50
Shoeing bills	.43
Repair bills	.30
Depreciation	.40
Total	$7.93

Original investment with auto truck:

One auto truck, one-ton.....$1,300

Operating expenses, depreciation and upkeep reduced to a single day.

One man	$1.50
Repair bills (average)	.30
Depreciation	1.25
Oil, gasoline, 8 gals., at 9½c	.76
Cylinder oil, 1 qt., at 44c gal	.11
Total	$3.92

These figures show that the initial cost of equipment is a little more for the auto truck, providing the patent tires are used, but a little less, fitted with the solid rubber or pneumatic tires. The operating and upkeep expense show a daily advantage of $3.99 in favor of the auto truck.

Some of the items in the above table should be explained. A wagon fitted for transporting fruit, costs more than an ordinary farm wagon with a single box; the above price is what fruit growers actually have to pay. The grain item for the teams may be questioned by some. The teams used for transporting fruit are fed four times per day with a feed consisting of from five to six quarts of good oats. The shoeing bill may seem large to an ordinary person, but the man who has driven teams on the road day after day will appreciate its reasonableness; the figures were taken from the books of a farmer drawing fruit to the Detroit Eastern Market and are the results of actual experience. The repair bills for the wagon are also from actual accounts; tires and spindles need to be repaired quite frequently and make up the largest part of the repair bills. The depreciation is figured on the basis of a rig lasting ten years, which appears to be about the average for this kind of work.

We have had our attention brought to the fact that the auto, when not working, is of no expense to the owner, except the interest of the money which is invested, whereas horses require to be fed whether they are working or not. This is a matter which cannot be shown on the table, but nevertheless is a real one and one that would work out in favor of the machine.

The repair bills for the auto truck was an average of the expense of the truck on the market during last summer. The depreciation was calculated on the basis of the truck lasting five years. The amount of gasoline used, and also of cylinder oil, was an average struck from thirty trips made to the market. It is found that a one-ton truck requires but one gallon of oil for eight miles of travel.

The writer was somewhat skeptical regarding the utility of an auto truck for this service when he had his attention first introduced to the subject. But his observations on the market and the trip mentioned above, supplemented by the experience of those in whom he has the utmost confidence, has convinced him that these machines offer a chance for reducing the cost of placing produce on the market, especially where it must be brought from a distance. Comparatively speaking, the longer the haul the greater will be the margin between the cost of delivering with the auto truck and with horses. It is estimated that another season from thirty to forty machines will be in service drawing produce for farmers who patronize the market.

Red Raspberries in Tennessee.

No berry has been more profitable for me than the red raspberry. These sold here last year on the Chattanooga market for $5.40 to $7.20 per twenty-four-quart case. My land is a red loam with a sand subsoil. I prefer land sloping to the north, and in this section of the country it offers some protection from the hot sun of summer.

I prepare my land for raspberries by turning it in the fall or winter as deeply as I can, the deeper the better. Then, just before I am ready to set the plants, I harrow and work the soil until it is thoroughly pulverized. Then I take a bulltongue plow and lay off the rows as deep as the plow will run. I go twice in a row, so as to throw out a good furrow. I set the plants in this furrow, and pack the soil well around the roots, and pulling it in until the furrow is full.

These rows are laid off at about five feet apart and the plants set two feet apart in the rows. Cultivation is done as soon after each rain as the soil can be worked, using a fourteen-tooth cultivator or a small harrow. By cultivating every ten days and after every rain the ground is kept in good condition. It is advisable to cultivate shallow, and to cut off all weeds, grass and suckers with a sharp hoe, and to keep up the cultivation regularly, until the grass stops coming.

Some growers advise to pinch the tops out of the sprouts when they are eighteen inches high, but I think this injures the plant as it causes a late summer growth which is almost sure to be killed in the cold weather. I let them go without any pruning whatever until February or March. I then cut the canes back to two feet or eighteen inches, according to their strength. All dead wood is also removed.

For a mulch I prefer to use forest leaves. These are put on in late winter, just before the pruning is begun, and piled around the canes, and along the rows to a depth of a foot. Strawy manure is sometimes scattered over this mulch. I find this method very satisfactory in my raspberry plantation, as I do not cultivate after the first year, and the mulch serves in keeping down the weeds as well as maintaining the moisture in the soil. Dry weather does not affect berries when mulched in this way.

I grow Cuthbert altogether. I do not advise extensive growing where long shipments have to be made to market, but if a good local market is to be supplied, this variety is very profitable. I pick the berries in the morning and take them to market in the afternoon. C. P. CONNOR.

Tennessee.

"How's Your Neighbor's Orchard?"

Ever since we raised this question and urged Fruit-Grower readers to secure the subscriptions of their neighbors who grow fruits, because of the direct benefit to their own orchards if these neighbors adopt up-to-date methods, we have been receiving words of encouragement from members of The Fruit-Grower Family. Every day we get many new subscriptions and also hundreds of names of persons interested in horticulture, all being sent in by our friends.

Let the good work go on. If your neighbor's orchard is not properly cared for, ask him to subscribe for The Fruit-Grower. It will help your work greatly if all your neighbors spray their trees and otherwise protect their orchards against insects and diseases. Every time you get a new subscriber for The Fruit-Grower you help in three different ways: You help your neighbor, you help yourself and you help us.

Send us names of all your fruit-growing neighbors. We will send sample copies of The Fruit-Grower to them, and some of them will subscribe. Now's the time to do this missionary work.

See the Big Roots
—OF—
Our Strawberry Plants

No better plants can be grown than are produced in our warm, loose sand and silt. Back this up with proper care and handling, and the yielding quality practically is certain.

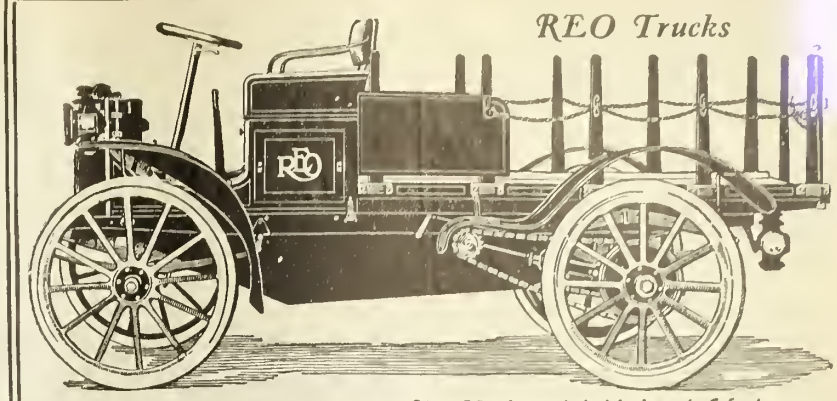
Get Our 1912 Book
Good Years Coming!

We've watched the situation closely, and have summed it up in our book. All signs point to banner seasons for strawberry growers in 1913 and 1914. Get the book and learn our views. FREE.

J. W. JONES & SON
25 South Road, Allen, Maryland

Advertisers like to know what paper is giving the best service for money expended. You can aid them materially if when writing, you mention **The Fruit-Grower**

REO Trucks



Wheel base, 90 inches—Horsepower, 10 to 12—Length behind seat, 6 feet—Capacity, 1,500 pounds. Front seat top, $25 extra.

Only $750

Operation—50 Cents a Day

The Reo Truck, designed by R. E. Olds—a truck of 1,500 pounds capacity—is sold for $750.

Compel those who ask $1,200 and up to prove their extra value.

We have a mammoth plant built for trucks alone. We are building trucks there at a minimum cost, and adding a minimum profit.

We are selling these trucks through Reo dealers, already established in a thousand towns.

The result of this policy is a price you can't match on a truck of like capacity.

Two Years of Tests

Mr. R. E. Olds, this truck's designer, is a very careful man.

He has built automobiles for 25 years—tens of thousands of them.

When he offers a truck you may be sure that truck is right.

To test this truck, under every condition, he put hundreds of them into service.

He tested them out in forty sections, in thirty lines of business. And these tests have now covered two years.

One loaded truck was run from New York to Oregon. Two carried the baggage in the Glidden Tour, from New York to Jacksonville.

Whatever requirement a truck must meet, these trucks have been made to meet.

Wherever you are—whatever your service—the Reo truck will do what you expect.

Simple—Strong—Efficient

A boy in ten minutes can learn to operate this truck. He can care for it, too. No expert is needed.

There is nothing to get out of order. Simply supply it with gasoline and oil.

The cost of gasoline, oil and repairs, as per many tests, has averaged under 50 cents per day.

One truck can do five times the work of a one-horse dray. It can do it three times as quickly. It can do it at 60 per cent of the cost of horse delivery.

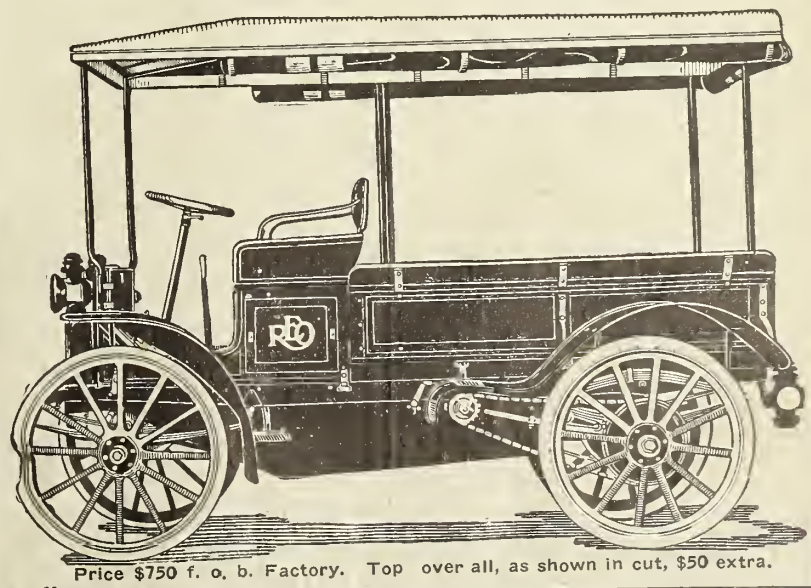
It can do it in any weather, on any road, in rain or snow or mud. It is always ready, and it costs you nothing when it isn't busy.

You will cease your horse delivery when you prove this truck.

Our local dealer will demonstrate the truck. He will teach your man to run it. He will render Reo service.

Write us for information.

R. M. OWEN & CO., General Sales Agents for REO MOTOR TRUCK CO., Lansing, Mich.



Price $750 f. o. b. Factory. Top over all, as shown in cut, $50 extra.

50

BERRIES AT LINDENHURST

Our soil is a good clay loam which will produce good crops of corn or potatoes. In order to prepare it in such a manner that it will come up to ideal for a strawberry field, we plant clover. This is manured and otherwise well cared for. This is then plowed under and followed by a crop of potatoes. Potatoes need thorough cultivation, and this helps get the soil in good tilth and puts it in fine shape for strawberries in the following year. As soon as the soil can be worked in the spring, we begin cultivating, disking and harrowing so as to get the surface in a finely pulverized condition, and follow this with a roller or float, as may be needed. Then, at the earliest date possible, preferably the last of April or first of May, the strawberries are planted.

The Kind to Plant.

In selecting our plants for setting in the field, our first efforts are directed to securing the best plants we can buy. These we get from dealers who have good reputations and from whom we can be sure that the plants will be true to name. There are so many different varieties of strawberries, and it is so easy to make substitutions, that care in this respect is necessary. In addition it is necessary to select those varieties for commercial planting which are known to do well in our location. Some varieties give good results for us, while others are complete failures. There are also pistillate varieties of berries, and we must be on the lookout for this, as such kinds must be planted side by side with staminate sorts in order to secure a crop of fruit.

Here in Northern Illinois the Warfield and Dunlap are the best sorts for commercial planting. For other varieties which we want to try, we study the list which is recommended by our nearest horticultural society, and constantly maintain a large experimental field in which new kinds are given a careful trial. Varieties which are adapted to other locations are not always suited to our conditions, and it is also hard, from our trials, to recommend varieties which would be suited to other conditions.

While some of our plants are purchased from other growers, we now maintain propagating beds of our own, to enable us to grow the plants we need for resetting our fields. This enables us also to select only the strongest plants for setting in the new fields.

Planting.

In preparing the plants for setting, our first action after the plants are dug and selected is to trim off all of the surplus leaves, and then clip the ends of the roots. They are then ready for planting.

When we first began to grow strawberries we made rows about four feet apart, then with a strong dibber the plants were set fifteen to eighteen inches apart in the row, being careful to not set them too deep or too shallow, and to have the soil well firmed around the roots. As soon as the plants are set, the land is cultivated and a dust mulch maintained throughout the season. This necessitated cultivating after every rain, just as soon as the soil is dry enough to be worked. The cultivator is followed with a hoe, and the soil worked up loosely around each hill, so as to never allow a weed to get a start.

As soon as the runners began to form, they were directed along the rows, and the young plants heeled in, exercising care that the plants stood no closer than six inches apart. These rows were allowed to form to a width of fifteen inches, after which all runners were clipped off.

Double Hedge Row.

On a small scale this is a very satisfactory system and in one season we were able to produce a crop that amounted to 12,000 quarts per acre. But as our fields enlarged another system had to be adopted, and we are now using the double hedge row in all our new plantings. In preparing the field for this system of planting, the marking off is done by running double rows in one direction, and single rows at right angles to these. The double rows are made a foot apart and the single rows three feet apart. Plants are set at each intersection, making the plants come in pairs a foot by three feet apart. This makes double rows of plants four feet from center to center, and facilitates cultivation considerably, as we can cultivate in both directions until the runners demand the space in the rows. When this time arrives, we string the runners out in the rows, setting the new plants in single file, six inches apart, and leaving a small space in the row to be cultivated partially by an attachment to our Planet Jr. cultivator and finished with a hoe.

By this method we have found that one man can cultivate a considerably larger area than was possible in the original matted row. When the rows are filled properly with new plants, we stop all further running by clipping. By maintaining a dust mulch during the summer, and keeping the plants thinned out we are pretty sure of a fine crop of large berries.

A FIELD OF STRAWBERRIES PLANTED IN DOUBLE HEDGE ROWS.

Our crop in 1911 amounted to 8,000 quarts per acre, which, considering the severe drouth in the early part of the season, was a pretty good yield.

As soon as the ground freezes in the fall, we cover the plants lightly with straw, preferably wheat or rye straw, unless we can get clean marsh hay. Then in the spring we spread this mulch just enough to let the plants come up through it.

Illinois. CHARLES HEY.

Kellogg Plants

Will Yield $500 to $800 per Acre

Stevensville, Mont., Feb. 13th, 1912.—Enclosed find order for 31,000 Strawberry Plants. I have used Kellogg Thoroughbred plants in Massachusetts, Vermont, Province of Quebec, and the Bitter Root Valley of Montana, and have still to experience my first disappointment. Kellogg plants are like a hard-boiled egg—they "can't be beat."—William J. Gall.

Another letter, dated Dec. 22nd, 1911, comes to us from J. S. Furnas of Brownville, Neb., stating that he sold $725 worth of strawberries from three-fourths of an acre of Kellogg Thoroughbred plants. This is at the rate of $1,000 per acre. Our 64-page book contains many reports of similar yields, and tells how they do it. It's free.

R. M. KELLOGG CO., Box 305, Three Rivers, Mich.

In writing advertisers please mention The Fruit-Grower.

25¢ PRIZE GARDEN COLLECTION 10¢

3 New Leaders for your Garden.

WHITE DELICIOUS RADISH, Per pkt. 10c
MAY KING LETTUCE, Per packet 5c,
EARLY JUNE TOMATO, Per packet 10c.

SPECIAL—The above Collection sent postpaid for only **10c.** together with our new **Seed and Nursery book,** giving most valuable information on gardening, farming and fruit growing. Our **hardy Northern grown Seeds are unexcelled** in purity, vitality and productiveness.

FARMER SEED & NURSERY CO.
524 4th Av. FARIBAULT, MINN.

Farmers—I will prove that this new Farm Tool Grinder is a great work saver

You can put a sharp edge on all farm tools in a jiffy and keep them keen and bright with little work. To prove the value of this wonderful Luther Tool Grinder on your farm, I will let you use it for 30 Days Free.

This new Luther Tool Grinder is all metal construction—has shaft drive like an automobile—enclosed dust-proof gears—gravity lubrication. The Dimo-Grit wheels on this machine make 4000 revolutions per minute. Will not draw temper from steel—no need of cooling with water. Guaranteed 5 years.

Earns its Cost in Short Time

THE LUTHER FARM TOOL GRINDER

What the Luther Farm Tool Grinder will do

It will grind your discs and plow points, sharpen your saws, axes, ensilage cutter and mowing machine knives—polish and sharpen every tool on the farm. You will be surprised to see how quickly it does the work. The outfit also has jig saw—rip saw—lathe—drill and forge attachments—30 different attachments in all—from which you may select. The outfit costs very little and will easily pay for itself in a short time.

Rapid and marvelous sharpening wheels revolutionize tool grinding

Dimo-Grit is the new artificial sharpening substance especially adapted for steel. It cuts hardest steel as emery does copper. Dimo-Grit crystals are artifical diamonds as hard as real diamonds, fused in the wonderful electric furnaces at Niagara Falls. These wonderful Dimo-Grit wheels make 4000 revolutions per minute and do the hardest job of grinding in a few minutes. Will not draw temper. Runs as easy and quiet as a sewing machine.

Read these letters from users—thousands more like them

Sharpens Discarded Ax In Three Minutes

The Farm Grinder and Fire Fly were received O. K. During the first hour the boys ground four discarded axes that were too dull to be used in splitting wood, and put them in first class condition; also ground two scythes, a hedge knife and several other tools. One boy timed the other in grinding one of the very dull axes and it took him just three minutes to put it in perfect order. Life is too short to use the old fashioned grindstone when the Luther Grinder can be had so cheaply.

Newark, Del., R.F.D. 3. J. W. STUDDARD.

Agricultural Colleges Recommend It

I find the Luther Grinder an ideal machine for general farm use, and I believe it will be money well spent for any farmer to have such a grinder to keep the tools in shape on his farm. It is far in advance of the old fashioned grindstone. The machine is well put up, and I am happy to say is sold at modern cost.

HENRY G. KNIGHT.
Director of Agriculture, University of Wyoming, Laramie, Wyo.

U. S. Government Officer Recommends It

I have tried the machine and it is perfectly satisfactory. I don't see how you do it for the money. By referring to your correspondence you will see the machine was purchased by our agent, Mr. J. B. Woods.

C. E. GREY, Department of Interior, U. S. Indian Service.

WRITE FOR 30 DAYS *FREE TRIAL OFFER*

All you need do is to write me a letter and say, "Send me full particulars about the Luther Farm Tool Grinder and the 30 Days Free Trial Offer." When you get my 40-page book which tells everything, select the outfit you want and I will send it on 30 days free trial with no conditions or red tape, and without putting you under the slightest obligation. Put it to the test. I take all the risk. Send for the Free Trial Offer right now. **(Signed C. J. Luther, Pres.)**

LUTHER GRINDER MANUFACTURING CO. 464 Stroh Bldg. Milwaukee, Wis.

RHODE ISLAND BERRIES

The old standard berries of this island were the Cutter and Crescent. They proved a fairly profitable combination of small prolific berry, with a four weeks' season of bearing.

We sell our fruit in about the best market of the east. For a fancy berry, Newport is a terminal market, and therefore limited in point of quantity which it can use, but from the phenomenal wealth of its summer population, it demands best in fruits and vegetables, and is willing to pay the price.

The first variety of strawberry that was introduced here, and which made any pretentions to size was Sharpless. It was large, irregular and mis-shapen, and with a tendency to be green on one side and rotten on the other and was soon discarded. Next came the Clyde, a large, smooth and prolific berry, but too soft and inclined to rust. The Brandywine looked like a winner. It had a wonderful color, fine shape, good size and cropped well on wet land. But it was nearly annihilated in a couple of seasons by blight, and finally disappeared.

About this time Bubach No. 5 was tried out, and made good; but it was difficult to get a stand of vines sufficient to draw setting plants from, and it too, was eventually lost, but more from neglect than intention. The Bederwood was outrageously prolific, but not attractive in appearance or flavor. The Dayton was a great cropper, but so sour that one could not sell it in the same market twice.

Our methods of culture are comparatively crude. Strawberries are almost never sprayed, and the plants are grown in bedded rows four feet wide, with a one-foot path between beds. Our winters are extremely irregular, and protection which may be necessary one year may smother the plants the next, and because of our treatment of our strawberry beds, some varieties which are otherwise very excellent, have not proven hardy.

Bismark, the Profit-Maker.

About 1902, from some of the strawberry growers on the north end of the Island of Rhode Island we got a new combination of plants; that is, two varieties alternated for the sake of fertility. These are the Haverland and Beverly. The Haverland was early and prolific, of good size, sweet, and covering the ground well, while the Beverly was late, very brilliant and saleable and helped materially to lengthen the season. These kinds have gradually fallen in the rear as the demand for size has increased.

The most profitable berry we have ever grown is the Bismark, and it has proven to be a real money maker here. With plenty of fertilizer under the vines this variety will go the limit and will give two pickings of fancy berries, and fruit of fair size through the rest of the season. As it is grown here, there is but one thing that can be said against this variety, and that it that its color is a little pale. The foliage is a rich, dark green; the plants run well the first season and bear early and it is without exception the most prolific kind I have ever seen. It endures the hardest winters, does not blight or rust and in comparison with approximately fourteen kinds, Bismark has turned over more dollars every year than any other kind, excepting in the freak season just passed.

During the season of 1911, Nick Omer, our best fancy berry yielded uncommonly well, bringing more money, with less fruit than the Bismark. Nick Omer has all other berries we have ever tried "beaten to a frazzle" when it comes to size, color and general excellence. The only serious difficulty with it is in holding a stand of plants during the bitter winter months. It is not very hardy. It occasionally drops into a fall bearing tendency, when the spring is late and cold. In 1903 I received $38 for 44 boxes of Nick Omer, picked in October. During the past season some of these fall berries appeared.

Last year I purchased some of the Francis, Americus and Superb of L. J. Farmer, Pulaski, N. Y., and they were nearly all destroyed by the gray cutter during the summer. But what remained were fully up to the guarantee, blossoming consistently until the first of December. As soon as I can get enough of the true fall bearing kinds for commercial purposes I shall hope to report something interesting, and with the premium paid in Newport for berries out of season.

R. WALLACE PECKHAM.
Rhode Island.

FIELD OF FAE STRAWBERRIES, WITH POCKAMOKE AS A POLLENIZER. GROWN BY W. J. ALT, OHIO.

H. G. Fletcher Manager at Grand Junction.

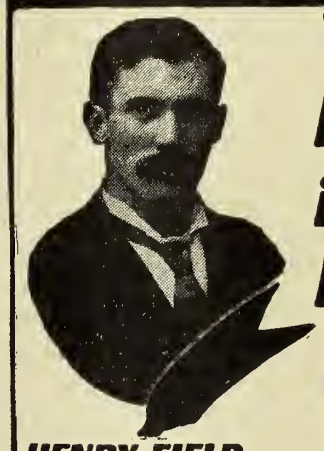
Last month The Fruit-Grower stated that F. R. Davis had been chosen to succeed John F. Moore as manager of the Grand Junction Fruit Growers' Association. When we went to press the election was in progress, and our informant was wrong in saying Mr. Davis would undoubtedly be elected. Mr. H. G. Fletcher was elected to fill the vacancy caused by Mr. Moore's resignation, and Mr. Davis continues as assistant manager.

Mr. Fletcher is an experienced man, having for many years been associated with Mr. Moore in the management of this association. A year ago he resigned to go with the Gibson Fruit Company of Chicago, and now comes back to his old work. Under his management this organization will doubtless continue as one of the very best shipping associations in the country. The Fruit-Grower wishes the new manager much success, and looks forward to a most prosperous year for the Grand Junction Association.

Cream Separator Governor Pulleys.

The Strite Governor Pulley, the missing link between the cream separator and the gasoline engine, is said by those who use them to be the only successful device for driving cream separators with gasoline engines or any unsteady motive power. The engine may be started instantly at full speed and the Strite Pulley will gradually increase until the normal or desired speed is reached. This pulley not only starts the separator slowly, but it controls the speed at all times, regardless of the variation in the speed of the engine or line shaft. By the use of the Strite Governor Pulley not only the life of the cream separator is increased, but the capacity of the machine is increased and produces a more uniform grade of cream than is possible to produce by hand turning. See advertisement in this issue. —Adv.

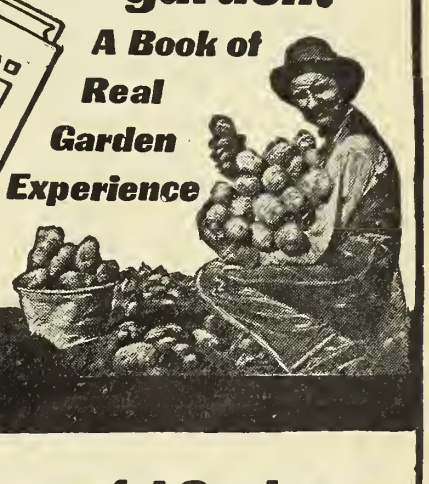
How to Make Money Gardening



You will Find it in This Book

You can make $400 an acre off your garden.

A Book of Real Garden Experience



HENRY FIELD,
Seedsman and gardener.

Some of the Things the Book Tells

How to keep worms and lice off of cabbage.
How to grow tomatoes in dry weather.
How to keep flea beetles and striped bugs off of cucumbers and melons.
How good melons were grown in the extreme north.
How a profitable garden was grown in the sand hills.
How a Pennsylvania girl made $6.75 off of a little bed of flowers.
What garden crops pay best and why.
How a Minnesota man made $450 per acre on onions.
What early tomatoes pay best and why.
How to grow winter cabbage and make it pay.
How to grow peanuts in Iowa.
How a woman grows celery in Dakota.
How to grow 100 quarts of strawberries from 100 plants.
How a Wyoming woman grew $9.38 worth of peas from three pints of seed.
How hundreds of people made money gardening in a dry year.

The above is just a few samples. No matter where you live or what you grow you are pretty sure to get some useful information out of this book.

My 1912 Catalog

Have you had my new catalog yet? It's really worth reading, and if you haven't had it, you have missed something. It's entirely different from any seed catalog you ever saw. Some people call it a Garden Manual. It's pretty near a textbook on gardens.

It's free for the asking, and I want you to have a copy. Ask for it. There is one waiting for you.

If you have any troubles in the gardening line, write and tell me about them and I will try to help you out. Address me personally.

Henry Field, Seedsman and Gardener,
Pres. HENRY FIELD SEED CO.,
Box 15 Shenandoah, Iowa

Trade Secrets of Successful Gardeners

Haven't you wondered lots of times how it was that these successful gardeners did so well at it and made so much money?

It seems to be easy for them, but they rarely tell how it is done. They would rather keep it to themselves.

But here is a book that gives the inside story of hundreds of successful gardens. Tells how they made big crops and big money last summer in spite of the dry weather.

It is the true stories of the winners in my *garden contest* of last summer, told by themselves in their own words and in their own way.

It is the most interesting batch of letters I ever read. They are real heart to heart talks, and they are illustrated with pictures of the prize gardens and products.

Every garden was a real garden—not a paper garden. The people were real people, like you and I and your neighbors. There were men and women, and boys and little girls and old bachelors—all garden cranks and all successful.

You can learn more by a study of these letters than by reading all the textbooks in creation. I am an old hand at gardening myself, but I learned lots from these people.

I have made these letters into a book, a beautiful, readable, handy book. A book of nearly 100 pages containing over a hundred real photographs and I want you to have one.

I am giving this book free to my customers with their seed orders. To others the price is 25c which will be refunded on your first seed order.

There is a copy here for you. Shall I send it? H. F.

To HENRY FIELD SEED CO.,
Box 15 Shenandoah, Iowa.

Enclosed find 25 c (stamps or silver, either is all right), for which please mail me at once "The Book of a Thousand Gardens" with the understanding that the 25c paid will be refunded on my first order for seeds.

Name..... P. O.....

Do you want my seed catalog?..... State.....

The catalog is free. If you want it only and not the Garden book, cross out upper part of coupon.

MORE ON AIR SPRAYERS

One Who Is Using a Compressed Air Sprayer Makes Suggestions For Intending Purchasers

I note with some interest an article in the January Fruit-Grower in regard to compressed air spraying, with which I have had considerable experience.

I am using an outfit which was designed by the W. H. Owen Sprayer Company, Sandusky, Ohio, one of your advertisers, after an investigation which covered the whole field of experiments made to date with compressed air for orchard spraying purposes, and discussing the matter on the ground with one of the foremost compressed air engineers in the country and one of the largest manufacturers of air compressors. It has occurred to me that if beginners could have the benefit of my experience, they could save a lot of worry, expense and delay, all of which are important factors.

In the first place, one must have tanks which will stand the pressure. We blew up two tanks finding this out, though, fortunately, no one was hurt. Then, one must have enough compressed air to hold up the pressure until the liquid tank is emptied, as the air compressing is all done before the rig leaves the spray house.

We use a liquid tank which holds one hundred and thirty gallons, and an air tank ten feet by twenty inches, and if we were ordering again we should have the air tanks still larger. These two tanks weigh about eight hundred pounds, and we place the liquid tank a little nearer the center than the other in order to balance the load when driving around over the hills.

The Owen tanks are equipped with a sprocket wheel agitator, which may also be worked by hand. Other people are placing one tank above the other, using the smaller sizes, and various other methods to all of which there are serious objections.

Oil the Tanks Inside.

The liquid tank is filled by gravity while the air compressing is being done, which requires about fifteen or twenty minutes, though it could be done much quicker if one had a larger air compressor. We are using a 4½-x4½ Gardner, which is self-oiling and requires absolutely no attention except to see that water goes through the water jacket and change the oil in the base frequently, according to the amount the compressor is run. We take this oil out and use it to oil our liquid tanks on the inside when we put them away for any length of time. We first wash the tanks out thoroughly, and then put in a little water with the oil on top and agitate it violently, which covers the inside of the tank with oil.

We use several rigs with one four-horse team, though two heavy horses would answer the purpose. The only reason we don't use three is because it would not be so convenient to make the change with a three-horse evener, and one horse has to travel too close to the tongue. With four horses, the driver comes in and drops the machine behind the one which is filled, simply lifts his wagon-hammer, leaving the neck-yoke and four-horse evener attached to the team, so all that he has to do is to drive his team around, put in the neck-yoke and wagon-hammer and drive off. The nozzle men can be kept at work constantly, and one man can run the plant, while a boy big enough to handle a team can deliver the rigs.

The Owen people have a device for instantly connecting the hose without the use of wrenches, so that the whole thing is very convenient.

If one starts out to rig up the thing without proper advice, he will buy a lot of stuff and have a great deal of expensive experience, as we did.

Uses Home-Made Solution.

Probably the most attractive feature of the thing is that there is no power developed in the orchard and no nozzle trouble. We have had all kinds of sprayers in the past, and had the usual trouble with the engine, nozzles and pumps. With the Owen nozzle cleaner we have never wasted a minute in the orchard, except when we have bursted hose, and if one will write to the list of rubber companies referred to in an article in your January issue he can buy the very best hose made for much less than retail price. We use a fifty-foot length for the man on the ground and a fifteen-foot length for the man in the tower. The man in the tower uses a fourteen-foot pole and the man on the ground a short pole. The man in the tower sprays the top of the trees, of course, and the man on the ground the bottom, and we take one-half of two rows at once, unless the wind is blowing too hard against us, our trees being planted thirty-two feet apart. We use a six-horse-power gasoline engine, which is so guaranteed by the manufacturers that it makes us no trouble, as we simply telephone them when it gets out of order to come and fix at their expense, and our mixing is all done by the same engine. For about fifty dollars we had a machine-shop rig us up with revolving paddles in the tubs which are a complete success, as we have a stationary paddle in the liquid just above the revolving paddle and close to it. We make our own lime-sulphur solution with a little boiler and would not advise anybody to buy the commercial mixture if they use much of it, because it can be properly made with little work if instructions from the experiment stations are properly followed.

Our liquid tank holds one hundred and thirty gallons, and we have put out as high as one thousand gallons per day, per rig, when the days are long, using, of course, a coarse nozzle.

A great many of these air compressed outfits are used now in orchard spraying, and especially in the east, and some of them in very large orchards. The last instance I have noted is an eastern man, who has six hundred acres of orchard and nineteen sets of these tanks guaranteed for a working pressure of two hundred and fifty pounds.

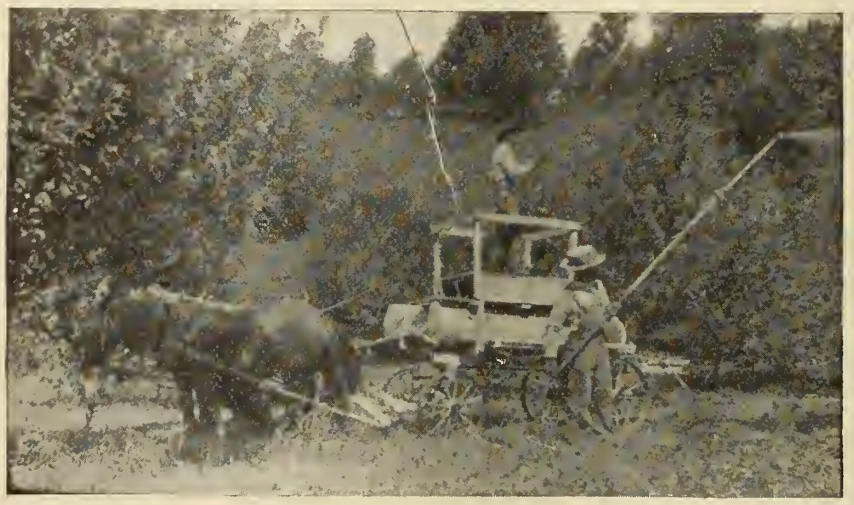
The gross weight of the rig, of course, is the tanks plus the wagon gear, and we use an ordinary flat iron-wheeled wagon, though it is not wise to use wheels which are too low on account of the down draft on the horses' necks.

It takes more time to fill the first charge in the air tank, as only about half of the air pressure is used up in emptying the liquid tank when the air is shut off. This saves a lot of time in compressing the air after the first time, which enables this work to be done while the liquid is flowing into the other tank.

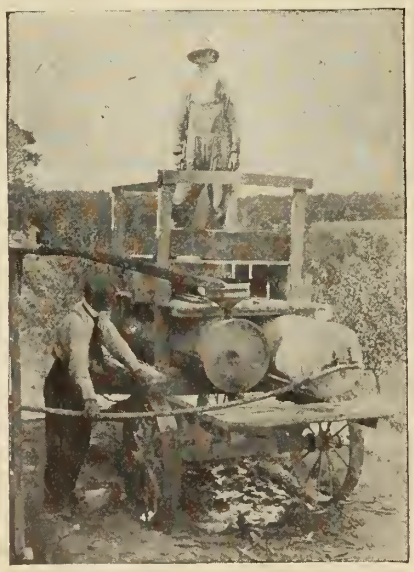
I should be glad to hear through the columns of The Fruit-Grower from some more of the readers who are experimenting along this line.

Illinois. LEATON IRWIN.

Get your neighbors to subscribe.



COMPRESSED AIR SPRAYER IN THE ORCHARD OF MR. IRWIN.



Filling the Compressed Air Sprayer.

YOU'RE interested, of course, in knowing how and when to spray and what preparation to spray with. It's just as important to know that the spray you buy is pure, unadulterated and of full strength.

Devoe Arsenate of Lead, Devoe & Raynolds Paris Green, Devoe Lime and Sulphur Solution are all sprays to count on. They will do the business—if you will do your share.

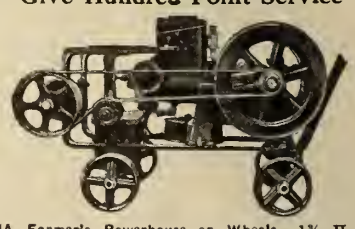
Back of Devoe sprays is the name "Devoe"; a guarantee of quality. If your dealer does not carry Devoe sprays and says he has something "just as good," better write us.

Devoe & Raynolds Co.
171 W. Randolph St., Chicago
New York Kansas City Denver
Largest makers of good paints for all purposes

SAVE
Your Trees and Shrubs

KILL SQUIRRELS!
—and gophers quick! Don't let them kill your trees and shrubs. Spend 50c, 75c or $1.25 for box of Mickelson's Kill-Em-Quick, the world's cheapest and most effective
Poison for Gophers and Squirrels
Its taste and smell draw pests like a *magnet*. The merest atom means *death* to any rodent pest. Ask druggist or order direct, express prepaid. Mail postal for free booklet.
MICKELSON KILL-EM-QUICK CO. 1421 Washington Ave. Minneapolis, Minn.

OUR LATEST IMPROVED STYLE
COMPRESSED AIR SPRAYER
WITH MECHANICAL AGITATOR
Note what others who are using them have to say about this most modern and efficient method of spraying. The foremost orchardists of the country are installing our system rapidly, recognizing superiority, durability, economy in initial cost, weight, time and labor with **no machinery taken into orchards, therefore nothing to get out of order.** Write
W. H. Owen Sprayer Co.
SANDUSKY, OHIO

Gilson 60-Speed Engines
Give Hundred Point Service

"A Farmer's Powerhouse on Wheels.—1¾ H. P. and 3 H. P. Engines on truck with line shaft, 5 interchanging pulleys, idler and pump jack. Change from pump to power a moment's work.
A 60-SPEED SPRAY OUTFIT will patrol your orchard and do every other job within its power. The price is a sensation. Send postal for particulars.
GILSON MANUFACTURING COMPANY
31 PARK STREET, PORT WASHINGTON, WIS.

In writing advertisers please mention The Fruit-Grower.

Spraying SUITS
AN ABSOLUTE NECESSITY for Safety, Comfort and Convenience when spraying. MADE TO YOUR MEASURE. Write for descriptive pamphlet and prices. AGENTS WANTED. ARNOLD SPECIALTY CO., Box 182, Poughksepsie, N. Y.

100,000 Strawberry Plants For Sale (Aromas) at $5.00 per 1,000. Address Alfred C. Helm, 914 Wyandotte Street, Kansas City, Missouri.

NOTES FROM OREGON

One of the exceptional features of the Northwest this winter has been the high price paid for Italian prunes, from 7 to 10 cents per pound, wholesale. I wonder what the consumer in the East had to pay for them? Several results already follow from this great advance in the price of prunes; first, old orchards are receiving better care, and, second, many new orchards are being planted. So great is the demand for Italian prune trees that one nursery agent informs me that he is able to get 50 cents each for yearling trees.

Fourteen years ago, when my father-in-law planted fifteen acres of prunes on this farm, he was able to get all the trees he needed for no greater cost than the labor of digging them from the nursery row. Now the question is, how long will it be before history repeats itself? There is one thing certain: the prune market is subject to more and greater fluctuations than any other fruit market we have. Years when there is a general fruit shortage in the Mississippi Valley and through the South, are years when the high prices prevail for the prune. On the other hand, when there is an average fruit crop throughout the East, prunes, if they sell at all, often sell for less than the cost of production.

Another fruit that has picked up greatly in prospects during the past two years is the Loganberry. As long as the chief demand for this berry was for the canning factory, there was little prospect of its becoming a commercial success, as it was a difficult berry to can, and the canners did not want it. But recently many growers have taken to evaporating them, and with encouraging success.

A berry that continues to be a favorite with the canning factories is the Evergreen blackberry. This berry grows wild along every roadside and in neglected places on every farm. It thrives and produces bountiful yields of the finest fruit without any attention whatever. I have seen a single clump or bush from which were picked more than two hundred gallons of berries. Last summer the canning factories paid 24 cents per pound for these berries, delivered at the local stations. The demand seemed to be unlimited, but the people were too busy to pick them.

Our chief money crop on this ranch has been peaches, for which we have an unsurpassed local market, having sold practically all the fruit we have been able to produce at $1.50 per box in the orchard.

On bottom land we have planted about ten acres of peaches with black walnut trees every forty feet, the intention being to graft the black walnut with English varieties and have a walnut orchard when the peaches are gone. The greatest drawback that we have experienced in growing peach orchards on bottom land here comes from the ravages of the law-protected beaver. During the past two years we have had a thousand dollars' worth of fine trees cut down and dragged into the river by beavers.

It is a problem that both vexes and confounds the average fruit grower here, that a state like Oregon, which aspires to stand in the front rank in horticulture, will yet persist in protecting a perennial pest like the beaver to the sad devastation of its horticultural interests and to the benefit only of a few wandering trappers.

Another little pest of the earth that has almost driven my wife to despair, in her efforts to have things at their best in the lawn and garden, is the mole. Josh Billings used to say that "the rabbit multiplied faster than the multiplication table." I believe that the mole, in this mild climate, is running the rabbit an even race. Many and conflicting opinions are held in regard to this little mammal of the under world. To some he is a blessing and deserves the tender and generous protection of his debtor, man; to many others he appears an unmitigated nuisance who loves darkness, because his deeds are evil. I side with the latter.

There are some things in which science and average observation and experience do not agree. One of these things is the personal and dietic habit of the mole. I remember some twenty years ago, when I was squandering my not very precious time in college, the state entomologist of Illinois offered a reward to $300 to anyone who would bring him a mole with vegetation in its stomach. When I got back to the farm, I lost no opportunity to regale my ignorant fellow farmers with my very superior scientific wisdom. This question of the mole came up. I told them the mole never ate vegetation; I told them of the reward. My contention was disputed by everyone. My brother-in-law conducted me to his cornfield, where he showed me a number of moles that he had poisoned by inserting a crystal of strychnine in the heart of a grain of corn and dropping it into the runway of the mole. This experience came to me very vividly last spring when I lost three rows of early peas just as they were sprouting. Every pea was consumed and every row was traversed full length by a mole-run. Of course the peas might have been eaten by mice, but I have always been suspicious of the mole since that day in the cornfield.

My wife and I, after careful mathematical calculation, discovered that in our lawn and garden, which covered less than an acre of ground, there are just 9,873 moles.

Something had to be done. We could get along very well without peas, beans and radishes, but pansies and bulbs we just could not live without. "Necessity being the mother of invention," and the flowers being a necessity with us, my wife became the inventor, with the result that we no longer fear the moles. We have banished them from certain restricted, precious areas. Our method has been to procure a ball of the finest-mesh poultry netting that is made. The soil of the flower bed was then dug out to a depth of ten inches around the sides, just as though we were going to dig a cellar. When the excavation was dug to the desired depth, with the sides cut vertically, the next step was to line completely on the bottom and sides with the poultry netting. We were careful to lap the netting where the widths meet, and to allow it to project at least an inch above the surface of the soil. We then put the soil back in the excavation with the assurance that a mole will never enter it

We recently made a large bed for bulbs by cutting a trench around the the bed to the depth of two feet, into which we set a width of netting, making an underground fence. We do not think the moles will burrow under it, and the netting will last for years.

Oregon. S. H. VAN TRUMP.

Good Missionary Work.

G. W. Logan, Logan, Mo., sends the subscriptions of four of his neighbors and asks that we start them off with the first of the year. "The January number alone is worth the price of the year's subscription," says Mr. Logan.

And he shows that he means what he says, friends, by getting these four new subscriptions. How about your neighbors? Aren't there some of them who need The Fruit-Grower? We count on your getting their subscriptions. Get them now, please. We can send January and February issues, starting subscriptions with the January number, if desired.

Ask your neighbor to subscribe for The Fruit-Grower.

NOW is the time to rid your trees of fungous enemies and give them a good start towafd bringing you a profitable yield. Spray this spring with

Spray Now for Perfect Fruit In the Fall

ELECTRO Lime-Sulphur Solution

(CONCENTRATED)

Obtain at least 98% Perfect Fruit this year

This is the best insecticide for San Jose Scale and all scale and sucking insects, and is also the best summer fungicide known. It is a clear, cherry-colored liquid, free from sediment, and we guarantee it to contain the highest percentage of soluble sulphur — the killing agent. It meets the requirements of all State and Federal laws.

Send at once for our FREE booklet "Spraying Simplified"

and learn just when and how to protect your trees against all insects and fungous enemies. Its 68 pages are full of valuable information for the farmer and small fruit grower *A postal will do*

The Vreeland Chemical Co.
44 Church Street
New York

Chemicals *for* Spraying

(BULK PRICES)

Our Fungicides and Insecticides comply with the various National and State Insecticide Laws. In fact are considerably better than these laws require.

REVISED LIST OF PRICES TO DATE

Arsenate of Lead		**Lime and Sulphur Solution**	
1-lb. Jar	$ .21	Guaranteed 33% Baume	
5-lb. Jar	.80	1 Gal. Jug	$ .60
12½-lb. Pail	1.75	5 Gal.	1.50
25-lb. Kegs	3.25	10 Gal.	2.90
50-lb. Kegs	6.75	**Hellebore** (White)	
100-lb. Kegs	12.00	1 lb.	$ .16
200-lb. Bbls.	23.00	10 lbs.	1.50
Copper Sulphate (Bluestone, Small Crystals)		**Hellebore** (Black)	
1 lb.	$ .12	1 lb.	$ .18
10 lbs.	1.00	10 lbs.	1.60
100 lbs.	9.00	**Bordeaux Paste**	
500 lbs.	42.50	1 lb.	$ .18
Sulphur (Commercial)		5 lbs.	.68
Per 100 lbs.	$3.00	10 lb. Pail	1.30
Paris Green		20 lbs.	2.20
½ lb.	$ .15	**London Purple**	
1 lb.	.26	1 lb.	$ .16
5 lbs.	1.20	5 lbs.	.75
14 lbs.	3.20	25 lbs.	3.50

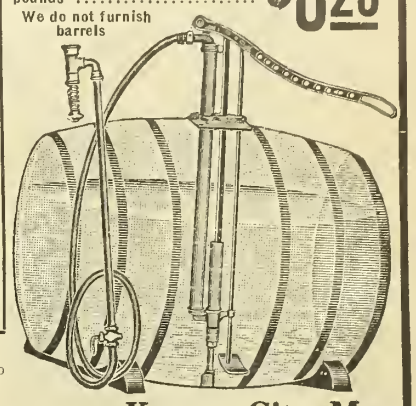
Order above goods on this number, 11D22.

Write us your needs. We sell Sprayers from 29c to $250.00 each. Our prices will save you money.

SPRAYER OUTFIT

23FG11 — SPRAYER OUTFIT, complete as shown, weight 45 pounds $8.25

We do not furnish barrels



Jones, Post & Co., 1090 Liberty Street, Kansas City, Mo.

The Safe Investment of Your Money

A company that has withstood the test of time for fifteen years, growing stronger each year through prosperity and panics, is a safe place for your funds. Our record is one of uninterrupted success for a long period under one management, with increasing strength and security assured. Our

7% Gold Bonds

provide an absolutely safe investment with a fixed income. Interest is payable semi-annually. These bonds are in the denomination of $100 and have coupon attached. They are secured by first mortgage on our real estate and all other property, including The Fruit-Grower.

If you are considering the investment of funds, the security of principal is the first requirement and we can satisfy you, as we have many other readers of The Fruit-Grower, who are now drawing interest on our bonds. Send check for the amount you have to invest and we will forward the bonds by registered mail or express; or we will send the bonds to your banker and you may give him the money for them. Write today for some of these bonds. We refer you by permission to the First National Bank of St. Joseph. Address

THE FRUIT-GROWER, St. Joseph, Mo.

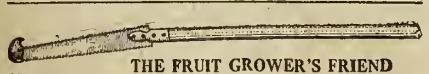
The Monarch Pruner

PATENTED

AT LAST

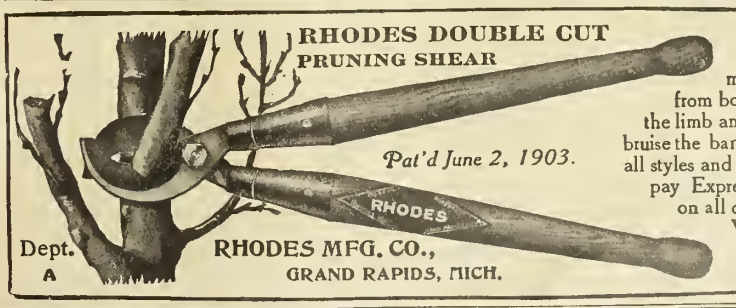
a pruner that does the work the best way in the best time. Place the guidearm against the limb to be severed, thrust the pruner forward and presto! the work is done; neatly, smoothly, quickly done, without leaving stub or injuring tree. Saw attachment for extra large limbs. Get your season's work done with the best. Isn't your time valuable? Saves time—hence money. Ask your dealer or write us. Expressage prepaid.

MONARCH PRUNER & MFG. CO., INC.
Box 1463 Spokane, Washington



THE FRUIT GROWER'S FRIEND

No climbing. Great labor saver; 2 sizes, 8 and 12 ft. Leading orchardists use them. Made of best saw steel. Agents wanted. Write for circular and prices. The Ideal Pruning Saw Co., 788-90 Mt. Hope Av., Rochester, N.Y.



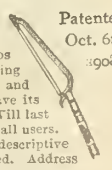
RHODES DOUBLE CUT PRUNING SHEAR

Pat'd June 2, 1903.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

Dept. A RHODES MFG. CO., GRAND RAPIDS, MICH.

PRUNING SAW



Patented Oct. 6th 1908

Operates from ground. No breaking of limbs by climbing. No moving of ladders. No sawing of wrong limbs. Can reach topmost branches and shape tree better than by old methods. Will save its cost in one day. Nothing to get out of order. Will last for years. Thousands in use. Recommended by all users. If your dealer can't furnish it, write for full descriptive circular and prices. Satisfaction guaranteed. Address

FRUITGROWERS' SAW CO., Scottsville, N. Y.
J. A. SCHROER & CO., St. Joseph, Mo.
General Agents for Western States

How to Entertain Book with 250 Jokes and Riddles, 73 Toasts, 67 Parlor Tricks, 8 Fortune-telling Secrets, 52 Money-Making Secrets, 22 Funny Readings. All 10c Postpaid.

J. C. Dorn, 709 S. Dearborn St., Dept. 42, Chicago, Ill.

Let Us Do Your Washing One Month FREE

We will prove to you, right in your own home, that the EASY Vacuum Washer will do your washing easier and cheaper than any other machine.

We will do this absolutely without risk or expense to you, sending our wonderful EASY washing machine on *thirty days' trial.* Then if you do not want to purchase it, we will take it back and pay the railway charges.

"We have tried many washing machines, but the EASY beats them all. We would not be without it now. Enclosed find payment."

WILL A. MORRIS
633 Twelfth St., Washington.

EASY VACUUM WASHER

Washes Clothes by Air

Other washers have teeth that grind the clothes, tearing and wearing them out.

The EASY has no teeth—it does not grind or pull the clothes in any way. Instead, the air chamber creates a suction, and the water is agitated by the air pressure, pumping rich suds through and through the fabric. The EASY will wash anything—from laces to blankets—without the slightest injury.

If you only knew how much this wonderful machine would save you in time and work—how much longer it would make your clothes last—you wouldn't keep house without it. Write today to

DODGE & ZUILL
F.-G. 5
Syracuse, N.Y.

THE NATIONAL PLANT PROTECTOR

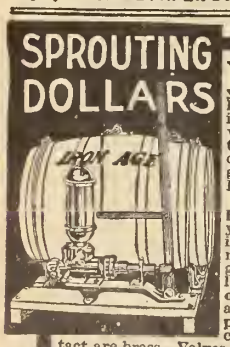
SHIELDS YOUR PLANTS AGAINST HEAT, COLD, DROUTH, RAINS AND WINDS.

COVERED UNDER PATENTS
744284-851056

FOR ALL KINDS OF SMALL PLANTS! RAIN, SUN AND WIND PROOF.

Reap what you plant! Do not take unnecessary chances, when you can avoid same, by helping with a protector. Profit by the gain in maturity. Remember the "Early Bird catches the Worm." Full information and sample sent on receipt of 5cts. Only by NATIONAL PAPER BOX CO., Kansas City, Mo.

SPROUTING DOLLARS



YOU have dollars that never "sprout." Are you going to leave them lie and rot? They are in your fruit trees, vines and gardens. Give them a chance, and the dollars will sprout, and grow, and bear dollars. How? By spraying.

With the IRON AGE BARREL SPRAYER you can kill injurious insects and fungi, and make your trees and gardens bear abundantly. All working parts outside, except the agitator. High pressure pump. Parts with which chemicals come in contact are brass. Valves are bronze ball.

This practical Sprayer is only one of a complete line of orchard, garden and field tools.

Write to-day for Booklets.

BATEMAN MFG. CO., Box 506 H GRENLOCH, N. J.

Don't Wear a Truss!

C. E. BROOKS,
the Discoverer

Brooks' Appliance, the modern scientific invention, the wonderful new discovery that cures rupture will be sent on trial. No obnoxious springs or pads. Has automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves. No lies. Durable, cheap. Pat. Sept. 10, '01. Sent on trial to prove it. Catalogue and measure blanks mailed free. Send name and address today.

C. E. BROOKS,
57A State St., Marshall, Mich.

A COMBINATION FARM

How an Oregon Man Makes a Dairy-Fruit Farm Profitable—Solves the Labor Problem

W. K. Newell, an Oregon man who left the city and went to farming because he "loved the game more than anything else," has made money by a combination of fruit and dairying.

"On our farm near Dilley," writes Mr. Newell, "we have fifty acres of very good fruit land, the remainder being bottom land. My first plan was to grow fruit and timothy hay for market, keeping only such stock as was absolutely necessary. I soon found that this plan of selling everything from the place had already been carried on too long and that the meadows were failing and some change must be made, and made soon.

"Naturally dairying suggested itself as the most promising method of keeping up the soil fertility; so a start was made with a few such cows as could be picked up about the country; one or two Jerseys, one or two Holsteins, the remainder Shorthorns, mostly grades, but two pure bred ones from a herd bred for milk production. Shortly afterward I very fortunately purchased ten calves and yearlings at the auction sale of Col. Cornelious' fine herd of Holsteins. In spite of poor care and adverse circumstances generally, the greater part of these young Holsteins made profitable cows; and had I then known even the little that I now know about caring for dairy cows, I would at present have a fine herd. But I had it all to learn and you know experience is a dear teacher.

"Of course, I had to listen to a local butcher, who induced me to head the herd with a Shorthorn bull of strictly beef type, because he said he would take all the calves for veal and the worn-out cows for beef. I need not tell you the result; you can guess it, if you don't already know from experience; scarcely one of the heifer calves ever was worth the raising, though I raised several of them; but I did occasionally have nice veal.

Did Not Know How

"At that time the only creamery within reach was operated on the gathered cream plan with deep setting. The waste of this method, combined with low prices, poor cows and poor feeding, created a disgust with the business that led to the sale of all but six or seven of the cows. Then an attempt was made to make butter at home, but this was worse yet, and for a time the dairy business languished. But the failure to find any other solution of the problem drove me back to it; the creamery was reorganized on the whole milk plan and I tackled it again. Gradually it began to dawn upon me that the trouble was more in myself, my lack of knowlege of even "first principles," than in anything else.

"So I went to the Oregon Agricultural College one winter to take the Farmers' Short Course and the knowledge gained, the incentive to better work that was given and the pleasant acquaintances made have all been very beneficial.

"I was never satisfied with the creamery plan, that is, the whole milk creamery. It made entirely too much work handling and besides, returned the milk to us in very poor condition. So about three years ago I purchased a separator and began shipping cream to Portland; selling for the sweet cream trade in the summer and the butter fat in the winter. This has proven the most satisfactory of any plan I can find for handling the milk.

"The Pacific Coast Condensed Milk plant at Forest Grove, operates a milk route past my door and have made a great effort to get my milk but as they pay only 10 cents more per hundred for the whole milk than I get for the cream, and as I find the skim milk worth 25 cents per hundred for calf and pig feed, I cannot see where I would benefit by selling to them.

"Had I only a few cows, or any number less than twenty-five, I should sell to the condenser, as it would not pay to operate such a plant as mine for a small dairy. I am now milking thirty-two cows, but could handle the milk of fifty or sixty at practically the same cost, and I expect to keep that many as soon as I can raise those that are worth the keeping.

Improved His Methods

"Imbued originally with the idea that all a cow needed was some pasture in summer, a stubble field in the fall and a straw stack with a little hay in the winter, it has been a difficult matter for me to bring myself to the point of feeding a generous and a balanced ration. I could not believe that it would pay, nor did it show that it was paying at first, but finally I reached the stage of knowledge where I learned that I could not get something for nothing. After a few months the cows began to look sleeker and brighter, and as each cow freshened she gave a larger quantity of milk and the best of all, she kept on giving that extra quantity for a much longer time than ever before.

"One of the best investments I ever made was the purchase of a pair of scales for weighing the milk of each cow as she is milked—a spring balance with an adjusting screw so that the empty bucket brings the pointer to zero and the figures then indicate the net weight of the milk. With some sheets of paper ruled for the weights and tacked up by the scales it takes but an instant of time to keep the record and it is certainly of great value. In no other way can you tell what a cow is doing. If some night a cow is four or five pounds short on milk, without the scales, you think 'Oh, well, I must be mistaken, this is about what she usually gives.' But when you see the figures you know better and you will begin to hunt for the reason. You can tell accurately whether or not a cow will pay for extra feeding at any time and you can gauge her feed to suit her performance, something that will always be necessary no matter how well you may balance her ration to suit her weight.

"And, happiest result of all, it interests every milker in his cows. As every dairyman knows, it is difficult to get cows milked clean, but I find that any man who is worthy to be a milker at all, will take interest enough in his cows' records to take extra pains in milking in order to keep up a good showing. This point alone is worth vastly more than the slight cost of keeping the record.

Solves Labor Problems.

"One good point that I find in the combination is a matter of hired help. I like to have a man for every eight or ten cows in milking, for I can thus do away with the extreme long hours that are such a drawback in the dairy business. Of course, I could not afford to keep so many men for dairying alone, but with the orchard and the vineyard spreading the fruit harvest over four or five months and the necessary pruning, spraying and picking, the packing of fruit occupying several weeks every year, I was able to employ more help and get better results by this combination than I would have been able to do had I confined my work to fruit growing or to dairying alone. With the fruit harvest out of the way and the spraying and care of the orchard done the winter months can be devoted to dairying.

"It is during this time that we do our best work in the dairy perhaps, although we do not neglect it at any season of the year. When fruit is ripening we of course, are busy preparing for the harvest, but have plenty of time to keep the dairy going at its best. Of course, during the busy shipping season everybody is rushed, but is this not the case on any farm whether a single or combination place? We manage to take care of

HAMILTON MADE

Spraying HOSE

is strong enough to stand any pressure of power or hand pumps and lasts indefinitely. Is much cheaper (because of long service) than the cheapest priced hose, much better than any other's best.

Every length will stand 600 lbs., guaranteed for 300 lbs. working pressure.

½-Inch.....15c per ft.
⅜-inch.....14c per ft.

In 50-foot lengths; coupled complete; freight paid.

Vulcan Spraying Hose

Stands 350 lbs., guaranteed for 150 lbs. working pressure.

½-Inch.....12c per ft.
⅜-Inch.....11c per ft.

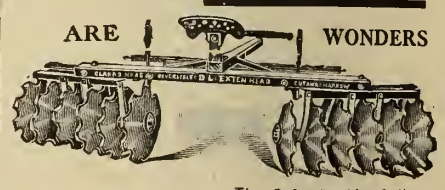
50-foot lengths, coupled complete.

Order from your dealer, or shipped direct from factory, cash with order.

Hamilton Rubber Mfg. Co.
TRENTON, N.J.

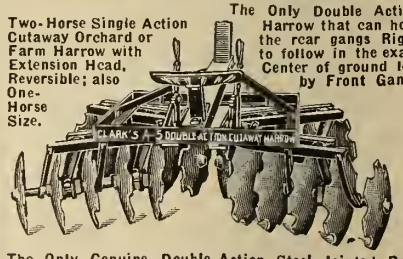
CLARK'S CUTAWAY HARROWS

ARE WONDERS



Two-Horse Single Action Cutaway Orchard or Farm Harrow with Extension Head, Reversible; also One-Horse Size.

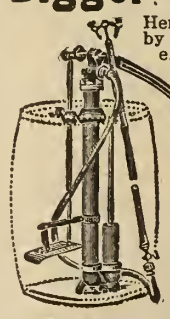
The Only Double Action Harrow that can hold the rear gangs Rigid to follow in the exact Center of ground left by Front Gangs



The Only Genuine Double-Action Steel Jointed Pole Cutaway Harrows. (Can be Extended.) For orchard or farm. Send for catalogue—Fruit Growers Supplies.

E. G. MENDENHALL,
General Distributing Agent for the West
Box 300. KINMUNDY, ILLINOIS

Bigger Fruit Profits



Here is a spray pump invented by fruit growers. It was our endeavor to secure the best spray pump to use on our 300 acre fruit farm that produced the

ECLIPSE SPRAY PUMP

It overcomes every defect found in other makes—it has proved itself best in actual work. Put an Eclipse to work on your trees and earn bigger profits. Write for our fully illustrated catalogue. It tells why you should spray—and why you should do it with an Eclipse. It's free. Write to-day.

MORRILL & MORLEY MFG. CO., Benton Harbor, Mich.

Don't Wear a Truss

FREE

STUART'S PLAS-TR PADS are different from the truss, being medicine applicators made self-adhesive purposely to hold the parts securely in place. No straps, buckles or springs—cannot slip, so cannot chafe or compress against the pubic bone. The most obstinate cases cured. Thousands have successfully treated themselves at home without hindrance from work. Soft as velvet—easy to apply—inexpensive. Awarded Gold Medal. Process of recovery is natural, so no further use for truss. We prove what we say by sending you Trial of Plapao absolutely FREE. Write TODAY.

TRIAL OF PLAPAO
Address—PLAPAO LABORATORIES, Block 220 St. Louis, Mo.

the cows and the milk, run the separator and the churn and have never yet allowed any of our fruit to go to waste.

"I find that a small gasoline engine is a great help in the matter of operating the separator and the big churn. This will do the work of two or three men and do it more quickly. We also use the engine to run the silage cutter and the feed cutter in the barn and in this manner save as much time of the men as possible.

"So far as my experience goes I know of no combination that will work better than dairying and fruit growing, although I may say that I believe we could add poultry and bee-keeping with profit. However, we have about all we can attend to at present and do not intend to extend our operation beyond our present limitations for a few years at least. I know of many orchardists who could just as well as not run a small dairy of ten or fifteen cows in connection with their fruit work and at very small increased expense. If properly managed it will pay big, besides having the advantage of providing the means to employ help all the year around, an advantage which I consider to be a very important one."

Spraying Hints for Beginners.

Know what you must spray for, then do the work right. Don't expect any one spray material to be a universal remedy.

A fungous disease cannot be controlled by spraying with an insecticide.

Spray, don't squirt. A tree that is well sprayed is worth a dozen that are sprinkled. Remember that much of the effectiveness of spraying is lost through improper application.

When making the first application of poison for the codling moth use a coarse nozzle, high pressure and fill every calyx.

Get after San Jose or other orchard scales with lime-sulphur or soluble oil before the buds begin to swell.

The time to make the second application for the codling moth is when the eggs can be found on the foliage and young fruit. If you do not know what a codling moth egg looks like or where to find it read page 10 of the January Fruit-Grower.

Get your spraying equipment in good order several days before you must begin spraying.

Be sure that the engine and pump are working perfectly. Valves may need repacking, and this takes time, hence the importance of giving the machine a thorough trial before time to spray.

Adopt a certain kind of nozzle for each application, and then stick to that one kind.

If several spraying machines are to be used, it is a great convenience in making repairs to have all of the machines of the same make. Broken parts are then interchangeable.

Test the spray hose several days before needed for spraying. Try it with the highest pressure you will use. If it bursts easily or leaks, make the needed repairs in it, or get a new hose. It will save delays at a critical time.

When spraying, if showers come and wash off the poison, spray those trees a second time.

Spray your trees whether they have a crop or not. Spraying in off years is just as important as in years of heavy crops.

Healthy foliage held late in the season enables the trees to build stronger buds for the next crop.

The fungicidal value of lime-sulphur is increased by the addition of arsenate of lead.

If a cold wet spell comes when apples are in bloom, spray with bordeaux mixture to prevent scab. This fungous is always most destructive in a cool, wet spring.

Arsenate of lead which is held over from the year before will be good if it has not dried out and become a hard lump.

A good agitator on the spray pump is as important as a good pump. It prevents settling of the poison and insures the first of the spraying to be as strong as the last.

Strain all spray materials through a good, fine strainer. It avoids clogged nozzles and wasted time.

If you don't know what you must spray for or what material to use, write to the Fruit-Grower or to your state experiment station.

Be sure that all of your hose couplings are of the same size so that any two lengths may be coupled together.

For orchard spraying a three-eighths or half-inch hose is best, and in lengths of fifty feet.

Do not expect satisfaction from bordeaux mixture that has stood for as much as twenty-four hours. It deteriorates quickly.

When done spraying each day, run some clean water through the pump, to wash out the spray mixture and avoid corrosion of the working parts.

Don't get the idea that you cannot obtain satisfactory results from spraying just because your neighbor failed.

The Electric Motor on the Farm.

Wherever electric power is available, the electric motor is ideal for driving farm machinery. It is ideal because it is simple and strong in construction, easy to operate and very reliable in service. Of the many kinds of electric motors, the polyphase induction motor is the most simple and should be used, if possible. To start the motor all that is necessary is to close the switch or throw over the starting handle and the motor comes up to speed almost instantly. Day or night, hot or cold weather, high or low altitude, the electric motor is always ready for instant service, and capable of delivering its rated horsepower.

For these reasons the use of the electric motor on the farm is rapidly increasing. There are many large farms in the United States using electricity for light and power. One of the largest of these is the 5,160-acre farm of Mr. W. H. Miner, New York. On this farm there are two hydro-electric plants delivering electricity to twenty-five motors, in sizes from one-half to twenty-five horsepower. Electric motors are used in the dairy, grist mill, ice plant, laundry, in fact wherever a motor can be used to advantage. Many examples of small farms can be cited where the electric motor is doing the work of one or more men.

As the great water powers and coal fields of Colorado and adjoining states are developed, electric power lines will be within the reach of the great majority of farms. The Northern Colorado Power Company has already extended its system so as to serve farms within its territory. According to a statement recently published by Mr. C. H. Williams, general manager of the company, there were fifty-seven electrically driven pumping plants delivering water for irrigation connected to this system in the season of 1910. Many of these rural patrons use electric light in the farm buildings and use the electric motor for other purposes than pumping.

Where the lines of a large power company are within reasonable distance it is best to buy electric power from the large company. Where this cannot be done, it is entirely possible to install a private power plant. If water power is to be had it may be used to drive the electric generator. If water power is not available, a gasoline engine generator set combined with a storage battery makes a very satisfactory plant. These complete power plants are now on the market at a reasonable price and are very satisfactory.

F. A. DeLAY.

Colorado Agr. College.

The Hardie Sprayers

The Sprayer That is Free From Experimental Risk

5,000 Hardie Power Sprayers are in use Today and over 25,000 Hand Outfits

The **Hardie** is found in the best orchards of this country. There is a reason and we want to tell you what it is

We want to tell you about our Free Trial Offer. We know what our sprayers will do and want an opportunity to show you. We take all the risk, you take none. Our 61-page catalogue is the most complete spray pump catalogue ever issued. Our booklet entitled,

"SPRAYING"—How, What With and What For—

is full of things you ought to know. These publications are ready for mailing and are free for the asking. **Write today.**

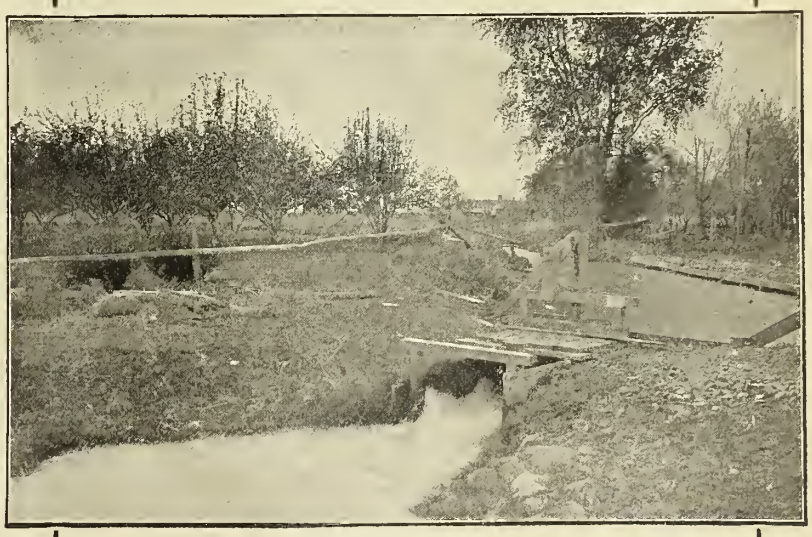
THE HARDIE MFG. CO., Main Office and Factory HUDSON, MICH.

UTAH

THE WAY TO REACH the Fertile Irrigated Valleys of

Colorado, Utah and New Mexico

The Cream of the United States



COLORADO

IS BY WAY OF

The Denver & Rio Grande Railroad

"The Scenic Line of the World"

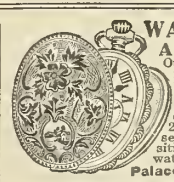
Valleys in COLORADO	Gunnison	Valleys in UTAH	Gunnison
Arkansas	Uncompahgre	Green River	Uintah Basin
Animas	North Fork	Price River	Valleys in NEW MEXICO
Eagle River	Shenandoah	Strawberry	San Juan
Roaring Fork	Paradox	Utah	Chama
Grand River	Montezuma	San Pete	Espanola
	San Luis		

CHOICE OF TWO SEPARATE AND DISTINCT ROUTES TO THE WESTERN SLOPE

Special Rates for the Homeseeker and Settler via RIO GRANDE to All Points in the above mentioned sections. For free descriptive booklets, folders, etc., apply to Frank A. Wadleigh, General Passenger Agent, Denver, Colorado.

NEW MEXICO

IRRIGATED LANDS



WATCH, RING AND CHAIN FREE

Our American made, stem wind watch beautifully designed case, factory-tested, guaranteed for 5 years, and this latest style double heart signet ring are given to boys and girls for selling 20 packets of high grade art post cards at 10c a packet. Order 20 packets to-day. When sold send us $2.00 and we will positively send you at once the watch, ring and chain.

Palace Mfg. Co., Dept. 79 Chicago

Another spring has come and again the thoughts of the small fruit grower is centered on the planting of new fields and the selection of the most profitable varieties. The drouth of last spring and summer proved this: that old strawberry beds cannot be depended on for the certain income that may be expected from the new or year-old beds.

Last spring I had counted on the crop for this year being equal to and probably better than that of 1911, which was the first crop, but so severe was the drouth that most of the old plants died and the whole bed was plowed up as not worth saving. On the other hand, newly set beds felt the drouth very slightly and the plants were able to make good matted rows.

On other occasions old beds have failed to respond vigorously to renovation methods and have come through in a feeble condition with numerous vacancies in the rows. It is only the unfruited beds, therefore, that we can feel sure about and enough new land should be set each spring to insure us against a failure of the old plants.

The new catalogues for 1912 have been coming in and it is interesting to look through them and see how varieties are lined up for the new year. Among strawberries there are very few debutantes for new honors, something quite unusual. We find very much the same list that we did in 1911.

Equally interesting is it to observe the process of elimination that is constantly going on. I suppose this is forced upon nurserymen by a falling off in the demand. Among the newer sorts the Chesapeake seems to be establishing itself more and more firmly in the good opinion of growers the country over. Undoubtedly it owes most of its popularity to its handsomeness and superior quality, and these it possesses beyond question. There is a temptation, however, to press its claims too far and this is done, I think, when it is claimed to be as late as the Gandy and larger, firmer and more productive. I do not think it runs as large as the Gandy though it averages well. I think it is not firmer, but will admit that it may be more productive. It begins to ripen several days before the Gandy, and therefore, is not quite as late, for the season of a berry should be determined by the time it begins to ripen. The Chesapeake should be heartily welcomed by the strawberry world because the market is demanding better quality berries.

Please the public palate, and you will have the public for a willing and eager customer. We already have too many unpalatable sorts that can only be eaten with pleasure by smothering them in sugar. Customers who buy and then do not find their anticipations realized in the eating, will be slow to buy again. Even with good quality berries the urban consumer is at a great disadvantage, for the most of what he buys has been picked green to stand the shipping of perhaps several hundred miles and after this the boxes often stand for days in some grocery store, the quality all the time deteriorating.

Some Eastern growers report that the Chesapeake is a poor plant maker, but that cannot be said of it here. It made a fine, even and regular matted row, though plants were set at the usual distance of three feet apart.

The King Edward is a new variety that is worthy of trial. Here the drouth interfered with its perfect maturity as well as with most other sorts that were not quite early, but it was very promising in its strong and finely-colored plants and in its large, smooth, firm berries.

KING EDWARD.

The Highland is another kind that I have recommended because of its record here. Its plant was the largest in the field, while in quantity of large berries it excelled all the other varieties. I believe it will be found quite adaptable to varying soils and climates and that it can be planted with confidence.

Another kind that I should not omit from spring planting is the Mellie, a second early, and tremendously productive of fine, glossy berries that are very attractive in the box. I have had it on trial for several years and it has never failed to be among the best. Last year it won additional favor by proving to be one of the best drouth resisters.

The Early Ozark merits trial. It is not an excessive runner-maker, like most of the earlies, and its plants are models of thrift and fine color. At blooming time the row is white with masses of snowy flowers. I have before described how it did not fulfill expectations last season in its fruit

Fuel for Country Homes
Light for Country Homes

Imprisoned in Crushed Stone

And any country home owner can unlock the prison—with an ever-ready magic key made of nothing but plain water.

Touch the water-key to the stone prison and the miracle takes place.

Instantly and rapidly the stone changes into slacked lime—at the same time releasing great quantities of gas right before your eyes.

CRUSHED STONE

The gas is Genuine Acetylene—a perfect cooking fuel for the kitchen range and an unrivaled illuminant wherever light is needed. Anybody can use the water-key to release from its stone prison, Acetylene in any quantity required.

It is only necessary to regulate the release—and make only just enough gas to supply the stove or lights while they are actually in use—no more, no less.

COOKING

The process is mechanical — so much so and so simple that it is always left entirely to a little automatic tank-like machine.

With but a few minutes' attention once a month, this machine sends gas as required direct to the kitchen stove and to chandeliers and fixtures located in every room in the house, as well as the barns and all the outbuildings.

Such machines are so nearly perfect and so thoroughly reliable that there are no less than one hundred and eighty-five thousand of them installed on farms in this country alone.

In every case the machine is set up in a few hours in the cellar or outbuilding and connected with concealed pipes without injuring walls or floors.

Thereafter the housewife has the pleasure of cooking her meals in half the time on a fire that she can instantly turn on or off, up or down, with the twist of her wrist.

While the whole family can enjoy and be proud of a home lighted throughout with brilliant, pure white light shining from handsome brass or bronze fixtures.

For years our millions of city cousins who use gas for lighting and cooking have had all the best of it.

Now the tables have turned, for this rural gas "Acetylene" is ten times richer than the best city gas—is not poisonous to breathe and makes light even cheaper than kerosene.

We have several free books telling how the power of Niagara Falls is used to make this wonderful gas-producing stone.

LIGHTING

How the stone is distributed from warehouses all over the country under the trade name of "Union Carbide."

Why Union Carbide won't burn; how it can be stored as easily as coal; how Acetylene Light has been used to grow plants on a big scale, and how all the lights on a farm can be fixed to light with the pull of a small brass chain without matches.

We will be glad to send these books free, together with an estimate as to how little an Acetylene plant will cost for your home.

Just write us how many rooms and how many buildings you wish to light and receive our reply by return mail.

Address your letter to Union Carbide Sales Co., 126 S. Michigan Blvd., Chicago, Ill., Dept. C. — 49

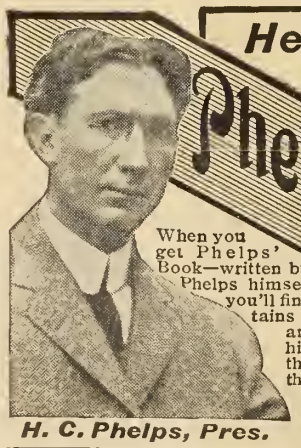
$29.50 Buys This Elegant Top Buggy.

WARRANTED FOR Five Years.

Retail Price $60.00. Buggies, Surreys, Spring Wagons, Farm Wagons. We have cut out our Jobbers, our Wholesalers and our Retailers and offer YOU their profit. Write today for our

Free Catalog and Delivered Prices.

Mutual Carriage & Harness Mfg. Co.
Station 35 H East St. Louis, Ill.


H. C. Phelps, Pres.

When you get Phelps' Book—written by Phelps himself—you'll find it contains more styles and kinds of vehicles to select just the one you want from than you could see in ten Big Towns—or in 25 Dealer's Stores. A big line of Auto Seat Buggies—Surreys—Carriages—Runabouts—Driving Carts—Spring Wagons, etc.—*made to order*—with any choice as to finish—trimmings, upholstery, etc., all the quality in—all the needless jobbers' and dealers' profits out—just what you want—when you want it—not what some dealer happens to have on hand.

Here's Your Biggest Selection of Buggies In America

Phelps Says to Write Him a Postal

He Pays the Postage on His Big Book to You

PHELPS, the biggest personal buggy maker in America, has all his latest styles ready to show you in his big 1912 book. All new stock. Better values than ever this year in Split Hickory Buggies.

Not a single old shopworn job in Phelps factories. Get his book and you be the judge.

Saves You All Middlemen's Profits

Of $25.00 and Up, According to What You Want

He will save you this money on price and send you a better *made-to-order* buggy because no middlemen share what you pay for a Split Hickory. Phelps' wholesale price to you satisfies him because of his large volume of sales. He proves this to you in his book. Shows you by map of states just where 150,000 Split Hickories are being used. Tells the names of owners near you if you wish to write or see them. So send for the book—FREE. Then decide.

H. C. Phelps, Pres., THE OHIO CARRIAGE MFG. CO., Sta. 46, Columbus, O.

crop. Just how much of this conduct was due to the drouth I cannot say, but I do know that the Ozark fell far behind the Mellie.

The extra-early Gill is the most productive of its class, and its berries run the largest for the first and second picking, but it is too soft to ship far. It should have rich soil.

The Fendall was among the promising ones of last year, though it had its defects along with its merits.

So much for some of the newer kinds. Most growers have their favorites among the older varieties. I should like to hear from someone who has tried the Joe, which for years has proved itself the finest mid-season berry on this place. I am greatly disappointed that this berry has not come into general popularity.

Missouri. L. R. JOHNSON.

A Venture in Strawberry Culture.

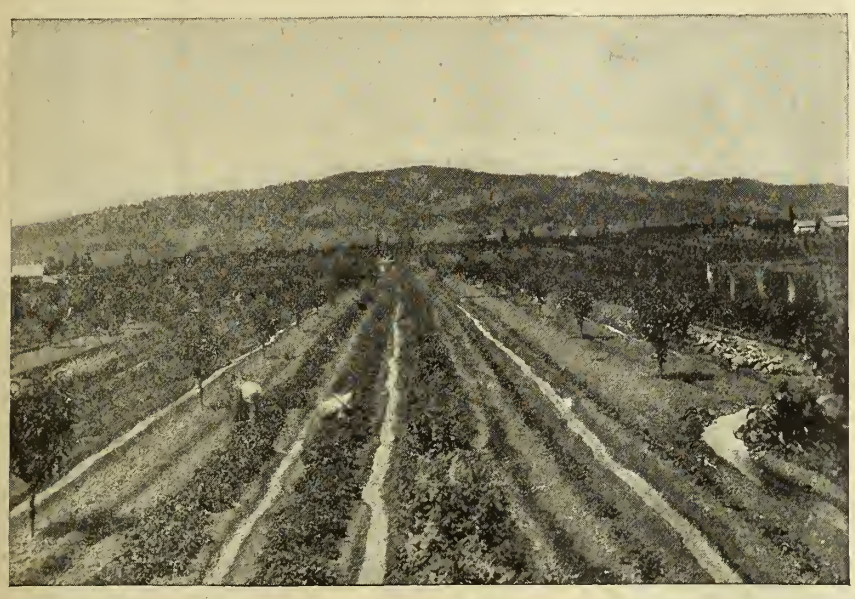
We were told that there was no money in strawberry growing in this place, since it had been tried by different people and had in every instance proven a failure, because the large growers in other states always furnished our market with all of the berries they could handle. It was further claimed that this imported fruit was on sale before the home-grown berries began to ripen and, last but not least, that these shipped-in berries were much larger than those grown in this part of the country.

In spite of all of this we tried a few hundred good strawberry plants, setting out about a thousand in 1908. These plants made a good start, then the drought came and killed about half of them Before the dry weather came we hoed the plants twice and cultivated the soil between the rows once. After this they were badly neglected, nothing more being done except to cover the patch with straw late in the fall. The plants that were left after the drought were more or less stunted, but came through the winter in good condition.

We did not expect much of a crop, but to our surprise we picked the largest, and finest crop of berries ever seen in this section. Many of the berries were the size of a hen's egg and of excellent quality. The William Belts were the wonder of the neighborhood. however we were fully aware that even larger berries could be grown on the same kind of soil, even though the soil on which they were growing was a thin clay, and without fertilizer of any kind.

Disaster Came.

We sold over five bushels of berries from that little patch besides having all that we could make use of for the table and canning purposes. Neighbors rushed in and wanted to buy far more berries than we had for sale. They insisted upon going into the patch and do their own picking. This they were allowed to do, with disastrous results. They were intent upon getting the best of the berries, and therefore seemed to care very little whether the plants were destroyed or not. As a result of this about half of the plants were badly damaged. After this the patch was not cared for as it should have been. The larger



STRAWBERRIES AND OTHER SMALL FRUITS IN A YOUNG IRRIGATED ORCHARD IN THE SPOKANE VALLEY, WASHINGTON.

weeds were up-rooted and the tops of the plants were mowed off later in the season. This nearly finished the work of destruction. Drought followed this, and what few plants were left nearly died from the dry weather.

I am telling all this merely to show what ill treatment strawberries can endure and still exist. That fall the patch was not covered with straw, and the soil was much in need of manure. The plants that started late in the season were still small. So in order to give these plants a "boost," we covered the entire bed with sheep manure, aiming to have it not less than an inch deep. The manure was very dry and finely pulverized, and no other covering was needed.

The following year we had enough berries for home use but not enough for the neighbors, and after the few berries were picked nothing further was done with the patch that year. But as there was a good deal of rain that summer, thousands of runners grew and made plants, and not a single runner or plant was disturbed. By fall the patch was a solid mat of vines.

Better Methods Adopted.

The patch was covered with straw that winter, although not very badly needed, as the foliage had been very dense. In the spring, when the mulch was removed we found that mice or moles had destroyed a great many of the plants by cutting the roots, but enough remained to enable us to set out a new patch, and leave plenty of fruiting plants in the original bed. About two thousand of these new plants were set out as soon as the ground was dry enough in the spring to be worked. Good, strong plants only were used for this new setting. After this was done the old rows were removed, and enough good plants left between to form new rows. This practically renewed the plantation.

The drought of last summer set in early in the season and it seemed that there would be no chance whatever for a crop, but rains came just in time. Last season we harvested the largest crop that this old patch has ever produced, and likewise the largest berries. We anticipate another fine crop next spring.

The varieties which we have planted are Climax, William Belt, Brandywine, Excelsior and Clyde. This experiment has been of some value to us. It has convinced us, as well as others that good strawberries can be grown here, and that they find a ready sale. We have sold at least 100 bushels during the past season without leaving the place. ANNA WADE GALLIGHER.

Ohio.

Some of your neighbors need The Fruit-Grower. Send us their names and we will send them sample copies. Then you can easily secure their subscriptions. Do this missionary work for your neighbors' good.

Comparison Sells More Chalmers Cars Than All Our Advertising

The farmer wants the car that has the most features designed for *his* convenience, *his* safety, *his* economy and *his* pride of ownership. He compares cars; he weighs one against another.

Some cars seem to be built only to please the builder; some for use only on city boulevards. The self-starting Chalmers "Thirty-Six" has been built to please the buyer—to meet every condition of road and weather. It is bought by men who have compared it with other cars.

If you weigh the Chalmers "Thirty-Six" with any other car and consider them point by point, you will find it the ideal car for farm and town use.

Here are the points which make the Chalmers "Thirty-Six" the most popular car of the year:

1. **Chalmers Self-Starter**
   Does away with cranking. Simple, safe, efficient, air pressure type.
2. **36"x4" Tires—Demountable Rims**
   Insure ease of riding and rob punctures of their terrors.
3. **Five Speed Transmission—Four Speeds Forward and Reverse**
   Affords utmost flexibility of control.
4. **Long Stroke Motor**
   Maximum power at low engine speed, splendid pulling, longer service, greater quietness.
5. **Dual Ignition**
   Simplest ignition system yet devised. Nothing equals a magneto for furnishing perfect ignition.
6. **Dash Adjustment for Carburetor**
   You can get the proper mixture for varying weather conditions without getting out of car.
7. **Genuine Cellular Radiator**
   The sort you find on highest priced cars. Perfect cooling, longer life, good looks.
8. **Comfort and Convenience**
   Long wheel base, big wheels and tires, deep upholstering, roomy bodies make for maximum comfort.
9. **Beauty and Style**
   Chalmers symmetry is the kind of beauty that means efficiency. Finish is superb—18 coats of paint and varnish. Choice of three attractive color schemes.
10. **Price—$1800**
    Because of the features listed above and a score of other advantages; because of perfect design, high-grade material, workmanship of the Chalmers standard, the "Thirty-Six" offers the greatest value for the money of any car built.

Call on the nearest Chalmers dealer and investigate this car. Compare it with others at its price—and above. Catalog on request.

Chalmers Motor Company, Detroit, Mich.

The Famous Loganberry

HARDY, ENORMOUSLY PRODUCTIVE

The finest flavored of all the berries. Always brings top prices—be the first to put them on your market. Strong tip plants for April delivery $1 per dozen, $5 per 100 delivered prepaid to your post or express office. *Special prices on 1,000 lots.*

Santa Clara Valley Nurseries

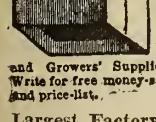
References, this Publication GILROY, CALIFORNIA

The CLEANEST CUT—BRIGHT, ATTRACTIVE— OUR

Western Soft Pine FRUIT BOXES

DON'T SPLIT, LIGHT, STRONG—Nail easy. Send on post card your name, address, kind and quantity wanted. Then we will send you sample of wood and prices, your station.

Washington Mill Company
SPOKANE, WASHINGTON



Save Money on Berry Boxes and Baskets

Fruit and Vegetable Packages and Growers' Supplies of all kinds. Write for free money-saving catalogue and price-list.

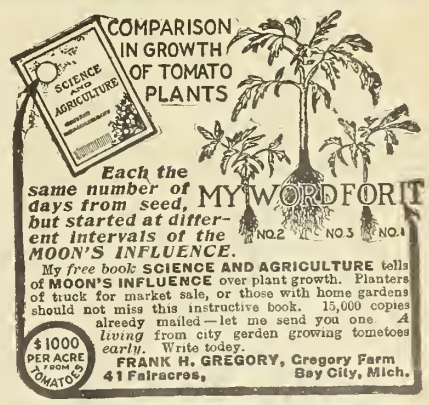
Largest Factory of its kind in the country.
NEW ALBANY BOX AND BASKET CO.,
Box 104 New Albany, Ind.

BERRY BOXES

CRATES AND BASKETS, CHERRY, PLUM AND APPLE BOXES, CLIMAX BASKETS, BIG OR SMALL —AS YOU LIKE THEM.

We have the best equipped mill in the Northwest, and manufacture the Ewald Patent Folding Berry Boxes, the only folding berry box made of wood veneer that gives satisfaction. A liberal discount on early orders. A postal brings our Price List.

FRUIT PACKAGE CO. CUMBERLAND, WIS.



Each the same number of days from seed, but started at different intervals of the MOON'S INFLUENCE.

MY WORD FOR IT

My *free book* **SCIENCE AND AGRICULTURE** tells of **MOON'S INFLUENCE** over plant growth. Planters of truck for market sale, or those with home gardens should not miss this instructive book. 15,000 copies already mailed—let me send you one. *A living* from city garden growing tomatoes *early.* Write today.

$1000 PER ACRE FROM TOMATOES

FRANK H. GREGORY, Gregory Farm
41 Fairacres, Bay City, Mich.

Summer & Fall Bearing STRAWBERRY PLANTS

We are large breeders and our plants bear loads of luscious berries from July until winter. ONE PLANT FREE for testing, or send 10c for mailing expense and get a pair of fine MALE and FEMALE plants. Write to-day.

THE GARDNER NURSERY COMPANY
Box 217 Osage, Iowa

FREE BOOK! to GAS ENGINE OWNERS
Write us and we will tell you how to overcome your IGNITION TROUBLES. Let us explain to you how to double the efficiency of your engine and save money. MOTSINGER DEVICE Mfg. Co., Mfrs. of Ignition Specialties, 83 Scott Ave. Lafayette, Indiana, U S A

OPEN HEAD PRUNING

For some time the writer has been desirous of giving his ideas and experience on pruning, but has refrained from doing so for lack of authoritative approval of his methods. This obstacle has been removed however, by two papers from very able experts of other states before our State Horticultural Society at Harrisonburg this winter, who approved practically in detail the method herein set forth.

My object is not to improve on these papers, but rather to confirm them with reference to our own local conditions, and my own personal experience.

The average orchard as we find it today is not trained in a form to produce the best and most economical results, either as to the amount of fruit produced or as to the best quality.

In the first place the trees in our older orchards are in most cases headed too high. It is not usually advisable to change this however. Secondly, they are allowed to grow too tall to be profitably worked. The height of the trees can be reduced and the method of pruning greatly improved upon. The errors as we find them are mainly two: On the one hand the tops have been allowed to grow too thick from an almost total lack of pruning. On the other hand they are often thinned out too much, forcing the fruiting wood near the ends of the branches toward the tops or the trees. The result of either method is equally pernicious.

Open-Head Pruning.

Those who have had experience generally recognize the fact that if the tops are more than 15 to 20 feet high the trees cannot be sprayed nor the fruit handled to the best advantage. This method has brought about the introduction of the open-head method of pruning now practiced on the new orchards of the West, and of which we now wish to speak, with reference to the old orchards of the East. As a result of this form of pruning we have the cut-back orchard, or as Mr. Drew says, we prune down those trees which other people have pruned up.

Most orchardists and some horticulturists do not advocate the cutting down of high trees on theoretical grounds. They do not believe that the wounds will heal or that the desired results can be obtained. We know now by actual experience that these objections have been overcome with perfectly satisfactory results, even outstripping our highest expectations.

It is hard to lay down an exact rule for cutting as the types of trees vary somewhat, but in all cases if the tree be too high to be economically worked it should be lowered by removing the central or vertical branches at the crotch, or as near the crotch as possible. With trees of upright growth like the Newtown, the resulting form resembles an inverted umbrella, when the tree is dormant. When the tree is loaded with fruit the remaining branches bend down assuming the graceful drooping form, so much sought after by the man who grows the fancy box fruit. In dealing with trees like the Winesap, the principle is the same, but the form of cutting should be varied slightly from that employed with the more upright and closer growing varieties. Sometimes, for example, instead of removing a central or upright shaft from the tree, the removal of one or two side branches which have been allowed to grow too high, will reduce the tree to the desired form.

The practical orchardist needs only to be reminded merely that the two or three story tree can be lowered to the basement without evil results, and he will soon master the correct method of accomplishment. The following general rule, however, may be laid down for cutting:

How to Cut.

As Mr. Surface says, "get into your mind first the form which the tree should assume two or three years hence, and then cut to produce that result," by removing all upright branches to the crotch or to a suitable feeder at least one-third the size of the limb removed, which if loaded with fruit would remain rigid. Thus we tend to produce the open head or inverted umbrella form. As much as possible the cutting should be done on the inside of the tree, so as to push out the side branches to broaden the top. Never remove a fruit spur or small limb from near the crotch of the tree without special reason, as it may bear fruit, and unless it assumes the form of a water-sucker, it can not possibly do any harm. Those who practice this form of pruning deserve to be characterized as "tree-butchers."

Now, when the tree is loaded with fruit the branches droop gracefully in all directions, and the bottom layer or limbs nearest to the ground should if possible touch the ground at the tips, acting as a support for itself, and also for the limbs above, thus dispensing with artificial supports.

As stated above, the theoretical objection most often advanced adverse to this method is one of skepticism, about non-healing, sun-scald, etc., all of which are proven by actual practice to be unfounded and false theories, and the writer challenges an example to the contrary. After having had several years experience in cutting trees of all ages and conditions by this method, and also in top-working (cleft grafting) old trees, we have yet to see a single example of permanent injury from cutting, when subsequently the trees are properly nourished, even when a wood preservative be not used. Paint or coal tar may be used for this purpose if you feel that it is safer, but you will in all probability dispense with this, except for very old and decrepit trees, after a few years experience.

So far as the writer is aware there is not a single disadvantage to this method of pruning, while the advantages are many and manifest:

1. The primary object is attained by bringing the trees down where they can be handled economically.

2. In addition to this they will bear a great deal more fruit per bearing surface. The reason for which is explained thus:

a. The central top of the tree, if left intact, tends to assume the nature of a water-sucker which draws on the remaining branches, but when the top is removed we have the opposite effect; that is, we throw the strength to the side branches where most of the friut spurs are borne.

b. Again, the sunlight is allowed to penetrate to the center of the tree in a more effective way than is possible with the close top, thereby making it feasible to grow the fruiting wood much more thickly. To have this thickly-growing, bearing wood is especially valuable if you wish to grow a high percentage of fancy fruit, and at the same time grow quantity. This is valuable for the following reasons: Suppose your tree has been pruned by the old-fashioned close-head and thin-out method, which forces the bearing wood toward the ends of the branches. As a result you have clusters of apples on the same fruit spur or twig, which makes it impossible to grow first-class fruit because of the law of survival of the fittest, and because of the natural harbor made thereby for the codling moth and for the lesser apple worm, etc. Is it not then infinitely better to have an added number of fruit spurs and bearing twigs, and have fruit singly borne? Perhaps you may grasp the philosophy of my statement more clearly when I say that it is better to have a single apple on each of five twigs, or disconnected fruit spurs, than to have five apples all growing on one twig or spur, when four of the five must be removed by thinning before you can grow a very high percentage of first-class fruit. Do you gather my meaning, when I say that it is better to grow

No-Rim-Cut Tires

(10% Oversize)

1911 Sales—409,000 Tires

Please stop and consider—you men who use tires.

Note how motorists are coming to this patented type.

Last year's output would completely equip 102,000 cars.

Goodyear No-Rim-Cut tires have come to outsell every other tire in existence.

Yet the sale is only beginning. In two years the demand has multiplied six times over.

This year, 127 leading motor car makers have contracted for Goodyear tires.

That's the result of experience.

Men have proved that these tires cut tire bills in two.

Men want oversize tires—men want tires that can't rim-cut—when they cost no extra price.

So, as fast as men learn the facts, they insist on Goodyear No-Rim-Cut tires.

Tire Bills Cut in Two

These are the facts we ask you to consider.

The old-type tire—the hooked base tire—rim-cuts when partly deflated.

Such a tire, if punctured, may be wrecked in a moment—ruined beyond repair.

Statistics show that 23 per cent of all ruined clincher tires have been rim-cut.

No-Rim-Cut tires save that wreck and that worry. They make rim-cutting entirely impossible.

Then No-Rim-Cut tires are 10 per cent oversize.

That means more air—more carrying capacity. It avoids the blow-outs due to overloading.

Under average conditions, 10 per cent oversize adds 25 per cent to the tire mileage.

Our average oversize, measured by cubic capacity, is much over 10 per cent. A recent comparison with five other makes showed it 16.7 per cent.

These two features together—No-Rim-Cut and oversize—under average conditions cut tire bills in two.

No Extra Price

No-Rim-Cut tires used to cost one-fifth more than other standard tires. Now they cost no extra price.

So these features are free. The saving is clear.

Do you wonder that tens of thousands of users insist on these patented tires?

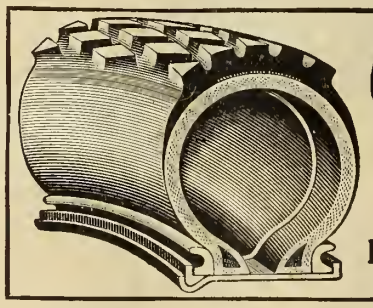
The Final Tire

We have spent 13 years in making automoblle tires.

After 13 years of constant improvement, we have brought these tires close to perfection. It will never be possible, in our estimation, to make a better tire.

These perfect tires—made so they can't rim-cut, made oversize—are the tires which we offer you.

Consider these facts and judge for yourself if it pays men to insist on them.



GOODYEAR

No-Rim-Cut Tires

With or Without Double-Thick Non-Skid Treads

Our new Tire Book is ready. It is filled with facts which motor car owners should know. Ask us to mail it to you.

THE GOODYEAR TIRE & RUBBER COMPANY, Akron, Ohio

Branches and Agencies in 103 Principal Cities

We Make All Kinds of Rubber Tires, Tire Accessories and Repair Outfits (467)

five boxes of first-class fruit on a tree by proper dissemination of the fruiting wood, than to grow one box near the tips of the limbs, and the tops of the trees at the same cost?

Removal of Tops Makes Fruit.

3. Still a third advantage, and one which is contrary to horticultural lore, is this: It has been usually conceeded that winter pruning tends to produce wood, and summer pruning to produce fruit. But the writer has in two or three instances demonstrated that the removal of the tops from thriftily growing trees, ten to twenty years of age, in the dormant period tends to fruit them sooner and more abundantly than could otherwise be expected in three or four more years by the close-head method. The reason for this is manifest, as the removal of the sappy and rapidly growing top gives the tree a temporary check of growth and also throws added strength to the fruit buds on the remaining branches, which causes a profusion of buds to set fruit.

During the past three years that we have been using this method of pruning trees here in Albemarle County we have observed the following facts with reference to the regard in which our method is held by our neighboring orchardists. A few have adopted our method at sight without waiting to see the outcome, others have attempted to approximate to the open-head method. Instead of cutting out the centers to the crotch or to a suitable feeder they simply cut off a foot or two of the tips of the longer limbs. The result is quite evident if you will stop to think what must take place two or three years in the future. As a precaution, I would suggest at this point that if you cannot be practically certain what the future will bring forth you would better for the sake of the welfare of the orchard try it on a small scale at first and await developments. For, when the tips are cut off in this way, the ultimate result is a compound head for every limb that is cut, and after three of four years growth you have a top so thick and high headed that the only remedy is to entirely re-head the trees at the crotch.

4. A further advantage of this form of top is found in the recent tendency to grow for quality rather than for quantity of fruit, necessitating thinning, a process which is well-nigh impossible and certainly, to say the least, laborious on high and close-headed trees, while on the other hand with the modern open-head tree it is a comparatively easy process to thin as well as to gather the fruit.

Those who attended the meeting of our horticultural society this season will recall that these sayings were approved, at least, in principle, by Messrs. Surface of Pennsylvania, and Drew of Connecticut, recording their experiences in their respective states. This last, both in justice to these men of eminence and because "a prophet is not without honor save in his own country."

E. F. COLE.

Virginia.

Winter and Spring Work Against the Codling Moth.

The man who makes the greatest success of orcharding at the present time is the man who is giving the most attention to the control of insect pests in his orchard. While this may not be absolutely true in all cases it is true in the majority of them, at least.

There is no other orchard pest in Colorado that has been responsible for so much damage as the codling moth. While it is true that spraying methods have been entirely successful in controlling it in a great many cases, in other cases such methods have been found inadequate to cope with the tremendous numbers of this pest that have occurred during certain seasons. People have been depending largely upon spraying methods for the last few years and, in most cases, they have given up entirely all other methods that can be successfully used toward reducing the numbers of this injurious insect.

Winter Hiding Places.

The codling moth always spends the winter in the larval, or worm stage, and by destroying them in their hiding places during the winter season, it may be possible to reduce the numbers to such an extent that spraying may not have to be so frequently done. There are a number of different places where these larvae may be found at this season of the year. In the orchard many of them winter over underneath scales of rough bark on the trunks and larger limbs of both apple and pear trees; others may be found about the crowns, close to the surface of the ground. Any rubbish, smudge pots, boxes, etc., in the orchard may serve as hibernating places for these larvae. Very often a crop of apples will be packed in the open in the orchard during the packing season, in which case trees close to where packing tables stand are very apt to harbor a great many larvae. When packing has been done out in the orchard, it is always well during the winter season to examine all trees adjacent to such places and destroy the larvae which may be found either under loose bark or litter on the ground near the trees.

There are a number of tools that may be used in removing the loose bark from the trunks or larger branches, among which might be mentioned a heavy knife, trowel, shovel, hoe or rasp. Any instrument that can be used for removing this rough bark to advantage will serve the purpose. Not only is it necessary to remove the bark, but it is necessary, also to kill the larvae when found. If this is not done, many of those that are scraped from the trunks of the trees will find hiding places where they will live until spring and develop into moths. In the older orchards particularly, trees often have knot holes, or cracks in the crotches which will extend for some distance into the trunks. These knot holes or cracks are always favorite places for the hibernation of the codling moth larvae. Often a great amount of good can be accomplished by filling such places with cement or other material that will prevent the worms from getting within.

Some Arrive Late.

Such places often tend to hold the worms back in their development in the spring of the year. This is a disadvantage in that it tends to string out the brood, thus makng it much harder to control by means of the first spray. If all the worms would develop into moths at approximately the same time in the beginning of the season, it would not then be hard to control them absolutely by means of the first spray, but when many of them, because of hibernating in cool places within the trunk of the tree, are held back until two or three weeks later than the first of the brood develop, it is impossible to meet with the best results from this one spray.

In some parts of the state codling moth has never become abundant enough so that other methods besides spraying have been absolutely necessary. In other places, because of the extensive orcharding, or because of other things that may enter into the problem, this insect has become so abundant that in many cases spraying has failed absolutely to control them, so that a reasonably high percentage of fruit could be harvested free from worms. Possibly, one reason for this is that in those sections there have been seasons when the fruit crop has been very light, consequently spraying has been somewhat neglected. Usually, during such seasons there will be just as many moths as during seasons when there is a heavy crop of fruit, and with little or no spraying, many more of them would develop than during a season when spraying was extensively practiced. This undoubtedly will have an effect upon the next season's crop and the tendency will be for the numbers to be much greater than the previous one.

The mortality of hibernating codling moth larvae varies from one season to another. Two years ago this winter, it was estimated that in the Grand Valley section of Colorado more than three-fourths of the larvae that went into hibernation in the fall of the year lived through and changed into moths in the spring. The next year, probably

Come to Berlin

We'll Pay Your Expenses While Here

Every man who wants a hundred or more trees ought to come to Berlin and see our Nurseries. Such a trip will pay everybody concerned—we are so sure of it that during your entire visit to our Nurseries we will pay your hotel bill, without putting you under any obligation to us. We want you to come even if you are not ready to buy.

What a Visit to Our Nurseries Will Be Worth to You

Few large orchardists buy trees without seeing them. The advantages lie not only in getting trees better suited to their needs, but in obtaining a general line of information on the orcharding subject worth many times the cost of the trip. Our orchards, and the methods used in them, alone are worth coming to see.

Should you be unable to come to Berlin this season, however, we are in better shape than ever before to take care of your orders by mail. Our offices have been entirely reorganized, in order that the "Harrison Service" might be still further perfected. Through this service idea we have been able to greatly extend the scope of our usefulness to fruit growers too far away to visit Berlin.

Harrisons' 1912 Catalogue Now Ready—Sent Free

This book contains the latest information about fruit and ornamental trees. In it you will find all the information you need about varieties, the proper distance apart to plant; how and when to order; how to unpack and handle trees so as not to lose or stunt any; how to trim roots and branches and all other details of planting. You need this book, and we have a copy waiting your directions as to where to send it.

Our Guide Book, "How to Grow and Market Fruit"

A fruit grower's guide book that has met with a warm reception from fruit-interested people. It has almost 150 pages, there are 24 full pages of pictures that help make plain the difficult things. This book tells you what to do and when to do it, and why it ought to be done, so you are not working in the dark. We want agents for this book. Write us for liberal terms.

HARRISONS' NURSERIES

ATLANTIC AVENUE BERLIN, MARYLAND

Valuable farms for sale in Maryland and Delaware—write our Real Estate Department for particulars.

Send us 50 cents for copy of "How to Grow and Market Fruit" and we will forward the book by return mail with coupon good for the amount on your first order of $5.00

Write us about when you can come to Berlin, about how long you expect to stay and we will arrange for you entertainment at one of the local hotels, free of charge to you.

Protect Your Orchard from Windstorms with Evergreen Breaks

On the tenth of last September the owner of a 20-acre orchard turned down an offer of $15,000 for a fine crop of fruit on the trees.

Two days later a windstorm blew off three-fourths of the apples and damaged most of those remaining, so that the whole crop brought only $5,300.

An Evergreen Windbreak costing under $100 would have prevented 90 per cent of those apples from falling—saving $9,700 in *one year*.

Is your orchard at the mercy of the wind? Then it needs a shelter belt as quick as you can grow one. With it you can spray on windy days, too.

We grow more evergreens than any other firm in the world—as well as hardy fruit trees and ornamentals.

Get Hill's 1912 Planter's Guide—free to intending planters. *WRITE US TODAY FOR IT.*

D. Hill Nursery Company, Inc.

Evergreen Specialists

Balsam Street DUNDEE, ILLINOIS

not over half that many lived to perpetuate their kind.

The packing houses in our best fruit sections present a problem of importance that has never been satisfactorily solved. Most of these houses contain myriads of hybernating larvae which should be destroyed by fumigation or other methods. While it may not be possible to get rid of all of them, or even a large percentage in such places, a careful inspection will result in the discovery of a great many which can be killed by whatever means seems best under the existing conditions. GEO. P. WELDON.

Colorado Agr. College.

Hold-Over Blight.

There is a prevailing tendency among orchardists to under-estimate the danger from hold-over blight in the pear and apple, and with this mistaken idea has crept in a certain amount of carelessness in the attention which is given to diseased trees.

The actual amount of active hold-over blight to be found in some of our pear-growing sections is alarming, when we know the facts. The writer has been looking into this question rather carefully for the past two years and finds that not only hold-over cankers are common, but also that under Colorado conditions at least 20 per cent of these cankers on the small limbs and twigs contain virulent blight organisms at the time of blossoming. This form of the disease is easily recognized in the late fall, or better in the early spring, before the leaves start, by the discolored bark which is usually shrunken and cracked. In the springtime, a brownish, milky exudate is frequently seen oozing from these cracks, and a little later in the season bees, ants and plant lice may be found feeding upon this material. This sticky ooze contains millions of blight germs and acts as a virus, so to speak, for spreading the infection wherever these insects choose to carry it. Now, we have quarantine laws to prevent the spread of smallpox virus, with the result that a serious outbreak of this malady is a rare occurrence. If we should be equally diligent in observing the laws of orchard hygiene, it would be only a relatively short time until blight would be a thing of the past.

Those who have combatted blight most successfully tell us that the proper time to cut out and destroy diseased limbs is whenever they appear. If this is done carefully and thoroughly, it is clear that there would be no means for carrying the blight from one season to another but, as has been pointed out, this is not done. And why not?

In the first place, it is an easy matter to overlook blight during the routine pruning unless one has it especially in mind; in the second place, many of us are apt to postpone cutting out blighted wood until the last, thinking that it is merely dead wood and no particular harm will result if it is not removed until the season opens. But remember, that although the wood may be dead, 20 per cent of such limbs contain living blight germs which will bo carried to the healthy parts of your trees. In place of attempting to remove the blighted portions at the time of the regular pruning, a much safer procedure is to set aside a special time for this and do nothing else, for by so doing there is neither the danger of conveying the infection to healthy twigs by the tools, nor the chance of overlooking the disease.

WALTER G. SACKETT.

Colorado Exp. Station.

Blackberries.

There is now a very unusual interest in growing blackberries, not only for home use, but for market purposes. In Southwest Missouri in the strawberry district and adjacent territory, a great many people are contemplating planting somewhat largely. A blackberry is not at all particular of choice as to the soil it grows in; in fact it is much better to not plant on rich land, for the reason that not so much fruit will be produced. A deep, black soil with clay subsoil has been found to produce good results with most varieties. In Southwest Missouri they have been found to do exceedingly well upon red clay soil. Soil that has been used for growing corn and wheat will do very well for blackberries. It should be remembered that they are very hard to kill out, and indeed they have sometimes been found to thrive better, at least to produce an abundance of fruit, when the owner was trying to kill them out by plowing up and burning off the patch.

They should be set in rows at least six feet apart, preferably eight. They need not be set closer than three feet apart in the row, as they will soon spread and form matted rows. In Southern Missouri and Northern Arkansas the blackberries for setting may be propagated at home by taking up roots from old plants, cutting them into pieces two inches long and sowing them in a furrow like peas. These may be grown in the garden and transplanted later. However, this is unnecessary, as the root cuttings may be sown in the first place where they are to be grown permanently.

Blackberries will need some cultivation, particularly the first year. The ground ought to be stirred frequently with a tooth cultivator and perhaps with a hoe. In after years it will be necessary to "back-furrow" between the rows with a small turning plow in the spring and then level down with a cultivator. If the turning is not done the plants will soon spread over all the ground between the rows. The matted rows should be allowed to become as much as two feet wide, but no wider.

Prune in the fall or winter by removing all of the old stalks by cutting them off at the ground. Shorten back the new shoots or the new branches on old shoots by clipping them with the pruning shears. Some people like to pinch out the tops of the young shoots in early summer when they become about two feet high, while others think this is unnecessary.

Varieties.

Early Harvest is not only early in point of season, but is one of the best and most profitable varieties that can be grown. It generally is found to be the best money maker. The only disadvantage is that it is likely to be attacked by the rust. Control this disease by cutting out and burning every rusty plant as soon as it is noticed. This will do the work if attended to carefully; spraying will do little or no good. Other varieties are Erie, which is later than the Early Harvest and also inclined to rust. Eldorado is still better; this last thrives best upon a rich soil; it does not rust. The Early Harvest, it should be added, is particularly good for canning purposes. The Snyder is an old variety which is yet largely planted. It is not good for canning as it cooks down too badly, but it is a good shipper.

It should be borne in mind, if blackberries are grown for the city market, that this fruit cannot be refrigerated. We mean by this that it cannot be shipped in refrigerator cars like strawberries are; blackberries must be shipped by local express.

As to the profit of blackberry growing, I cannot do better than quote a report by Mr. J. M. Dressel of St. Louis County, Missouri: "For the last three years we have had out about two acres, about one-half Early Harvest, the rest Erie and a few Minnewaskie and Eldorado. During the season of 1906 we picked 600 three-gallon trays, which sold at an average of 85 cents per tray, amounting to $498.80, or at the rate of $249.40 per. acre. In 1907 we picked 653 trays which sold at 94 cents, making $613.80, or $306.90 per acre. In 1908, a season that was almost a failure, we picked 181 trays which sold at 90 cents per tray, making $162.90, or $81.45 per acre."

Mo. Exp. Sta. W. L. HOWARD.

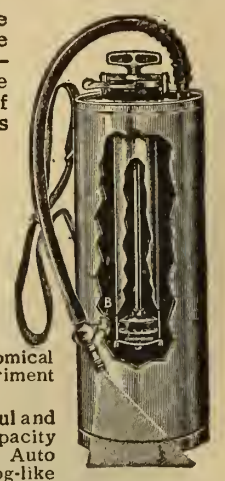
The art of economical irrigation is usually learned only when scarcity of water compels its less lavish use.

The selling of fruit is business; therefore, to do it most successfully, business principles must be followed.

Easier And Quicker Work Surer Results At Less Cost With Brown's Sprayers

Don't Spray Till You Know The New Way

Let us send you free, our complete Spraying Guide, telling about the newest and surest ways of spraying—the best results, quickly and at the lowest cost. Follow the example of 300,000 gardeners and fruit growers who have proved that



Brown's Auto Spray

is the most thorough, durable, and economical sprayer made. Endorsed by Experiment Stations everywhere.

Auto Spray No. 1 is the most powerful and efficient hand power spray made. Capacity 4 gallons. Fitted with Brown's patent Auto Pop Nozzle, it forces a fine mist or fog-like spray or heavy stream to every part of trees, vines and plant. Starts and stops instantly—no waste of solution between trees or plants.

Brown's Auto Spray Gasoline Power Outfits are equipped with a non-heating, light, compact engine. Thoroughly reliable and efficient for very heavy work. Simple, economical, durable and fast working. Pump made of brass, can't rust or corrode—capacity from 50 to 250 gallons. Also large assortment of Traction Power Outfits for all purposes.

Brown's Non-clog Atomic Nozzle for large sprayers, throws powerful stream or fine spray. Keeps working day after day without cleaning—never clogs—a big money maker. Best for all field and orchard work. All Auto Sprays sold on guarantee of satisfaction or money back.

Free Book Brown issues the best Spraying Guide to follow. Write for it whether you want a new sprayer at once or not. Our quality and prices speak for themselves.

THE E.C. BROWN CO., 29 Jay St., Rochester, N. Y

These books free to owners of homes

You want the best plants, trees and shrubs—the best kinds and the best specimens. The climate and soil of western North Carolina are such that on the various elevations may be grown almost every hardy plant or tree. At Biltmore Nursery those advantages are so utilized by skill and care as to produce a strain of plants of extraordinary vigor. To aid planters in making selections, Biltmore Nursery has published four books—one of which will be sent free to any home owner who expects to purchase trees or plants.

"Hardy Garden Flowers"

The illustrations suggest many pleasng and varied forms of hardy garden planting—from the simple dooryard effect to the elaborate attainment. The descriptions are full and complete, yet free from technical terms.

"Flowering Trees and Shrubs"

Many of the best of the trees and shrubs producing showy blossoms are shown, from photographs, as grown in typical gardens, lawns and yards. The pictures and the text present numerous useful ideas for planting home grounds, large and small.

"The Iris Catalog"

Unique in that it is, so far as we know, the only book of its kind devoted entirely to Irises; 16 pages, handsomely illustrated throughout; seven pictures in the natural colors of the flowers. Accurate classifications and variety descriptions.

Biltmore Nursery Catalog

A guide to the cultivated plants of North America. Over two years in the making, and cost more than $1 a copy to complete. Contains 196 large pages and describes more than 300 perennials, 500 flowering shrubs, 325 evergreens, 300 deciduous trees, 200 odd vines and plants. Freely illustrated.

Ask Us For the Book You Need

If you have a garden of perennials, or want one, request "Hardy Garden Flowers." Should you prefer the more showy things, tell us to send "Flowering Trees and Shrubs." In case you have a larger space and can plant extensively of many varieties, we shall be glad to send the "Biltmore Nursery Catalog." Edition of each limited—write today for the one you can use to best advantage.

BILTMORE NURSERY

Box 1135 Biltmore, N. C.

COMPRESSED AIR OUTFITS

First Compressed Air Sprayer Used in Pennsylvania—Large Number Used in Virginia

Your description in the January issue of Mr. Richardson's compressed air sprayer was read with much interest and it certainly is a unique equipment. We beg to differ, however, as to its being the only orchard in the country having such a thoroughly efficient spraying outfit, as I know of quite a number. Compressed air, as a power for spraying, was first used by a Pennsylvania man and later enlarged and improved by a northern Ohio fruit grower to meet the requirements of the commercial orchardist as far back as 1902.

In the northern Ohio peach belt, four miles from the now much-heralded Put in Bay, in one county alone, compressed air has been used since 1902, and we know of more than fifty outfits now in use, and orders which are in for several more for the coming spring work. The first tanks in Ohio are still in operation.

These compressed air outfits have been used in Oregon since 1904, and during the past five years the system has been adopted extensively in Virginia and West Virginia by the leading commercial orchardists, among them being the president of the Virginia State Horticultural Society and the president of the Eastern Fruit Growers' Association. Pennsylvania, New York, Georgia and Tennessee are rapidly following, and I understand Mr. Hale is using compressed air in his Georgia and Connecticut orchards.

In the latest style compressed air outfits the tanks have both ends convex, the liquid tank having a large handhole in one end. The saddles in which these tanks rest are so sawed that the liquid tank is nearer the center of the truck than the air tank in order to equalize the weight; consequently the rig is well balanced. With these saddles notched and resting on 4x4's the whole is easily lifted from the trucks at the end of the spraying season and stored. It looks to me as though placing the tanks side by side would obviate the tendency toward top-heaviness that Mr. Richardson's outfit suggests.

I have been informed of nineteen outfits now in process of manufacture, ordered by a company of New York and Virginia apple growers in which the tanks are to be 10 feet long and 20 inches in diameter, holding 160 gallons, with manufacturer's guarantee of 250 pounds constant working pressure to the square inch, and having a mechanical agitator operated by a crank handle or sprocket geared to the wheel.

In my immediate neighborhood within a radius of four miles, in which there are thirty-seven of these compressed air outfits in use (and only one gasoline engine spray rig) there is scarcely any of the concentrated lime-sulphur mixture used. At certain points within this four mile radius there is a central plant comprising engine, compressor and mixing vats. Here the mixture is boiled, 500 to 1,000 gallons at a time. I drive my 100-gallon outfit (which cost me less than $100) to the nearest plant where my tanks are charged with air and mixture at the same time, the operation requiring ten to twelve minutes after the first charging, for which I pay 15 cents for air and 2 cents a gallon for the liquid.

By this process my spraying expenses are reduced to a minimum as I am relieved of the expense of engine, compressor and spray-house equipment. The central plant supplies from 35,000 to 40,000 gallons each season to my neighbor orchardists and we all consider ourselves fortunate indeed, in having our spraying problems so easily and cheaply solved.

This co-operative central charging station can be operated and maintained at small cost in any orchard community.

We are using a spraying spar or "tower" with twelve nozzles, which was patented in 1904 by the same neighbor fruit grower whose experiments and inventive genius fathered compressed air as a power for spraying to its present proportions of practical efficiency. A. I. SHARP.

Ohio.

A COMPRESSED AIR SPRAYER.
—Photo by Courtesy of W. H. Owen Co.

Steel Wheels for Arid Climates.

Those who live in arid districts frequently have serious trouble because of the fact that wagon wheels dry out to such an extent that tires drop off and wheels fall apart. Such persons will find it advisable to use metal wheels, and avoid rattling spokes and loose felloes; such persons may profit by the experience of Mr. J. S. Gray, formerly of Ohio, who took a long wagon train across the Nubian Desert in Africa. This gentleman succeeded where others had failed, simply because he used American-made steel wheels, made by the Electric Wheel Company, Quincy, Ill., and he had no trouble whatever. Camels were used to draw the wagons, and the trip was made without a mishap. There's a suggestion here worth while for fruit-growers in the arid districts, where wagons often break down just when needed.

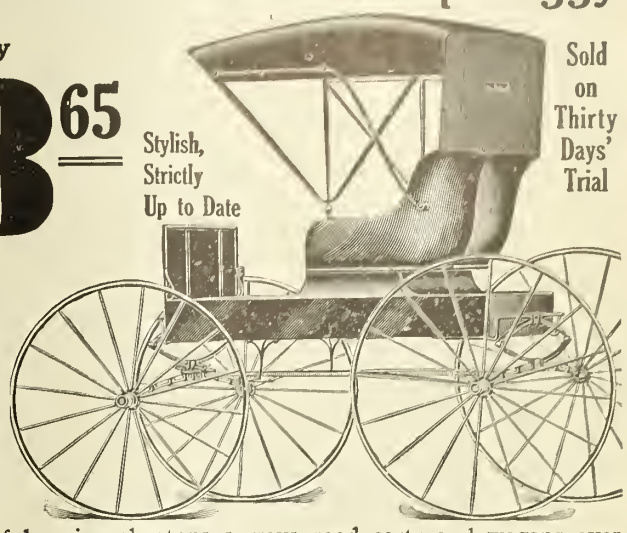
SAVE DEALER'S PROFIT
FREIGHT PAID
Guaranteed For 5 and 7 Years
Made fresh to order. Free trial offer. All your money back if not satisfactory. Free paint book and color cards, tells all about paint and how to use it.
WRITE TODAY.
O. L. CHASE PAINT COMPANY
1220-24 Liggett Building
Department 39 St. Louis, Mo.

A Twin Automobile Seat Top Buggy

For Only
$33.65

Stylish, Strictly Up to Date

Sold on Thirty Days' Trial



This is just one of the hundred great bargains we show in our 1912 Price Reduction Vehicle Book, the greatest printed vehicle showroom in America, describing in detail the most stylish, up to date line of buggies, phaetons, surreys, road carts and wagons ever manufactured.

If you have the slightest intention of purchasing any vehicle, by all means write at once, today, for this great vehicle book. It's free. All you need to do is to ask for it. This book will positively offer you the greatest values and very latest styles at the lowest prices ever quoted on strictly high grade vehicles. We are able to give you these great special bargain prices

BECAUSE, we own and operate the largest vehicle factory in the world—61,000 vehicles built in this factory last year—over 20,000 more than were made by any other concern in the United States. Naturally our factory cost is much lower than that of any other concern, due to our exceptional manufacturing facilities.

BECAUSE, we sell DIRECT from our factory to you. We cut out all dealers', agents' and jobbers' profits. We aim only to secure ONE PROFIT, the small factory profit, and consequently we ACTUALLY SAVE YOU from $20.00 to $50.00 on ANY VEHICLE of ANY KIND.

Saving money for the buyer in every conceivable way is our principle of doing business, and that is the secret of our tremendous success.

GET OUR 1912 PRICE REDUCTION VEHICLE BOOK No. 96F68

Send postal or letter today, at once, for our large 1912 PRICE REDUCTION VEHICLE BOOK No. 96F68 SENT FREE, and contains ONE HUNDRED GREAT BARGAINS. Simply ask for it and we will send it to you prepaid by return mail.

SEARS, ROEBUCK AND CO., CHICAGO, ILL.

Horse Secrets and Horse Sense

A Liberal Supply of Both for a Dollar

The "Horse Secrets" are told by Dr. A. S. Alexander, the celebrated veterinarian, in a book of that name. This book is the only one in existence which exposes all the tricks that unscrupulous horse dealers and "gyp" traders are up to—such as "shutting a heaver" and "plugging a roarer," the "Bishoping" Trick, the "Widow Dodge" and all the other ways of "fixing" a horse. Saves you from being "stung" by professional dopesters, and gives you the laugh on these slick scamps. Also contains many valuable secrets for feeding and conditioning stock, curing evil habits, etc.

Seven editions of "Horse Secrets"—75,000 copies in all—have been distributed by Farm Journal in the past two years, to the great discomfiture of horse-trading swindlers. We will send out many thousand more this winter.

"Horse sense"—as applied to farming, fruit growing, poultry raising, stock breeding and household economy—is imparted through the pages of Farm Journal.

Edited by men who, most of their lives, have had roosters for alarm clocks and learned farming by making a living at it, there's no flub-dub or hot-house theory in Farm Journal—just sound, practical, common-sense teachings which are coined into cash by those who study and apply them.

If you ever buy, sell, trade or own a horse, you need "Horse Secrets," and in whatever branch of farming you are engaged you need Farm Journal. They will save and earn you many dollars—yet

For only $1.00, we will send you "Horse Secrets," postpaid, at once, and Farm Journal every month for four years.

This is the most liberal combination offer (quality of book and paper considered) ever made. You'll do wisely to take advantage of it to-day.

If you order promptly, we will send, absolutely free, "Poor Richard Revived"—our splendid new Almanac for 1912.

FARM JOURNAL, 135 N. Clifton St., Philadelphia

OHIO HORTICULTURISTS

State Horticultural Society and Ohio Apple Show Held Meeting in Marietta Jan. 24-26

At Marietta, Ohio, the meeting of the Ohio State Horticultural Society in connection with the Ohio Apple Show, was held January 24th and 26th. Marietta is in Washington County and is the oldest permanent settlement in Ohio and the northwest territory and is the oldest fruit region in the state. Washington County used to produce more apples than any county up to about twenty years ago, when the crops failed for lack of spraying and lack of available fertility and the land owners turned to market gardening, not growing enough apples for home consumption till the last two years. The crop of 1911 was nearly 100,000 barrels.

This change was brought about by F. M. Ballou being sent by the Ohio Agricultural Experiment Station down there to induce a man not to cut down an old Rome Beauty apple orchard, but let him demonstrate what proper spraying would amount to. When harvest time came around a meeting was held in the orchard and people had an eye-opener. The next year other orchards were used to test the results of spraying and in 1911 tests were made with fertilizers in connection with spraying, thinning of the fruit, etc. A summer field meeting was held in the vicinity and old Washington County took on a new lease of enthusiasm and decided to prepare for the winter meeting, and have the apple show put up a large fund to be used for premiums and expenses. The result has been a delightful and profitable time for those who attended the meeting. All agree that such a sight has never been seen before in the state in the display of fine apples—large, perfect, red, striped, yellow, attractive beyond description and in large quantities. Plates, trays, boxes, baskets, barrels and other forms added to the attraction.

More than a thousand entries were made and over a thousand dollars were offered in premiums. Prof. O. P. Kinsey of the famous normal schools of Indiana, who owns a large fruit farm in southern Ohio, sent in $100 to be given those who made creditable exhibits, but failed to get some of the premiums offered. An admission of 10 cents was charged those who were not members of the state society, contributors to the premium fund or one of the exhibitors. More than 5,000 people looked upon the displays and wondered if it could be possible that such fruit was grown in the state.

The meetings were likewise largely attended. L. D. Eaton was president, and Mr. Ballou was the secretary who made it possible to have such a show and the splendid addresses.

C. A. Ward of the board of trade delivered the welcome address, following the invocation, and cited the benefits due to the work of the experiment station and said that the good results attained are just the beginning of what our people are going to do. The president delivered a masterful and forceful address in his usual style, citing the time when there was nothing here, and emphasizing what is being accomplished now. He said no other industry can be successful or survive if neglected as agriculture has been. Progressive work needs boosting, and the boosters need solid ground to stand on. The rural transportation problem was mentioned and compared to the cost in France, the cost being 23c per ton per mile in the United States to 10c in France. Two warships recently were sold for junk that cost $150,000,000.00, and that would build 30,000 miles of road at $5,000.00 per mile.

The Commercial Orchard.

E. J. Riggs talked on "Commercial Apple Growing in Southern Ohio." He said that low-headed trees are best, and must be properly pruned and sprayed; the fruit thinned, gathered at two or more pickings, closely graded and attractively packed. Two crops can't occupy the ground at the the same time, such as apple trees and sassafras or other sprouts. Look at the twig growth and see if fertility is needed, apply fertilizers where needed and if the foliage has yellow cast use nitrogen. A complete fertilizer should be used, unless one knows what element may be left out. Plant cover crops to furnish humus where the land is cultivated and sow down where there is danger of washing. Prune for framework of tree first, then for fruit—not for a nice tree. It is economical to thin fruit to save limbs from breaking down and ruining trees. One will get 97 per cent of No. 1 fruit where thinned and 84 per cent where not thinned. Make first picking when mature enough, immature ones will grow and take on a more attractive color in two weeks than when gathered early. Pick so as to leave stem in apple, pack in orchard at once, grade for three sizes in barrels. He has no fear of overproduction. Thin in June to six or eight inches apart on the twig, using ladder on outside of tree to reach limbs that can not be reached from the ground or step ladder.

W. G. Farnsworth cited a case where part of a crop of plums were thinned early and the remainder thinned later. The following year there was a crop of plums where thinned early and none where thinned later. Thinning pays as well as any work to be done in the orchard, if done properly and early enough. Most growers have not courage enough to take off what should be removed. Seed development is what exhausts the tree, so thin before seeds are made. Don't plow corn when it pays to thin the apples. Prune out twigs of Rome Beauty in winter to save some thinning of the fruit.

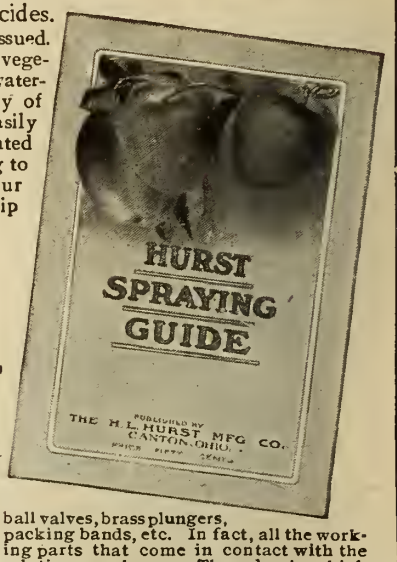
Spray Injury.

U. T. Cox related cases of injury from spraying with dilute lime-sulphur and arsenate of lead the past summer when it was so hot, and that no such injury resulted from bordeaux and arsenate of lead. Some growers think the best formula, as viewed from last year's experience, is lime-sulphur for winter application, using the dilute lime-sulphur and arsenate of lead, or bordeaux and arsenate of lead, just before the bloom comes out. After the bloom drops use lime-sulphur on those varieties that are tender and subject to russeting, such as Ben Davis, Grimes, Jonathan, etc., while on the Rome Beauty the bordeaux is preferred. All later sprayings were with bordeaux and arsenate of lead, the 3-5-2-50 formula being used. Three or four applications were needed after the bloom dropped to control all the fungous diseases and insects.

W. W. Wood, industrial agent of the B. & O. R. R., the oldest railroad in the world and operating under the charter of 1827, in a most eloquent address showed how they were coworkers with the farmers, the aristocracy of the land, in feeding the race. We must fight for principle, and if we get the laws needed we must let our representatives know they represent us. If we send 6,000,000 postal cards a month demanding parcels post, members of Congress will go crazy.

Spraying Guide FREE

This handsome new edition of our complete spraying guide is free to our customers. Shows all the different insect and fungus pests and tells what to use for each. Gives method of preparing twenty or more of the most effective insecticides and fungicides. The most complete book of its kind ever issued. Full information on spraying every fruit or vegetable that needs spraying—from apples to watermelon. It is the result of our long study of spraying conditions, and is a practical book easily understood and helpful in a way not duplicated in any other guide. If you have any spraying to do, you ought to have this book. Send for our catalog telling more about it and how we ship



HURST Sprayers ON FREE TRIAL

Absolutely no money in advance, no bank deposit, no note. We manufacture all kinds of sprayers, from the small hand outfits to the power sprayers shown below—a sprayer for every need. All Hurst Sprayers have brass ball valves, brass plungers, packing bands, etc. In fact, all the working parts that come in contact with the solution are brass. They develop high pressure, are easy to operate and have thorough agitation. Quality the highest and price the lowest is our motto

We will ship you any kind of a sprayer you want on free trial—if it don't suit you, send it back; if you keep it, you can pay cash or we'll wait till next fall for our money and the extra profit from spraying will more than pay for it. We pay the freight and guarantee our sprayers for five full years—that shows that they are made right. Write to-day for our big free catalog and condensed spraying guide and get our special offer of a Free Sprayer to the first in each locality this season. Be first and save money.

THE H. L. HURST MANUFACTURING COMPANY
1818 North Street, Canton, Ohio

DETROIT SPRAYING OUTFITS!

Are the best that money can buy. Sold at lower prices than are asked for inferior outfits.

Power and thoroughness are absolutely essential to success in spraying, and these two features are embodied in the **Detroit Spraying Outfit** to a much greater extent than in any other. Designed by a practical and successful orchardist. Operated by a 4-horsepower **Amazing Detroit Kerosene Engine.** Exceptionally high platform enables you to *get right to the top of the tallest trees* and four full horsepower enables you to

Send for Free Bulletin No. 110 for facts about Profits in Spraying.

Be sure to address your letter to our Spraying Specialist

Drive the Mixture Right Into the Bark

Embodies every convenience. Pump started and stopped from upper platform. Built on a platform of standard width so that it can be placed on any farm wagon. Also can be used as a portable pumping outfit or fire engine. Engine can be quickly removed and used to furnish power for any other purpose. November to May is the time to spray, and after doing your own trees you and the boys can go out and clean up the cost of your outfit in a week by spraying for your neighbors. Write at once for Bulletin No. 110, giving startling facts in regard to the profits to be derived from spraying, together with full and complete instructions, formula, spraying calendar, etc.

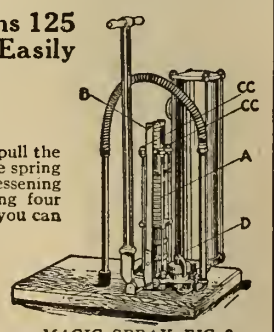
DETROIT ENGINE WORKS
Spraying Dept., Bulletin No. 110, Detroit, Mich., U. S. A.

The One Hand Spray Pump That Maintains 125 Pounds Pressure and Can Be Operated Easily

PORCELAIN-LINED, NON-CORROSIVE CYLINDER; INDESTRUCTIBLE HARD-BRASS BALL-VALVES WITH REMOVABLE AND REVERSIBLE SEATS; NO STUFFING BOX OR OUTSIDE PACKING.

In the illustration, note powerful spring shown at A. As you pull the handle you compress the spring only. When you push it back, the spring expands and helps you force the liquid into the air-chamber—lessening labor by a third. By pulling out two cotter pins, B, and releasing four nuts, C, you can pull out the plunger. By releasing set screw, D, you can open valve-chamber and take out both valves, seats and all.

Write today for new 1912 catalog of famous Bean line of hand and power sprayers.



MAGIC SPRAY, FIG. 9
Read description at left.

THE BEAN SPRAY PUMP COMPANY
East of Missouri River, address 101 Front St., Berea, Ohio
West of Missouri River, address 524 Walnut St., Kansas City, Mo.

Sulphur, Nitrate of Soda Blue Vitriol

If you make your own Lime and Sulphur Solution, write us for prices on sulphur. We carry large stock in barrels and sacks. Ours is the best and cheapest brand for making solution. Goes into solution readily and stays in solution. We also carry large stock of best Nitrate of Soda in 200-pound sacks, ready for shipment. You can save money and get prompt service by dealing with us.

Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

Look Out for June Drop.

Prof. A. D. Selby of the Ohio Experiment Station reported on Pathology, saying with old age of agriculture and intensive culture we have an increase of diseases of plants, so we must learn to control them. Corn diseases have been very bad; not much corn being fit to plant (plant old corn if you can get it). Last

year's grades were very low, due to rot. Rotation for four years in other crops is usually time to get free from most diseases. Fruit dropping from bloom is due to lack of vigor the year before. Look out for 1912 drop due to the drouth. Insurance lies is fertilizing and spraying the year before. Apple scab spores were killed by frost in April and May, and, as dry weather followed, early scab was not much seen. Late fungi were bad, due to so much late rain. Late spraying would have prevented much of the damage. Orchard sanitation is needed to prevent the spread of diseases, such as cankers, scab, bitter rot, etc.

"The New Apple Culture" was discussed by Prof. W. J. Green in an able manner, telling of old methods, coming down to the new, and what to do to grow the best fruit and market it most profitably. Stop growing all sizes of fruit on the same tree, by feeding the tree, thinning fruit, etc. Plant trees farther apart, or cut out so they will be thirty to thirty-five feet on the hills and forty feet on good land. Old family orchards will have little effect on the market, but may do for home use. To revive trees apply two or three pounds of nitrogen per tree. The other elements may be needed, too.

Fertilizing Orchards.

"Orchard Fertilizer Experiments" was the subject by F. H. Ballou of the Ohio Experiment Station, informing us that trees will die by thousands in poor soil if not fed soon. Trees in many orchards now have a sickly appearance and no crops, due to careless cultivation and washing away of the soil on the hills when they should have been seeded down while the soil was good. We see good growth at the foot of the hills from the wash that has settled there. The upland is affected by heat and cold. It lacks humus and moisture, contains little available fertility, and the trees declining until they are fed or else die. Cover crops followed by cultivation can be used where the soils will not be lost by washing. Work can be done in an orchard that is in sod when it is too wet to get on cultivated land. In the station's experiments fertilizers have been applied to apple trees in sod at the rate of five pounds nitrate of soda, five pounds phosphoric acid and two and one half pounds potash per tree about time of blooming. On some soils the potash does not show much benefit, if any. Cost about 25 cents per tree. Fertilizer spread by hand out under the drip of the branches and the nitrate shows effect in two weeks by foliage turning from pale to dark green, grass also responding, but not much result is shown in the fruit until the next year, when the fertilized trees had a full crop, against practically a failure on untreated trees. Income from one fertilized tree $6.58, one not fertilized $2.11; gain $4.47. On another fertilized tree, $8.14 against $2.67; gain $5.47. On still another $5.67 against $1.00; gain $4.67. Manure has not given results to compare with nitrate of soda on sod. Mr. Ballou believes in working where the need is greatest. Complete report of the tests will soon be out in a bulletin which can be had from the station at Wooster, free. In the cultivated plots where sod was plowed down there is no difference between plots fertilized and those not fertilized. The decaying sod made enough fertility available for the trees at present.

"Observations of Southeastern Ohio Horticulture" was the subject discussed by S. W. Harvey of Washington County. It was full of spice and humor, and also interspersed by good thoughts showing the results of methods and industry. We had played a bunco game with mother earth and the apple crops failed us. We won't go back on her again.

G. E. Rowe of Grand Rapids, Michigan, in his address, after judging the fruit, said it was the best by far that was ever shown in this state, and the results of the tests made by the station were more practical, thorough and far reaching than any practiced elsewhere. There are just as many hazards in any other state as in Ohio and in many places more to contend with than here. We need not expect to get fruit from trees that are planted and not cared for, any more than one could expect to turn a colt out to a straw stack for three years and then go out and get a matured horse of the best type. Animals need balanced rations. Man must have it, too. Science says man should have, generally speaking, one-fourth each of fruit, cereals, vegetables and meat, and half the fruit should be apples. At that rate if every apple tree in the country were full we would have only one eighth enough to go around if people would eat the quantity mentioned. Trees must have food every minute from spring until winter stops growth. Learn when, where and how to feed them.

Fertilizer Increased Yield.

Illustrated lectures were given by Prof. J. P. Stewart of State College, Pennsylvania, on fertilization of apples as carried on by their station, and also the cause and prevention of injury from spraying with sulphur-arsenical sprays. The result of fertilizer tests were similar to those carried on in Ohio. In one case, at a cost of $14 per acre for fertilizer, the results were 922 bushels against 54 not fertilized.

About 300 to 500 pounds of fertilizer per acre is recommended, with 30 pounds actual nitrogen, 50 phosphorus and 25 of potash. Manure gave fair results. Cover crops have not proven as profitable as fertilizers. It seems like spray injury can be prevented by using one-fourth pound sugar of lead to two pounds of arsenate of lead in the lime-sulphur solution, or by using the ortho-arsenate of lead. It has been made on the Pacific coast and some of the eastern firms talk of making it the coming year. The cost is about the same, but it may need a trifle more to give the same results. It seems that the form of arsenate of lead we have been using is what caused the trouble, together with the weather conditions, heat, light and moisture. The best strainer for home-made lime-sulphur is one that strains as the liquid flows upward, made in two parts, emptied on one side and runs down under a partition and up through the strainer and drawn off through a faucet.

Moving pictures of using dynamite were shown at the close.

At the night session Prof. Wendell Paddock of the Ohio State University talked about apple tree cankers, and W. O. Gloyer of the experiment station discussed the apple blister canker and treatment. Limbs should be cut close and painted to prevent spores from entering the wound. Cut out dead limbs and trees and burn

Buy From Us By Mail!
Save Middlemen's 50% Profit on Sash, Doors, Millwork and Lumber

"Let Us Ship You a HOUSE!"

Free Catalogs Offer 5,000 Bargains!

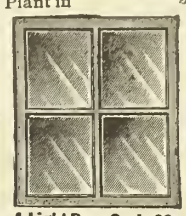
Quality, Safe Delivery and Satisfaction Guaranteed or Back Comes Your Money!

Write for our Grand Free Millwork Catalog, our Lumber Book, our Roofing Book and our Complete Book of Plans for Houses, Barns and all kinds of Farm Buildings. Do it right away. If you are going to build, remodel or repair, these books will save you a whole lot of money. **We save you the huge profits of jobbers, wholesalers and retailers—about 50 per cent.** Our Building Material is all high grade, and we guarantee quality, safe delivery and satisfaction or agree to refund every penny. Three great banks stand back of our guarantee and upwards of a million customers testify to our fair dealing.

A Flight of Stairs Complete, **23.93**

Largest Stock in the United States

We operate the largest independent Building Material Plant in the United States and carry a tremendous stock of latest style Doors, Windows, Mouldings, Stair Work, Porch Work, Finishing Material, Flooring, Ceiling. We can ship stock sizes within 48 hours after order is received.



4-Light Barn Sash, 39c

Porch Spindle, 1c

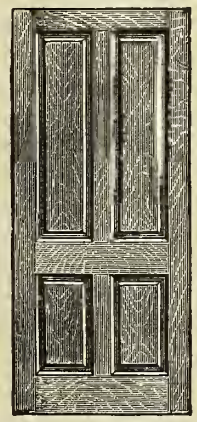
Porch Bracket, 5c

$857 buys all the Lumber and Millwork for this fine eight-room house. Plan No. 121.

This house has Reception Hall, Living Room, Dining Room, Kitchen, Pantry, three Bed Rooms, Bath Room, ample Closets and two Porches. Artistic and convenient.

Save Hundreds of Dollars on Your New House or Barn!

We save our customers from $300 to $500 or $600 on the average house, depending, of course, on size. Hundreds of letters from customers throughout the entire country testify to this fact. See letters in catalog for proof.



77c for this Strong Door

Corner Blocks 2c

Head Blocks 4c

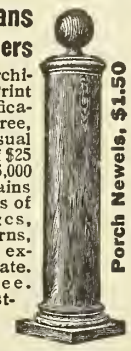
100 Feet Quarter Round 25c

ROOFING Per Roll of 108 sq. feet .. 93c

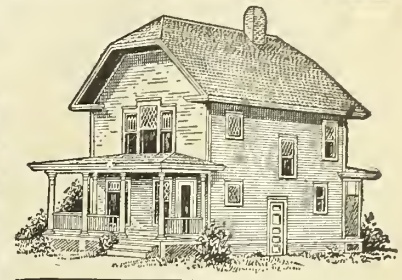
House and Barn Plans Free to Customers

Complete Architect's and Blue Print Plans and Specifications, supplied free, save you the usual architect's fee of $25 to $200. Our $5,000 Plan Book contains 50 complete plans of Houses, Cottages, Bungalows, Barns, etc. Cost never exceeds our estimate. Plan Book Free. Send 10c for postage and mailing.

Stair Newels, $2.86



Porch Newels, $1.50



$698 buys all the Lumber and Millwork for this 8-room house. Plan No. 100.

This house has Reception Hall, Living Room, Dining Room, Kitchen, Pantry, four Bed Rooms, Bath Room, ample Closets and front and back Porches.

From Our Banks

Three big banks, in Davenport, Iowa, and Chicago, certify to our reliability and financial standing. You are perfectly safe in sending money with your orders. See their letters in our catalog.

LUMBER

at Lowest Prices in America

We save you $100 to $300 on a carload of choicest Lumber. Every piece guaranteed up to official grades. We own our own timber land and mills. Price List FREE!

Get the Coupon in the Mail TODAY!

70c for 4-Light Check-Rail Window

Get Our Grand FREE Catalogs and Magnificent Book of Plans

We positively guarantee to save you money on any Building Material you may need. We save our customers more than a million dollars a year. Our new catalogs offer over 5,000 astounding bargains in Millwork, Lumber, etc. By the use of new labor-saving machines we have again cut the cost of production. We give you the benefit of our vast facilities and wonderful economies. We have been here in the lumber business since 1865 and by fair dealing have built up this business to the largest of its kind in the world.

We want you for a customer. All we ask is an opportunity to prove to you that Gordon-Van Tine quality, price, promptness, courtesy and square dealing mean exactly what we say. Get our catalogs. See what wonderful bargains we offer. Think and act for yourself. Send coupon or letter at once.

4 GRAND BOOKS 4

GORDON-VAN TINE CO.
2833 Case Street, Davenport, Iowa
Please send the books checked below to

Name.....

Address.....

Occupation.....

☐ Millwork ☐ LUMBER ☐ Roofing ☐ Plan Book

If you wish Plan Book, enclose 10 cents for postage and mailing.

GORDON-VAN TINE CO., 2833 Case St., Davenport, Iowa (171)

Ladders, Baskets
Crates, Presses
Picking Bags

EXCELSIOR CUSHIONS
If You Want the Best Send a Card for Catalogue

Bacon & Company
Appleton New York

In writing advertisers please mention The Fruit-Grower.

$1 FOR AN ORCHARD

2 Cherry, 3 to 4 ft., 1 E. Richmond, 1 L. Montmorency
2 Plum, 4 to 5 ft., 1 Bradshaw, 1 Lombard
2 Pear, 4 to 5 ft., 1 Early Harvest, 1 Duchess
2 Apple, 4 to 5 ft., 1 early variety, 1 late variety
2 Peach, 3 to 4 ft., 1 early variety, 1 late variety

Positively Only One Collection to a Customer
We hope to get a start with you in this way. If you want more or different trees send list for prices.
Stock high grade, packing free.

The Wooster Nursery Co., Wooster, O.

The Griesa Nurseries
OF LAWRENCE, KANSAS

are offering this spring an unusually fine and large stock of Fruit and Ornamental Trees. Write us at once. Get our Catalog and Price List Free. Agents Wanted.

the brush to prevent the spread of the spores which enter through wounds. Be careful about having limbs or the bark broken. Many dead trees are the result of cankers from broken limbs or bruised bark.

Fancy Packages.

"Picking, Packing, Storing and Marketing Apples," by W. W. Farnsworth, was one of the very best addresses. He said to grow good fruit to hold the markets, and thin the fruit to make it good. As well try to grow twelve stalks of corn to a hill as apples without thinning when the trees are full. Grow varieties the people want in the market, Jonathan being one of his best for Toledo in proper season. Have varieties for succession as some may not bear one year and another may be full. Several varieties extend the picking season. Summer fruit does well and on many local markets are the best paying crops. Mr. Farnsworth stores his fruit in home storage and sells on orders. He packs in baskets, mostly, 20-pound size for fancy fruit. Each basket has a tag bearing his name, and inside of each package is a slip with his name and name of variety together with a suggestion as to what the variety is best adapted for. He makes several pickings to get the best color as well as size. As soon as the fruit is picked he stores it in a cool place at once, not in bins, but in crates. In his case he sorts and packs as orders are received, putting colored side up as nature placed them on the trees, ships by trolley. Lower grades are sold to hucksters. He sets his own prices and the grocers add a fair profit, his price being about 65c to 75c per 20-pound basket and their selling price about 90c each. He asked, "why not put up small fancy packages of fruit so a fellow can take one along to his best girl instead of candy?"

Discussion brought out that advertisements placed in local papers saying what stores have one's fruit on sale and labeled so people know who grew it has helped to build up good trades.

C. H. Hoyt of Cleveland talked of "Tree Wounds and Treatment," citing the decaying lumber as similar to trees, and wood preservatives to prevent the entrance of spores. We need something to kill the spores and prevent their entrance into the wounds until they heal.

A new constitution was adopted and officers were elected. L. D. Eaton was re-elected president; E. H. Riggs, vice-president; F. H. Ballou of Newark, secretary; Prof. V. H. Davis, treasurer; W. W. Farnsworth and C. P. Dyar as executive committee.

The first premium on large booth exhibit was won by W. W. Farnsworth; second, W. G. Farnsworth, both of Lucas County; third by S. E. Crawford of Lawrence County; fourth, by E. C. Cole of Washington County; fifth, by R. A. Gill of Ottawa County; sixth, by Mr. Ropp of Fairfield County.

U. T. COX.
Ohio.

Hardiness of Buds.

Seldom has New England known a colder winter than the present one. There has been enough warm weather, however, to thaw out the frozen peach buds, so that it is now fairly easy to determine their condition.

Singularly enough, the temperature in different localities varied greatly this winter. Previous to January 26th, my thermometer registered a minimum of eight degrees below zero, but on that date it dropped to thirteen degrees below zero. In many of the surrounding towns I found that at the first cold snap temperatures went to sixteen degrees below. I examined my peach buds before Jaunary 26th, when there had been no temperatures colder than eight degrees below zero, and found that the larger part of the fruit buds were dead. In short, I judged the crop practically ruined.

On thing was plain however, and that was that the Conover variety had been injured but little, and Greensboro showed a good percentage of live buds where the trees were in a vigorous condition.

I was interested to know why a temperature of eight degrees below should have killed the buds. On looking over the previous records I found that in 1904 I had a good crop of peaches and yet my records showed one of the severest winters for years. Some three or more times during that winter the temperature dropped to thirteen and sixteen degrees below zero Yet this was not the first time that my trees had stood so low a temperature and produced a crop of fruit. On the other hand I lost my whole crop one season by reason of a cold day in December when the temperature dropped to fifteen degrees below zero.

Without doubt the moisture content of the air, at the time of low temperatures, makes a great difference in the injury that is done to fruit buds. One winter in Illinois, when the temperature reached twenty degrees below zero, and on another occasion when it went to twenty-five below, only half of the peach buds were destroyed. At still another time a temperature of five degrees below zero killed a third of the buds.

Tender Buds.

Professor Bailey tells us that "vegetable tissues, in active condition, are less able to bear extremes of heat and cold than those in a quiescent state." It is noticeable that the present year was warm through December, and it is reported that rose bushes in sheltered locations began to open their leaf buds. The cold snap that killed the peach buds on the cold day in December, when the themometer dropped to fifteen degrees below zero, was not preceded by gradually lowering temperatures, such as usually comes, and seems to fortify the buds against extreme cold.

Interesting as these theories are, the thing we all want to know is, what can we do about it?

My own solution is to ever seek for more hardy varieties. I think there are more hardy varieties than those which most of us are growing. I think that there are probably more live buds on such varieties as Mountain Rose, Crosby and Old Mixon than one would suppose, since an occasional live bud can be found. The worst trouble is that such varieties as did stand the winter this year are not the most valuable. Conover is very small and Greensboro is of poor quality, though I can sell both in a year when peaches are scarce.

Another thing is to cultivate as early as practicable and fertilize with quick acting fertilizers so as to get early wood growth, allowing both the wood and buds to ripen as early in the fall as possible.

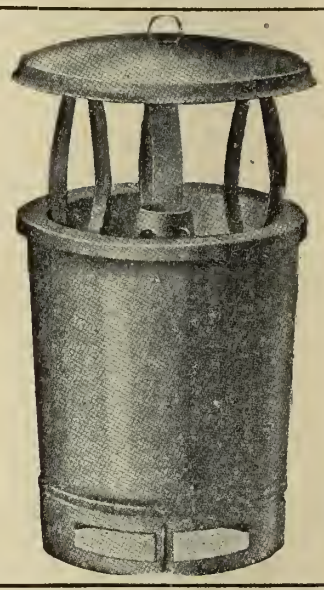
I find that the crop of 1904, following a temperature of at least sixteen degrees below zero, was preceded by a barren year; there being no fruit in 1903. Last year my crop was the heaviest of any I have ever had, and I am quite positive that after such a crop the few fruit buds that are made are not strong or able to resist cold.

I had about twice the quantity of peaches on my trees last year that I should have had, even though the trees were thinned, some of them thinned twice. I believe we leave far too many peaches on the trees, which produces a large number of medium sized peaches and weakens the trees. My Champion trees bore enormously, and their weakened twigs and small buds show the effect of it.

Possibly some readers may wish to examine his trees and not know exactly how to tell a dead bud. Professor Bailey, in his "Principles of Fruit-Growing" makes this very clear. In my own trials, I make a clean cut through the center of the bud lengthwise, using a very sharp knife. If the bud is dead, the inside, particularly the center will be brown, or even black in color. If alive, it will be as green as cabbage, with little round seed-like stamens in the center. I never knew of a failure to distinguish a live bud from a dead one where this method was used, and by knowledge gained by yearly examinations.

Massachusetts. A. F. TENNY.

IF YOU are at all interested in
Home-Mixed Fertilizers
I would like to send you my book on the subject. It contains full information, formulas and lots of information to farmers who want to get the most and the best for their money. The book will be sent free upon request by post card from you.
Dr. WM. S. MYERS, Director of Propaganda
17 MADISON AVENUE, NEW YORK
No Branch Offices

The Troutman Orchard and Ground Crop Heaters
Last call for the spring 1912. Act now if you are to save your crop.
Telegraphic orders given preference
THE ROUND CREST ORCHARD HEATER CO.
Canon City Colorado


MAKE YOUR OWN TILE
One Man Can Make 300 to 600 Perfect Tile a Day
WITH OUR FARMERS' CEMENT TILE MACHINE
at a cost of $3 to $5 per 1000. The only farm tile machine that does not require hand tamping; the only farmers' machine operated by either hand or power. Machine makes 3, 4, 5, 6 and 8 inch tile, 12½ inches long. Our Patented Water-Proof FLEXIBLE CASING holds tile in perfect shape till set. No Pallets. If after 10 DAYS FREE TRIAL 10 days' trial it does not meet with entire satisfaction, return at our expense. The price of the machine will be saved in making your first 2000 tile. Can You Afford to Be Without It? Write today for illustrated catalogue.
FARMERS' CEMENT TILE MACHINE CO.,
Box 407 St. Johns, Michigan.

HEMINGWAY'S LEAD ARSENATE
The brand which is used in all of the great Apple Growing Districts of the country—The Blue Ridge Slopes, The Ozarks, Western New York, Michigan and the famous valleys of the great Northwest.
Lead Arsenate of the Highest Standard of Manufacture, Both Chemically and Physically.
Hemingway's London Purple Company, Ld.
Write for Booklet and Prices New York

Spray Trees Now
While You've Time To Do a Thorough Job. Don't Put Off 'Till Busy Spring. Use
Target Brand Scale Destroyer
A miscible oil that destroys San Jose Scale and all other scales. It spreads on contact with the tree, thus covering every part, even those missed by the direct spray.
Endorsed by every experiment station where tested. Sold by good dealers everywhere. Write for interesting literature. Mailed free.
HORTICULTURAL CHEMICAL COMPANY
135 South Fourth Street. Philadelphia.

Know Your Spray SOLUTION
The Secret of Spraying Success is in the Right Solution
The TAYLOR "LI-SUL-SPRAYOMETER" shows you the exact gravity and strength of your Lime and Sulphur washes—the most efficient and least dangerous of all spraying solutions
N. Y. Pattern—Two Sprayometers and Test Jar in case.....$2.00
Penna. Pattern—Sprayometer and Test Jar in case.....$1.25
If your dealer cannot supply you, write us. Send for circular of formulas and general information on Spraying. Ask about the "TYCOS" Frost Alarm and other Thermometers for Orchardists.
Taylor Instrument Companies
57 AMES ST., ROCHESTER, N. Y.

LIME-SULPHUR HYDROMETER Used By All Progressive Fruit-Growers
Price By Mail With Test Jar and Instructions.....$1
Agents Wanted Everywhere
CARBONDALE INSTRUMENT CO., Carbondale, Pa.

Every Farmer Can Profit By The NEW JOHN DEERE Book
It's Free Write for it now. It illustrates and describes the best line of implements made. Tells how and when to use them. It answers every question about farm machinery. No farmer can afford to be without this book.
John Deere Plows, Cultivators, Harrows and Farm Tools
Look for our trade-mark—it will protect you against inferior, out-of-date goods. JOHN DEERE implements have taken the gold medal at every world's fair and international exhibition since 1840.
Get Quality and Service—John Deere Dealers Give Both.
Tell us what farm tool you want to know about and then ask for the big book, package No. X56
John Deere Plow Co. Moline, Ill.
FREE

In writing advertisers please mention The Fruit-Grower.

ABOUT PEDIGREED TREES

We have just now a period of great agitation in the business of apple growing. This agitation is directed towards its increase and improvement. All over the country from ocean to ocean new orchards are being planted and old and hitherto neglected ones are getting such an overhauling as never befell them in former times. There is little doubt that the next ten years will see a most remarkable transformation of apple growing especially in that part of the country lying east of the great plains. To the west of this division the new era is already established, but even here there may be yet great progress.

Everywhere the growers are demanding to know the best methods; they want to know how to grow the best possible quality of fruit, to know the best methods of cultivation, spraying, pruning and marketing. In establishing their many new orchards they want the better quality varieties and they want the best trees that the nurseryman is able to supply.

This last has doubtless contributed largely to the practice that seems to be increasing, of growing so-called "pedigreed" trees. The common method of growing such trees seems to consist in propagating from individual bearing trees of known excellence, as distinguished from the more usual practice of the nurserymen of cutting his propagating wood from young trees in his nursery rows.

Individuality Within the Tree.

Now, the fact that individual trees in the orchard differ greatly in the amount of fruit produced and also show pronounced differences in form, color and quality is one that cannot be denied; and the differences, especially in productiveness are greater than many orchardists suppose. Furthermore it does not seem reasonable in many cases, to attribute these variations to differences of soil, exposure or any other environmental influences, though such influences do greatly affect all varieties, of course. There are individual differences that proceed from within and not from without. If these may be transmitted through the bud or scion to other trees the practice of propagating from trees of known excellence is a most reasonable one and ought to be encouraged in all possible ways; on the other hand if we cannot hope to so transmit them the practice is a waste of time and effort and can result in nothing but disappointment and discouragement to the grower who plants them.

There are a number of cases on record where a portion of a tree has borne apples strikingly different from the rest of the tree and these variations have been successfully reproduced by bud. If superiority appearing in a portion of a tree may be reproduced it may seem most reasonable to suppose that the same result is to be expected if the whole tree is superior. But the differences here referred to are striking ones generally spoken of as "bud sports" and are believed to be of rare occurence though we do not know just how unusual they may be. Beyond doubt the general opinion is that they are most uncommon and are of a different nature from the ordinary variations that give us the usual especially desirable tree, and which are the ones commonly sought for by the grower of "pedigreed" trees.

Where Is the Proof?

There seems to be a general feeling however, among a great many people that these individual variations, not "bud sports," may in some degree at least, be reproduced by buds. I do not know of any reliable proof that this is the case. The presumption seems to be that any attempt to transmit the excellence of an individual tree is likely to be of no avail and to yield only disappointment to the grower who propagates such trees. This is by no means a proven fact, for while certain attempts to reproduce such variations have apparently resulted in failure it requires a great many such negative results to demonstrate in a satisfactory manner that the case is hopeless.

Others claim to have been successful in such efforts, but so far as these cases have come to the notice of the writer they seem to be susceptible to a different explanation. It would be interesting to know more of the efforts of those who have tried to transmit individual excellence by bud. It is probable that many experiments have been made that have not come to any public notice. What have been their methods of selection and propagation, what success or failure has attended these efforts?

Massachusetts. J. K. SHAW.

Much Interest in Irrigation.

In his annual report to Secretary Wilson, Dr. A. C. True, the Director of the Office of Experiment Stations, deals interestingly with the work of irrigation in which he says: "The widespread interest in irrigation, the large sums expended in securing water supplies, the rapid settlement of lands, and the great agricultural development under irrigation enterprises have necessitated the expenditure of much more time and funds in furnishing information to prospective settlers and in extending timely aid to those who are endeavoring to establish homes in the reclaimed portions of the arid lands of the West. The number of inquiries from eastern people for information concerning agricultural conditions in the different sections of the West has increased more than 40 per cent during the year. This demand has been so great that it has been necessary to have reprints of nearly all the bulletins of both the practical and state series described in former reports. During the year three additional bulletins of the state series have been published, leaving but five of the arid and semi-arid states that have not been covered.

"The thousands of settlers who have settled on irrigated lands during the past three years are for the most part ignorant of irrigation practice and methods, and both the most recent settler and the pioneer irrigator are continually confronted with new problems. To assist both the old and the new settlers, agents have been maintained throughout the entire year in ten of the western states, and in three others during the spring of 1911. These agents devoted a large part of their time to traveling from place to place in their respective states collecting data and studying conditions, giving practical advice to irrigators, consulting with the officers of irrigation enterprises regarding the improvement of methods, and addressing farmers' meetings upon practical irrigation questions. The work of the agents has been supplemented to a large extent by the bulletins and circulars of this office and the Farmers' Bulletins of the Department, three additional bulletins and two circulars having been issued during the past year."

ROME BEAUTY APPLES AT MORRISANIA.

THE WINTER HAS BEEN DELIGHTFUL AT

Morrisania

WHILE the states east of the Rocky Mountains have had a most severe winter, and fruit buds of tender fruits have been killed in a great many fruit districts, Morrisania has maintained its reputation of having a most even climate. While the Missouri Valley was experiencing a temperature of 24 degrees below zero, with disagreeable winds, Morrisania had perfect winter weather, with sunshine practically every day. Not the slightest damage has been done to fruit buds up to the present time. Everything, from apricot and peach buds to winter apples, is in perfect condition, and there is no reason to believe that Morrisania will not repeat its performance of other years, in having full crops of all kinds of fruit.

In Twenty Years Only One Fruit Crop Has Been Injured By Frost at Morrisania

This remarkable record is due to the protection afforded by the mountains, by the slope of the land, and by the wonderful air drainage which this favored spot enjoys.

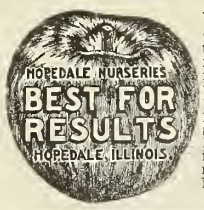
Everyone who sees Morrisania appreciates its advantages as a place for growing fruits of finest quality and as a location for a home. Conditions are as nearly ideal as can be found anywhere. Soil is finest fruit soil imaginable, climate is well-nigh perfect, there is an abundance of pure, soft water for domestic use and irrigation; surroundings are most beautiful, shipping facilities are of the best, and it is no wonder that everybody who visits Morrisania falls in love with the place.

Only About a Dozen Ten-Acre Tracts Remain Unsold

We started out to sell about 500 acres of this 800-acre ranch, reserving the remainder for our own use. Only a little more than 100 acres are yet to be sold, the remaining acreage having been sold to persons who have visited Morrisania, and who want ideal fruit land. Those who are interested in investments of this kind should visit Morrisania this spring, if possible. If you want high-grade fruit land, or if some member of your family needs the benefit of Colorado's wonderful climate, you owe it to yourself to see Morrisania before this land is all taken.

Write for booklet fully describing Morrisania, with illustrations made from photographs. Remember, we have every kind of fruit that can be grown in the temperate zone in bearing at Morrisania, and can show you just what can be done there.

Morrisania Land & Orchard Co., Box 1277, St. Joseph, Missouri



We have no "Patent Right" on honesty, nor do we claim to be the only honest nurserymen. Many nurserymen are not careful enough to pack the sorts called for. Our 48 page descriptive catalog explains our methods of propagating and doing business. It has a chapter on spraying and much practical cultural information. It is Free. Send for it today. Hopedale Nurseries, Dept. M, Hopedale, Illinois.

DAIRY AND FRUIT FARM

A Profitable Combination For Those Owning a Small Farm—Poultry a Good Side Line

The Fruit-Grower believes that there are hundreds of small fruit farms that, while making the good living for their owners, might be made to pay much better returns through a combination of either dairy or poultry-raising in connection. The work on a fruit farm naturally comes in bunches—the spraying, pruning and care of the orchard must be done at certain times, the fruit ripens when it will and waits for no man and when it is ready for market, delay is dangerous.

There are days and weeks when the fruit grower, even with a small orchard, if he be a true orchardist, has his hands full and running over. At such times he finds it difficult to obtain sufficient help to take care of his fruit and must needs depend upon such boys and girls and women and non-competent men as he may be able to gather from the hedges and byways.

The small orchard alone will not permit the employment of competent help all the year around, but when combined with dairy or poultry raising this difficulty is easily overcome, and the owner is in a much better position to take care of his fruit and make a better profit out of it than he would if conducting the orchard alone with insufficient help.

Orcharding is, of course, like dairying, a specialized line of endeavor, and so is poultry raising. There are not enough people in the business who realize this, but the fact is slowly

THE BABCOCK TESTER.
This is the detective that invariably exposes the cow that does not earn her feed.

beginning to make its way upon the intelligence of those engaged in it. Dairying is a man's job and so is poultry raising, although the latter can be conducted and, in fact, is now being conducted in thousands of places, by women who find it more profitable and healthful than indoor employment.

A large farm is not necessary for dairying. While pastures are needful to a certain extent, it is a fact that dairymen are becoming less dependent upon them every year. A dairyman of our acquaintance near Danbury, Connecticut, last year plowed up 75 acres of pasture and put it all into corn which was latter turned into the silo. He now has two pastures each of about 40 acres and one of these will go into corn this spring and the other will follow next year. This man says he has demonstrated that he can produce more milk and with greater regularity of flow by the use of silage than on pasture, and at less cost.

Ten Cow Dairy.

On an orchard farm where there is say, forty acres of free land a dairy of ten cows could be maintained without difficulty. Of course pasture could not be depended upon, but specialized feeds must be used. Good corn land will turn into the silo twenty-five to thirty-five tons of the very best kind of feed per acre, and no pasture on earth has ever yet been able to produce such an amount of milk-giving product.

Two silos of, say, a total capacity of seventy-five or eighty tons will hold sufficient ensilage for six months' winter feed of ten cows and also provide plenty for summer use. Ten cows at least can be maintained on a farm of forty acres exclusive of orchard, provided the highest cultivation is followed and the work is specialized. Of course, if the cows are to be allowed to run over large areas of pasture this cannot be done. While a little pasture must be used, mainly for exercise and to give that variety necessary to dairy feed, the main support of the dairy must come from the silo and from green crops especially grown for them.

On a combination orchard and dairy farm, crop rotation is absolutely necessary. We must have clover, we must produce corn for the silo and some for the pigs, because the pigs are necessary to use up the skim milk and the oats and cowpeas should always have a place in the rotation.

Ten or a dozen cows with their calves and the pigs, and horses necessary to work the farm, will produce sufficient manure to dress the land fairly well. If this manure is applied to clover sod and this turned down for the corn it will produce a tremendous amount of succulent feed to go into the silo.

A farm of this size should also have a field of alfalfa—and let no man believe that alfalfa is to be confined to the arid regions of the west. Some of the finest alfalfa is now grown on the New England hills in places where little else has been raised for many years, while on the rich corn lands of the Middle West, alfalfa is now as much a fixture as the corn itself. The orchardist with only forty acres of free land at his command will have to buy some concentrated feeds. All right, let him buy them. He will find it will pay well. Dairying is strictly a manufacturing business and if certain raw materials are necessary to get returns from those grown at home, it is a matter of business economy to buy them.

No farmer need be afraid to buy feeds for his dairy cows provided he knows what to buy and how to buy them. He must have those feeds that contain the elements lacking in the home feed, and then again, he must own cows which will make the best use of the feeds he buys. This means the scrubs must be kept out of the herd.

The dairy farmer on a small place must buy bran, oil meal and barley and he must at all times study the question of feeding as carefully as any other branch of the business because upon this proper feeding depends very largely the success of his dairying.

Dual Purpose Cow.

But no matter how much good feed the farm will produce, nor how much the owner may be willing to buy from the market, he will surely fail unless he owns the right kind of cows. Have nothing to do with beef blood. Stick to the two dairy breeds. Perhaps no other subject has been so much written and talked about at the dairy meetings as the dual purpose cow. Some farmers imagine that they can produce an animal that will make good beef or butter as it is needed. Never was there a greater mistake. If we are going in for dairying, let us use cows that are bred for milk and butter and not for beef. If we are going in for beef we have no use for the wedge-shaped, bony, big-paunched dairy type of cow.

Let us select the breed that best pleases our taste, providing it is a true dairy breed, and then stick to that. By the use of pure bred bulls any careful man can, within five or six years, build up a herd that will produce the very best results and at a great deal less expense than he could by going into the market and buying pure bred at the start.

We believe that the right way to run a dairy is to grow up with the cows. Select the best calves every year, and by this we mean those

Bigger Crops of Better Strawberries Grow from Thomas Pure-Bred Plants

Because for 21 years I have devoted myself, body, brain and conscience, to up-breeding and improving the strawberry. I started right. I selected Anna—the most naturally perfect soil and climate for strawberry culture—as the home of Thomas Pure-Bred Plants. Every year I have produced new and more productive strains. I have found that some plants show a strong tendency toward betterment. Proper breeding has enabled me to produce plants which for bearing qualities, vitality and stamina cannot be equalled. Thomas Pure-Bred Plants have many advantages over plants grown North, South, East or West of Anna. Our soil and climate give the needed rest and dormant season to a degree that does not exist elsewhere. The unexcelled bearing qualities of my plants are proved by record crops in 40 states out of the 46 states in the Union

Thomas Pure-Bred Strawberry Plants are the best bred, best grown, best dug, best packed strawberry plants that money can buy,

yet they cost no more than "average quality" plants. I've devoted my life to the study and breeding of the strawberry plant. This one thing I do. I have 200 acres. I positively know that I can increase your yield. I care not how many berries you are getting per acre—if you use my plants, you can get more.

Read What Some of My Customers Say:

Louisiana.
We are very much pleased with our strawberry plants we bought from you and find they bear nicely.
J. G. HIRSCH & BRO.

Illinois.
I have been getting plants from you for the past four years and have always found them first class and true to name.
H. W. SHACKELFORD.

Arkansas.
My 27,000 plants are doing fine, much better than my neighbors', who used native plants. E. E. WILLIAMS.

Missouri.
The plants I ordered arrived in a good condition. All plants I have ever ordered from you have been true to name and I have been pleased with them.
G. M. WITHERS.

My personal guarantee that every plant is true to label and free from disease is backed by my 21 years' experience and reputation right in my own home county.

I will help you select the varieties best suited to your soil and climate. I can prove to you that whether grown for home use or for the market, Thomas Pure-Bred Plants will bring you the largest return for your money, time and labor. The leading features of my system are explained in

My Great Strawberry Book

Send for it to-day. I'll send it, all charges paid. It's valuable alike to beginners and large growers. It tells how to buy, plant, cultivate, market. 48 pages, 65 engravings. Write to-day.

W. W. THOMAS The Strawberry Plant Man
136 Main St., Anna, Illinois

Planet Jr

means on a farm or garden tool the world over that it is the latest-improved, lightest, strongest, most useful and economical tool of its kind. With Planet Jrs come

Less work—bigger crops—more money

They make you independent of slipshod help and give you time for rest and enjoyment besides. 55 Tools; guaranteed. Designed by a practical farmer; used throughout the world.

No. 25 **Planet Jr Combined Hill and Drill Seeder, Double Wheel Hoe, Cultivator and Plow** has automatic feed-stopping device, valuable seeder index and complete set of cultivator attachments. Indestructible **steel frame.**

No. 8 **Planet Jr Horse Hoe and Cultivator** is a wonder of scientific tool-making. Does more different kinds of work, better than any other cultivator. Plows to and from row, hills, furrows, etc.

FREE! A 64-page illustrated farm and garden book!

Keep up to date! Learn the latest and most valuable farm and garden information by sending for this Planet Jr book. It describes also 55 tools for all uses. **Write postal for it today!**

S L Allen & Co
Box 1107C Philadelphia Pa

SCARFF'S 1912 BARGAINS IN SMALL FRUIT PLANTS

"At it 25 years." Have grown from 1 acre to 1,100. We do not claim to know it all. We do know enough to start you right in fruit growing. Success depends upon good plants of the right variety. We grow the right kinds and make no extra charge for them. We strive for the best in everything. We actually paid

$350 for 10 ears of SEED CORN

We have issued and send free, to anyone interested in good Corn, a booklet telling how we planted the 10 prize ears of Corn, its yield, and other instructive facts. It is nicely illustrated from actual photographs.

Send for Free Catalogue

Every reader of this paper should have a copy. It is a concise business catalogue of Plants, Fruit Trees, Ornamental Shrubs, Vines, Seed Corn, Oats, Potatoes, Alfalfa, Timothy, Clover, etc. Planters should get our prices and terms.

We give our 1912 customers a start of the $350.00 Corn FREE

W. N. SCARFF, NEW CARLISLE, OHIO.

LET ME SEND YOU MY FREE BOOKLET

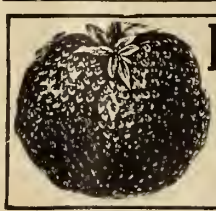
"STRAWBERRY PLANTS THAT GROW"

STRAWBERRY PLANTS THAT GROW

Describing a full list of varieties with prices. Also INSTRUCTIONS FOR PLANTING AND CULTURE of STRAWBERRY, RASPBERRY, BLACKBERRY, CURRANT, GOOSEBERRY and GRAPE PLANTS; also ASPARAGUS and RHUBARB ROOTS.

All Stock Warranted First Class and True-to-Name or MONEY REFUNDED.

C. E. WHITTEN'S NURSERIES, BOX 9 BRIDGMAN, MICHIGAN.



Fall Bearing Strawberries

These Berries are truly wonderful. They bear fruit every fall as well as spring, three crops in two years. They have yielded as high as 10,000 qts. to acre in Aug., Sept. and Oct. of first year, with us. We cannot get enough fruit to supply the demand at 25c per qt. wholesale. I know of nothing in the fruit line quite so profitable. We are also headquarters for Plum Farmer, Idaho and Royal Purple Raspberries, Early Ozark Strawberry, Watt Blackberry, Hastings Potato. Catalogue of all kinds of Berry Plants free. Address **L. J. FARMER, Box 230, Pulaski, N. Y.**

MID WEST BEST BY TEST RASPBERRY

Greatest Black Raspberry of the Age

ILLUSTRATED CATALOG FREE ON REQUEST

PERU NURSERY, Box 404, Peru, Neb.

from cows that produce the greatest quantity of milk and butter; use nothing but pure bred bulls and by keeping up this process of selection a man will soon be surrounded with a herd of which he may be proud.

In selecting calves from the best cows, guesswork is not to be thought of. The Babcock tester is the detective that spots the worthless cow every time, and the tests must be carefully made, in order to know just what the herd is doing. There are thousands of cows in every state today that are not giving enough milk to pay for their feed, and there are thousands of others that are not paying for one-half of their feed, yet their owners go on year after year caring for these worthless animals because they are able to hide their shortcomings in the product of the general herd.

A farmer may own six cows that will produce every year a profit of from $75 to $100 apiece, but if he has in addition six others that do not pay for the feed they consume, he is simply trying to lift himself with boot straps and is working against himself all the time.

With the Babcock tester it is an easy matter to tell exactly what each cow in the herd is doing, what it produces every day and how rich the production is in butter fat. The young heifers must also be tested. At first many of them will not prove profitable, but as the true dairy blood works itself into the herd, the percentage of non-profitable ones will grow smaller. There is absolutely no use on the small farm, or any other for that matter, for the cow that will not pay her owner from $75 to $100 net profit per annum.

We know of a farm of forty-three acres near Elgin, Illinois, on which is kept a herd of from nine to twelve cows. Nine cows are now being milked and the regular monthly gross income from these nine cows runs from $115 to $125. The work is all done during the winter by one man, a young German who is a good dairyman and who runs his place on scientific principles. During the summer he hires some extra help, but laments the fact that he has no orchard or enough small fruit to enable him to keep a man all the year around.

The orchardists on the small farm should sell nothing off the place except milk, pork, poultry and eggs. The skim milk turned into pork, poultry and eggs pays big. The farm will produce enough grain which in connection with the skim milk will take care of a nice bunch of pigs and a large flock of poultry as well.

Poultry raising is the true adjunct of dairying and ought to be hitched up with fruit raising on every farm where orcharding is not a strictly commercial business.

If the orchardist with a fair amount of free land will study the dairy cow and her wants, attend dairy conventions, read good dairy literature, post up on feeds and feeding and test his herd for profitable animals, he will prosper.

While fruit growing brings the money in chunks at certain seasons of the year, dairying is the only branch of farming bringing in money every month of the year. The dairyman who knows his business will have a check going into the bank every month and need never be short for cash provided he uses good judgment in his business. Then when the big check comes from the sale of fruit in the fall he will realize the great advantage to be derived from this combination.

New York Shipping Organization Formed.

Tired of "going it alone" in selling their fruits and produce, a number of vegetable and fruit growers in Chautauqua County, N. Y., recently formed the South Shore Growers' and Shippers' Association. Capital stock was placed at 1,000 shares of $5 each, and more than 200 growers have taken memberships. The secretary of the new organization, Mr. H. K. Palmer, writes us as follows:

"The association was formed largely to help our growers get better contracts from canning factories, which for the past five years have been very unsatisfactory from our standpoint. After careful consideration of the matter, we have come to the conclusion that the contract system so generally used by shipping associations is in itself fundamentally wrong, and we are therefore discouraging this system and are endeavoring to have the men who grow the products take at least one share of stock in this association, pointing out to them the value of being a stockholder and having a voice in the management of the association.

"The association will purchase all farm supplies in large quantities; will make a single contract with canneries, of which we have six or seven in our immediate vicinity; we will try to find a better market for the growers of small quantities of small fruits and vegetables raised in this section, and the association will encourage its members to plant more of certain kinds of fruits that some of us have found to be very profitable, gooseberries, for instance. The members will act as a unit upon all matters tending to improve conditions in this section, and all will strive to raise the standard of our products."

The new association starts out under most favorable conditions, and it is likely to prove a great help not only to its members, but to all growers in that district.

January Number Made a Hit.

Every day we get letters from subscribers telling us how well they are pleased with The Fruit-Grower, but since the January number appeared we have received thousands of letters congratulating us upon that issue. Most of these letters say the January number alone is worth more than the price of a year's subscription. A great many of these letters ask for extra copies of the January number, for distribution among neighbors who are interested in fruit culture. The following extracts from letters are typical of hundreds of others:

"Have been reading the January Fruit-Grower, and it is a hummer. Wish you would send a copy to some of my neighbors whose names I inclose.—G. A. Balden, Capac, Mich."

"I want to congratulate you on the January number of The Fruit-Grower. Any fruit grower who cannot get the price of a year's subscription out of this one issue must certainly be a dead one.—G. R. Schauber, Ballston Lake, N. Y."

"Please send me two extra copies of the January Fruit-Grower; I have a couple of friends I want to see it. This January number is the best thing I have seen anywhere on spraying.—Delos Tenny, Hilton, N. Y."

"The spraying number of The Fruit-Grower is worth the price of a year's subscription. Send me some extra copies for distribution among those interested.—Charles Hey, Dixon, Ill."

Now, friends we are saving some copies of the January and February issues, and those who subscribe now can have their subscriptions start with January, if they so desire. Get your neighbors to give you $1 apiece for a year's subscription and send in a club; these new subscriptions can start with January, if you request it, and your friends can have the benefit of our great feature issues.

DE LAVAL
CREAM SEPARATOR

NEW AUTOMATIC OILING

The most important Cream Separator improvement since the introduction of the present type of De Laval machines.

The new automatically oiled De Laval Cream Separators are now being supplied in all sizes, and this improvement constitutes another great step forward in cream separator construction—the one thing possible in betterment of the previous De Laval machines of the present type.

The new system of De Laval automatic oiling is distinctively different from any other splash or spray system in that there is a constant regulated feed of fresh oil and discharge of used oil. Other splash systems use the same oil over and over, until it soon does more harm than good.

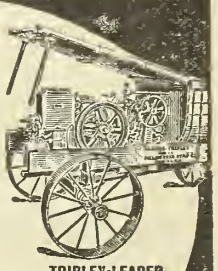
In the new automatically oiled De Laval machines all gears, shafts and bearings practically float in a mist-like spray of oil and literally never touch each other during their operation.

De Laval agents will be glad to exhibit the new machines and demonstrate the working of the new automatic oiling system, which more than ever enhances De Laval superiority in every feature of cream separator practicability.

THE DE LAVAL SEPARATOR CO.
NEW YORK CHICAGO SAN FRANCISCO SEATTLE

SPRAY Don't Do A Half-Way Job

Efficient spraying depends on the machines you use. Field sprayers stand the test year after year. Thousands of users agree that no other spraying machinery does the work so thoroughly and conveniently. Ample power is supplied and liquid is thoroughly agitated. You are not annoyed by clogged strainers because brushes operated automatically keep them clean.


TRIPLEX-LEADER SPRAYER

Field's Sprayers
A Machine Suited to Every Need

EMPIRE KING

Bucket, Barrel, Knapsack Sprayers, 4-Row Potato Sprayers, High Powered Gasoline Engine Orchard Rigs, etc. Our Triplex mounted orchard sprayers represent the truly modern spraying idea. Work is done fast and thoroughly. The gasoline engines, ready mounted, can be taken anywhere to supply power for farm work. The Empire King is the best hand-power all-purpose sprayer. Potato Sprayers (adjust for wide and narrow rows) spray 4 rows thoroughly as fast as a team can walk.

Our Spraying Calendar, Formulas and Directions and Complete Sprayer Catalog are free. Don't buy till you get them. Write for them to-day. Address

FIELD FORCE PUMP CO.
58 11th St., Elmira, N. Y.

FIELD FORCE PUMP CO. The Leader "OSPRAYMO" LINE OF SPRAYERS ELMIRA, N.Y.

$15.95 AND UPWARD
AMERICAN SEPARATOR

SENT ON TRIAL, FULLY GUARANTEED. A new, well made, easy running separator for $15.95. Skims hot or cold milk; heavy or light cream. Different from this picture, which illustrates our large capacity machines. The bowl is a sanitary marvel, easily cleaned. Whether hairy is large or small, obtain our handsome free catalog. Address,

AMERICAN SEPARATOR CO. Box 1146 BAINBRIDGE, N. Y.

THE STANDARD SPRAY PUMP
HIGH POWER—LOW COST $4.00

Used with bucket, knapsack or barrel

Here is a pump that will spray your tallest fruit trees from the ground in half the time required by any other. Will whitewash your chicken coop, spray cattle "dip" and, with knapsack attachment, spray a field of potatoes as fast as a man can walk.

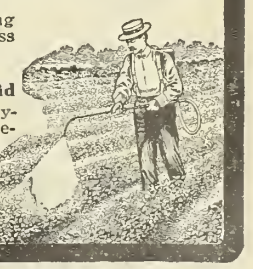
Simple, easy working. Nothing to get out of order. Made of brass throughout.

Warranted 5 Years
Price $4. Expressage prepaid

The only practical low priced sprayer for orchard, garden, field or vineyard.

Send no money now but write today for Special Offer and Catalog.

The Standard Stamping Co.
543 Main St., Marysville, O.

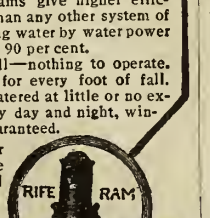


RIFE RAMS Reduce Cost of Irrigation

Rife Rams give higher efficiency than any other system of pumping water by water power—60 to 90 per cent.

Cost little to install—nothing to operate. Raise water 30 feet for every foot of fall. Land above ditches watered at little or no expense. Pump automatically day and night, winter and summer. Fully guaranteed.

If there is a stream, pond or spring within a mile, write for plans, book and trial offer, Free.



RIFE ENGINE CO.
2521 Trinity Bld. New York

4 BUGGY WHEELS FREIGHT PAID STEEL TIRES $8.75

With Rubber Tires, $18.45. Your Wheels Rerubbered, $10.30. I make wheels ¾ to 4 in. tread. Tops, $6.50. Shafts, $2.10; Repair Wheels, $5.95; Axles $2.25; Wagon Umbrella free. Buy direct. Ask for Catalog Q

SPLIT HICKORY WHEEL CO., 530 F St., Cincinnati, Ohio.

SAMSON WINDMILLS

Different than all others and better because of the double gears, big oil boxes, drop-forged wrist pin, removable bearings, center lift. No side strain, no noise. Big, heavy and powerful. 4, 6, 8, 10, 12, 14, 16, 18, 20 ft. diameters. Send for catalog. Also feed mills, pump jacks and gasoline engines.

STOVER MANUFACTURING CO.
260 Samson Ave., Freeport, Ill.

BUILDING MATERIAL PRICES ABSOLUTELY SMASHED!!

Chicago Hous
Chi

Here is the Place and Now is the Time to Buy Building Material

WE have on hand a stock of building material at prices so far below what others are asking for goods of similar quality that there is no possibility of any competition affecting us. We have determined that this great advertisement of ours shall be greater than any of all our past offers. 1912 will be made the banner year in the history of this company. The reason is that we are making prices so low to those ready to buy at once, that the investment must appeal to every fair-minded person.

Each and every article offered in this advertisement is guaranteed to be brand new and first-class in every particular. It is guaranteed to be equal in grade to that offered for sale by the most reputable concerns in the world. The conditions of our guarantee are so plainly stated and so broad in its nature that you cannot help but realize the truth of our offer and be convinced that we deal with you on the "square." We want satisfied customers—we know the value of them. Our aim is to get your trial order and convince you of the virtue of our offer.

We ask that you read every word of this remarkable advertisement. It is the most wonderful one ever published by any business house—it means that we want the business and we will leave no stone unturned to deserve it.

"The Great Pr

$955 Our Price for Material To Build This Barn

Round Barn Design No. 206

Size, 60 ft. in diameter and 16 ft. high to plate. Has 14 sides, each side 14 ft. A 16 ft. Silo in the middle, same being 36 ft. high and will hold 160 tons of silage. Hay capacity, 65 tons. **Will accommodate 100 head of cattle.** The many and excellent features offered by this construction, the high grade materials furnished by us, and our extremely low price makes this barn bargain worthy of thorough investigation.

$620 Our Price For Material To Build This Barn

Our "Star" Barn Design No. 270

Size, 53 ft., wide by 80 ft. long, 24 ft. to comb. **An ideal barn for farmers raising stock** on a moderate scale; balloon type. The hay-mow extends to the ground floor and above the grain rooms on each end of the barn. Cattle stalls on one side of the hay-mow; horse stalls on the other. Excellently ventilated in every part. A practical barn well built of guaranteed first-class material—will give excellent, all around satisfaction.

$698 Our price for material to build this house

House Design No. 6

This is our leader. Size, 23 ft. by 33 ft. 6 in.; 7 rooms and bath. There has never been a design offered that can be built in so economical a manner with less material to produce satisfactory results and a general effect of elegance than this house. **Has satisfactorily been built more than 400 times** during the last two years. A beautiful home at a splendid money-saving price.

$493 Our Price for Material to Build This House

House Design No. 111

Here is a neat, cosy, little cottage that ca be built at the minimum of cost under ou guaranteed building proposition. Size 23 ft. in. wide by 33 ft. Five rooms and bath. **A the comforts desired by home-lovin people.** Extra large porch. Convenient i terior. For the price it is impossible elsewhere secure a home with so many excellent feature

WALL BOARD Our Magic Wall Board is positively the best on the market. This is the Wall Board that has a backing of regular 4 ft. lath and Asphalt Mastic, the face side of which is heavy card board, properly sized, ready for calcimining, paint or wall paper. It comes in sheets four feet square. Write us what space you wish to cover and we will send you descriptive circular and name you delivered prices. Be sure to mention Mastic Wall Board M-W-22. Price per square..... **$2.50**

Lumber Pric

Here is the greatest lumber opportunity ever offered. is our advance 1912 sale to readers of this paper.

Now is the time to build or improve. Each day lumbe increases in value. If you will buy at once, we will make pric so low that you cannot help but be interested. Even if you ha no immediate intentions of building, the time to buy is to-da Store it for future use. We urge you to pay close attention this great lumber announcement.

During the past 60 days we have literally cleaned up manufa turers who needed the money and who were ready to take adva tage of our cash offers. As a result we have twenty-five millio feet of brand new, first-class, high-grade, clean lumber. W will sell it at prices fully 30 to 50% below prevailing quotation

Most of this lumber is now stored in our main yards an sheds at 35th and Iron Streets. It is protected and in as fine co dition as any stock of lumber in the world. If interested com to Chicago at once. We will have no trouble convincing yo that this is the time and the place to purchase.

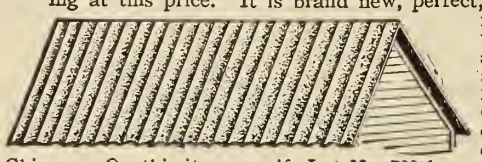
Bring your lumber bill with you. We will load in cars and your own personal supervision. Take into consideration th this is the only concern in the world who is prepared to load once every single item you need in building material. We ca furnish everything from a common board to the finest quarte sawed interior finish—including all kinds of mill-work, doors mantels—colonades, sideboards—nails, builders' hardware—bo composition and steel roofing—guttering—spouting—plumbi

ROOFING PRICES SMASHED

$1.25 FOR 100 SQ. FEET

Never Before and Never Again a Roofing Offer Like This!

We have only a limited amount of this Corrugated Iron Roofing at this price. It is brand new, perfect, first class in every respect, but **light weight.** We bought it at a forced sale and must sell it quick. Sheets 22x24x1¼ inch corrugation **Our wrecking price only $1.25 per square,** delivered F. O. B. Cars, Chicago. On this item specify Lot No. 700 because we cannot pay freight at this unheard price. Let us however, quote you the lowest



Freight Prepaid Prices ever offered in the history of Roofing Materials. We must move our surplus stock on all of our roofing materials and since we have literally "smashed" prices on every kind of roofing material, this is your opportunity to buy what you need, at a tremendous saving. We intend to maintain our leadership as the largest "direct to consumer" Roofing Material Concern on earth and we defy any competitor to meet our prices.

Our Big Advantage The unequalled buying power, made possible by our perfect buying organization and our $1,500,000.00 capital and surplus—makes it possible for us to pick up these "snaps" and pass them along to you.

We Will Save You Money on any and every kind of roofing, siding or ceiling. If you are thinking of re-roofing your house, barn, granaries, poultry houses, etc., write us and we will give you the benefit of our years of experience and our best advice as to the kind and quality you should buy.

Galvanized and Painted Coverings We have full stocks of Plain Flat, Corrugated, Standing Seam and "V" Crimped sheets, suitable for all covering purposes—Roofing, Siding, Ceiling, Lining, etc., **Metal Roofings are the best** and cheapest in the long run, easiest to lay, longest life, non-absorbent; fire, water and lightning proof; cooler in Summer, warmer in Winter; do not taint rain water; with ordinary care will last a lifetime.

Write Today For Free Samples Tell us kind of building and size, also ask for our special low freight paid prices and clear, easily understood roofing proposition, including our **BINDING GUARANTEE** which, for nineteen years has protected every purchaser. Your money back if any goods fail to meet our representation. Don't fail to send coupon for Great Free Roofing Book.

Wire Nails, per keg $1.50

Lot No. 2 A. D. 33—10,000 kegs of new regular Wire Nails, put up 100 lbs. to a keg. These nails are mixed, all kinds in a keg. We do not guarantee any regular assortment. They are same as made by Nail Factories. Make a fine handy assortment. There is nothing the matter with these nails outside of the fact that they are mixed together. This certainly is an opportunity for you to make a purchase. Our price per keg..... **$1.50**

READY ROOFING, per square, 85c

Our Rawhide Roofing is the highest grade roofing at the lowest price ever offered. It has a foundation of tough fibre texture so substantially prepared that **it is well-nigh indestructible.** Every foot carries our iron-clad guarantee to be absolutely right.

In addition to our high grade Rawhide Roofing, we offer for a limited time 10,000 squares of our AJAX BRAND of Ready Roofing at 85c per square. It is put up 108 square feet to a roll. Price includes large headed nails and cement sufficient to lay. While it is practically the same as our Rawhide Roofing, it does not come in continuous lengths; maybe two or three pieces to a roll; of course that does not affect the quality. Our price for this Ajax Brand, 1 ply, is..... **85c**

This price includes freight to Illinois, Indiana, Iowa, Wisconsin, Ohio and Michigan.

Write to-day for free samples

Money Saving Hardware Opportunities

Complete, wrought steel, copper finish front door set. **Artistic, attractive design.** Size, 4¾x3¼; Mortise lock complete. Price per set..... **$1.40**

Complete wrought steel, antique copper finish plated front mortise lock 3¾x3¼. One key and one pair of knobs; two escutcheons with screws. Per set **48c**

Iron Pipe

Rejuvenate Pipe, in random lengths, comp suitable for gas veyance of all inch to 12 inch.

1 in. per ft. **3c**

Send us speci quote for your Also a comple and Fittings.

Our Plant is One of Chicago's Commercial Wonders

Here is a Great 40 Acre Home. We display a wonderful stock of Lumber, Building Material, Roofing, Structural Iron, Pipe, Machinery, Fencing, Hardware, Plumbing material, Heating Apparatus, Belting, Rubber goods, Doors and Millwork, Sewing Machines, Harness and Vehicles, Groceries, Sporting Goods, Crockery, Household Goods and Furniture, Rugs and Floor coverings, Dry Goods, Clothing, Boots and Shoes, Ladies' Wearing Apparel, Jewelry, Wall Paper, Groceries, etc.

Vis Mammoth at

Any of these Books FREE

CHICAGO HOUSE WRECKING CO. 35TH & IRON ST. CHICAGO

Our CATALOGS Are All FREE

Building Material Catalog Our Great Building Material Book contains about 200 pages of building bargains. Gives you every bit of building information—so plain and simple that anyone can easily understand all about our lumber and milling offers. Shows you fully that our millwork is the highest grade possible to produce. Contains also additional information concerning roofing, plumbing, paint, hardware, etc.

Book of Plans Our Book of Plans—positively the greatest book of its kind ever published. 100 carefully studied designs of houses and barns. Extracts from this book are shown in this advertisement. We have spent more than $50,000 in bringing this book to its present point of perfection—it is invaluable to any prospective builder. Send for it today. It is free.

Plumbing Catalog Our Plumbing Catalog completely embraces every phase of the plumbing question, and tells how to install plumbing material. Even if you have no water supply, you can live in the same comforts as city folks. Our prices on plumbing easily save you from 30 to 50 per cent.

Roofing Catalog Our Roofing Book explains all about metal roofing and other styles. Also describes our ornamental ceiling. Tells you how to apply same in the most economical and satisfactory manner. Quotes low prices on high-class material and is invaluable to any property owner.

Paint Book Our full Paint Superintende son. Shows actual you full information ily do their own pa

Heating Appa formation in regar and steam heating. advice as to the p ticular needs. Exp operations, so tha mechanical intelli without expert assi

Wire and Fenc completed and

CHICAGO HOUSE WRECKING

SEND YOUR "LUMBER BILL" FOR OUR FREIGHT PAID ESTIMATE

Wrecking Co.

ago

...ce Wreckers"

Our Broad and Binding Guarantee Protects You

THE Chicago House Wrecking Co. was organized in 1893, and for 19 years has been well and favorably known to the public. Our transactions speak for themselves! From Maine to California—in all parts of the world—customers by the thousands will confirm our honest and upright methods of conducting business. We do not ask you to buy a "pig in a poke"—we give you the opportunity to buy from us in the open, with every possible doubt removed. ***Here is our offer:***

If you buy any goods from us that are not fully up to our representations in every way—or if they fail to come up to the expectations that our literature and language have lead you to expect—then, at our expense for carriage both ways, we will take back any such unsatisfactory merchandise or material and refund you the full purchase price, in addition to the carrying charges. All we ask is that you promptly advise us of any dissatisfaction, and we promise you fair, square, manly advice, and the opportunity to return the goods as mentioned above.

Our capital stock and surplus is in excess of $1,500,000.00. We refer you to the publisher of this or any other paper—to any express company—to any of the commercial agencies—to any of the leading financial institutions, and more especially to our Chicago depositories—the Drovers Deposit National Bank, the great Chicago Stock Yards institution; or to the Continental and Commercial National Bank, the largest financial institution in the West.

$835 **Our Price for Material to Build This House**

House Design No. 130

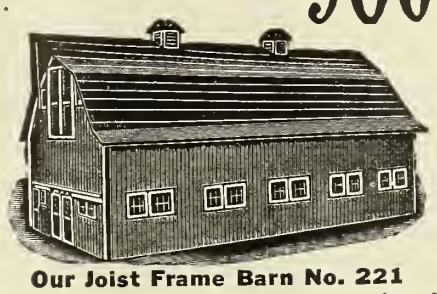
Size, 25 ft. 10 in. x 29 ft. 6 in.; 8 rooms and bath, pantry, vestibule and large hall. A square, solid, substantial construction. **All space is advantageously utilized.** The Colonial windows and porch columns are distinctive features. For convenience and artistic arrangement, general elegance of appearance, and low price, this house is unequalled.

$635 **Our Price for Material to Build This House**

House Design No. 149

The Mansard roof construction of this design enables the owner to utilize all space to the best advantage and get the very most to be had for the money. Size 21 ft. wide and 28 ft. deep six rooms, bath and basement. **This design offers more convenience than many larger and higher priced houses.** It is constructed of very best materials at a great saving.

Our price for material to build this barn **$580**



Our Joist Frame Barn No. 221

Size, 36 ft. by 48 ft. Height to top of roof, 38 ft. 6 in. **The most practical and serviceable barn ever designed.** No heavy timber in the entire structure. Self-supporting roof. No joists in hay-loft. This design represents strength, rigidity, economy of construction, and is absolutely dependable and substantial. Write us for more complete information.

Our price for material to build this barn **$639**

Barn Design No. 250

Size, 30 ft. wide and 60 ft. long, 18 ft. to top of the plate. **A barn arranged exclusively for horses.** Has 12 single stalls, 5 ft. each, and 6 double stalls, 10 ft. each. Ten foot driveway. Can also be used as a horse and a cattle barn and will accommodate **12 horses and 18 head** of cattle. A building of brand new high grade materials, dependable construction, **sanitary—generally convenient throughout.**

...es Smashed

...aterial—heating apparatus—gas and lighting fixtures—lighting plants, both acetylene and electric, and in fact every item that enters into the construction of a building. We have building material for every purpose, whether you wish to construct a barn, shed, bungalow, residence, office building, store building, corn crib, church or meeting house.

We cannot urge you too strongly to note the importance of this occasion. If you cannot make the trip to Chicago yourself, and have no one to send, **MERELY MAIL** US YOUR COMPLETE LUMBER AND BUILDING LIST FOR OUR LOW FREIGHT PREPAID ESTIMATE. In every instance we will name you a price far below prevailing market quotations. We will explain to you grades we are figuring on so plainly that you cannot but understand.

Our proposition is backed by a guarantee so broad and binding that there is no possible chance for you to make a mistake. This company has a capital stock and surplus in excess of $1,500,000.00, a very national and private banking institution in this country is acquainted with our responsibility.

We do not require cash in avdance—write us for our special and liberal terms that protect you perfectly.

Send us your list to-day and you will be readily convinced that every word of this advertisement represents actual facts.

1,500,000 SHINGLES We are overstocked on shingles, and want to move the same at once. We handle nothing but the very best grade of Pacific Coast Red Cedar Shingles, made of live timber of standard Manufacture and Grading. Guaranteed equal and better than any of the same brands on the market today. Prices are exceedingly low, and are good for the above quantity only. Do not fail to send us your order immediately.

Extra Star A Star Washington Red Cedar Shingles . . . . . **$3.25 per 1,000**

5-2 Strictly Clear Washington Red Cedar Shingles. . . . . **$3.75 per 1,000**

5-2—6 Inch Clear Butts, Washington Red Cedar Shingles . . . . . **$2.75 per 1,000**

$26.30 Buys Complete Bathroom Outfit

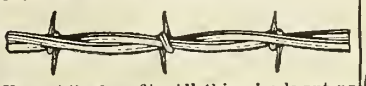
This illustration shows our Modern Sanitary Plumbing Outfit. Gives you all the conveniences and comfort of Plumbing outfits sold at twice this price. It is strictly A No. 1 and first class in every particular. This is our lot No. 5 AD 1. We have other outfits ranging in price up to $92.50.

We will furnish all the Plumbing material needed for any of the houses shown in this advertisement, including a one piece Roll Rim Kitchen Sink, 30 gallon range boiler, a complete bathroom outfit—everything absolutely needed for **$83.95**

GALVANIZED WIRE PER 100 POUNDS $1.25

Greatest Sale on Record

Best Quality Barbed Wire at Wrecking Prices We bought from Manufacturers an enormous stock at an exceedingly low price.



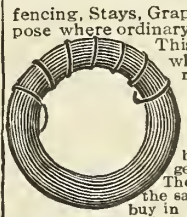
You get the benefit. All this wire is put up on reels regularly, same as you would buy it from any concern. Prices quoted below are for prompt acceptance only:

Lot No. 2 A. D. 25—Painted Barbed Wire, full weight, 2 and 4 point, about 100 lbs. to the reel, per 100 lbs., ... $1.50

Lot No. 2 A. D. 26—Galvanized, same as above, per 100 lbs. $1.85

Now is the time to place your order while these remarkably low prices exist. Never before have such quotations been made. No one can equal our low prices. We urge you to buy now, even if you are not ready to have your Wire go forward. We will accept a reasonable deposit and enter your order, shipping at such time as suits you. We can ship immediately from our Chicago stock.

Smooth Galvanized Wire, Per 100 Lbs., $1.25 Lot No. A. D. 29—Suitable for fencing, Stays, Grape Vines or any purpose where ordinary Wire is used.

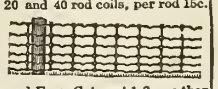


This Galvanized Wire which we offer at this remarkably low price is new regular stock, except that it comes in irregular lengths, ranging anywhere from 50 to 250 ft. We bundle these lengths together in coils of 100 lbs. The wire itself is exactly the same as what you would buy in the regular way. The only difference being that these lengths are not continuous. This Wire is known as Galvanized Wire Shorts. Handy to have about the farm for many purposes. It is extensively used by fruit growers, fence builders and for all kind of repairs, etc. Absolutely new, smooth, clean wire. Price per 100 pounds as follows:

No. 6 gauge	$1.25	No. 9 gauge	1.50
No. 7 gauge	1.35	No.11 gauge	1.60
No. 8 gauge	1.40	No.12 gauge	1.65
		No.14 gauge	1.75

Above prices are based on orders for at least 100 lbs. Place your order promptly, as these low prices will soon exhaust our stock.

26 inch Hog Fencing Extra Heavy Galvanized Per Rod 15c Lot No. 2 A. D. 31—Here is a fine heavy weight smooth spring wire galvanized Hog Fencing, 26 inches high, strongly constructed. The best all around fencing manufactured. Don't compare this Fencing with the cheap light weight kind so extensively being advertised. This is a Fence built for continuous and lasting service. It's the kind of a fence every up-to-date owner ought to buy. Absolute satisfaction guaranteed. Price put up in 20 and 40 rod coils, per rod 15c. This same fencing is furnished in heights from 20 to 50 inch at corresponding low prices. A complete line of Poultry Fencing in all heights.



"Premier" Driveway and Farm Gates at 1-3 less than usual prices. Also a complete line of Walk Gates and Poultry Gates. Write for our prices on Ornamental Lawn Fencing. We can furnish anything needed at a material saving in price. All quotations in this advertisement are made subject to prior sale on account of limited stock.

Wire for Reinforced Concrete Lot No. 2 A. D. 30. Our reinforced concrete stays are made of heavy galvanized wire, superior to smooth or twisted wire. They cannot slip and are acknowledged the best. We can furnish any length. Per 100 lbs., $2.25.

Galvanized Staples Lot No. 2 A. D. 35. New regular Fence Staples, put up in 100 lb. kegs, also in smaller packages. When ordered in less than 100 lbs., our price, per lb. 3c

Price per keg of 100 lbs. $2.50

Fence Posts Write for our low quotations, advising us how many you need and what length.

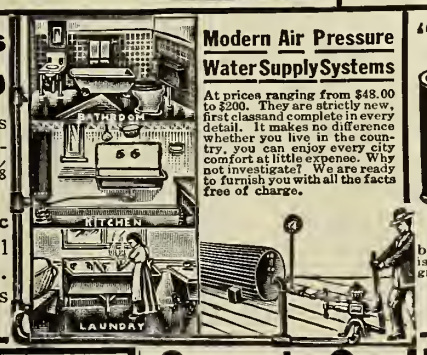
Telephone Wire High Grade BB Telephone Wire at 40 per cent saving.

Write Today for Free Wire and Fence Catalog Our catalog on Wire and Fencing quotes lower prices than that offered by any other concern in the world. Fencing, Wire, Staples, Nails, etc.

...d Fittings

...DENATED

...with couplings ..., water and connections. Sizes ⅜ ...¼ in., per ft: 3½c ...ttions and we will ...ct requirements. ...stock of Valves



Modern Air Pressure Water Supply Systems

At prices ranging from $48.00 to $200. They are strictly new, first classand complete in every detail. It makes no difference whether you live in the country, you can enjoy every city comfort at little expenee. Why not investigate? We are ready to furnish you with all the facts free of charge.

"PREMIER" HOUSE PAINT, Per Gallon $1.08

Mr. V. Michaelsen, Supt. of our Great Paint Dept., is probably the best known paint man in the world. His picture has appeared on millions of gallons of cans. He is our guarantee of quality. Our Ready Mixed "Premier" Brand of Paints are made under a special formula and will give the best service and satisfaction. Our prices range from **$1.08** to **$1.21,** depending upon quantity.

Our "PREMIER" Barn Paint is an Ideal protection for barns, roofs, fences, outhouses and all general purposes. This is a paint in which Mr. Michaelsen has put all his personality. Comes in green, maroon, yellow, lead, red and slate. **82c**

In 1 gallon cans, per gallon 82c
In 25 gallon cans, (1-2 barrel), per gallon 72c

Write to-day for our Great Color Card and prices.

...our ...-Acre Plant ...icago

Come to Our Headquarters at Chicago

If you will make the trip to our institution at 35th & Iron Sts., at Chicago, you will be convinced that every word we say about our wonderful institution is the real truth—that in fact we have not painted the picture strong enough—that our institution is greater by far than you ever had any idea. If you will come, we will show you in stock all the various articles offered in this advertisement, besides a wonderful additional quantity of general merchandise. Our business includes 28 great departments, and they are all situated at our main headquarters. We have everything—in fact from a needle to a locomotive.

Fill Out Coupon for Free Catalog

...t Book has been carefully compiled by our new ... Mr. V. H. Michaelsen of the paint. Gives ... that anyone can easily. Send for it today.

...s Our Heating Catalog includes full information on warm air, hot water ...es you the necessary ...r plant for your particular the simplicity of our ...nyone with ordinary ... can install the plant ...e.

Our Wire and Fencing Circular is just ...ibes Barbed Wire, Smooth Wire, Telephone Wire, Woven Wire Fencing, Lawn Fencing, Posts and all Wire and Fencing material of all kinds.

Furniture and Rugs Our big Household Catalog includes furniture, rugs and everything needed to completely equip your home, hotel or club house. Quotes lower prices than you can possibly purchase for elsewhere. Gives illustrations in natural colorings of floor coverings. Every article in this book guaranteed absolutely first-class and brand new.

Pipe and Fittings Our list of Pipe and Fittings shows you the very best and most practical pipe to use for your purpose, also describes all the necessary fittings and valves and quotes prices so low as to defy any competition.

Ladies' Wearing Apparel A splendid book of fashions in ladies' and children's wearing apparel. Each garment shown is designed with a view to please the most particular. Is made of guaranteed materials, stylish and perfect fitting. Each carries with it our guarantee of absolute satisfaction, and our prices save you at least 50 per cent. This book is free.

Concrete Block Machinery Catalog Our Great Concrete Block Machinery Catalog describes the latest and best Machines manufactured. Our prices 30 per cent less than others ask for Machinery of equal quality. Includes practically everything needed to turn out the very finest and best Concrete Blocks. Also tells about our Mixers.

CUT OUT THIS COUPON Fill it in and mail to us at once

Chicago House Wrecking Co.,
35th & Iron Streets, Chicago.

I saw your wonderful advertisement in Western Fruit-Grower—399

I am interested in.....

.....

.....

Please send me without any obligation on my part and free of cost full information regarding these subjects. Also send me free of cost the following catalogs. (Place an X mark in square opposite catalogs you desire.)

My Name is.....

My Address is.....

County.....*State*.....

R.R......*P.O. Box*.....

- ☐ Building Material Catalog.
- ☐ Lumber Price List.
- ☐ Book of House and Barn Plans.
- ☐ Plumbing Material Catalog.
- ☐ Catalog of Heating Apparatus.
- ☐ Paint and Varnish Catalog.
- ☐ Fencing and Wire Catalog.
- ☐ Metal and Composition Roofing Catalog.
- ☐ Circular on Concrete Block Machinery.
- ☐ Dry Goods Catalog.
- ☐ Catalog on Acetylene Lighting Outfits.
- ☐ Gasoline Engine Catalog.
- ☐ Furn. and Household Goods Catalog.
- ☐ Men's Clothing Catalog.
- ☐ Ladies' Wearing Apparel Catalog.
- ☐ Catalog on Boots and Shoes.
- ☐ Sporting Goods Catalog
- ☐ Harness and Vehicle Catalog.
- ☐ Sewing Machine Catalog.
- ☐ Grocery List (issued every 60 Days).
- ☐ Jewelry Catalog
- ☐ Circular on Pipe and Fittings.

...O., 35th & Iron Sts., CHICAGO

WESTERN N. Y. MEETING

Report of Annual Meeting of Western New York Horticultural Society Held at Rochester

The annual meeting of the Western New York Horticultural Society is getting to be like a three-ring circus, in that one who attends it must miss some of the good features, for several sessions are held at one time. The meeting is divided into sections, and while a large part of the membership may be discussing general horticultural subjects, round-table sessions will be held in near-by rooms, to discuss such subjects as small fruits, vegetable gardening, shipping associations, etc. It is very hard, therefore, to get a full report of this meeting.

The annual session at Rochester, January 24 to 26, was in every way up to previous meetings. It was remarked by many persons attending that the exhibit of fruits was a great improvement over previous years, especially in the packing. A good exhibit of boxed apples was made, and the quality of the pack was a marked improvement over any exhibit made in previous years. The box as an apple package is increasing in favor among New York growers, especially for better grade of apples. In fact, a still smaller package is used by Prof. Samuel Fraser, manager of the orchards of the Wadsworth Estate, who is trying the experiment of marketing apples in cardboard cartons holding a dozen apples each, where the apples are of medium size, and which hold nine apples of the size of Northern Spy.

Prof. Fraser had a good exhibit of apples in these cartons, and it attracted much attention. The cartons are 9x9 inches and are about three inches deep; they hold three rows of apples of medium size, four apples to the row, and one layer of apples fills the box. Upon opening the carton, therefore, every apple in the box can be seen, without removing from the box. A dozen of these cartons fit in a carrier made of heavy cellular board, making a very neat package. It is the intention to sell these cartons to consumers who want small packages of fruit, and it is believed a good demand can be created for them. Every carton will bear the name of the Wadsworth Farms, with Prof. Fraser as manager, and if any fault is found with the apples the purchaser will know where to make his kick.

The exhibits of spraying machinery at meetings of New York fruit growers are always a feature. The basement of the large building in which the meetings are held is always filled with exhibits of practically every kind of spraying appliance made. Power machines are most favored in New York, and about twenty different machines were shown at the recent meeting. Manufacturers of insecticides and fungicides also make a feature of their exhiblts, so that as an educational institution the New York meetings are likely not equalled by any others held anywhere in the United States.

The Western New York Horticultural Society is remarkable in that it has nearly sixteen hundred members, its annual dues are only $1, and its president and secretary have served in their respective places for many years. W. C. Barry is president and John Hall is secretary, and the splendid record of the society is largely due to the efforts of these two men.

The Fruit-Grower representative could not attend all the sessions of the meeting, and our report will cover only the points which seemed of special interest in the meetings he attended.

In discussing the insects which were in evidence during the year Prof. P. J. Parrott of the Geneva Experiment Station called attention to the fact that the California pear thrips appeared in the Hudson River valley in 1911. This insect works in the opening buds and blasts the flower parts, so that they look as though they were blighted. This pest attacks blossoms of pear, apple, apricot and sweet and sour cherries.

Pear psylla and San Jose scale were as abundant as usual. Heretofore it has been recommended to spray for psylla just after the insects hatch, but he believes that if trees are regularly sprayed, the summer spraying can be abandoned.

Scale has been unusually abundant, due, it is thought, to the early date of breeding of the insects. Prof. Parrott still believes that lime-sulphur is the best spray for this insect, in the hands of the average grower, partly because of the fungicidal value of lime-sulphur.

Someone asked the cause of knotty peaches and pears in 1911, and Prof. Parrott gave it as his opinion that the tarnished plant bugs were responsible for the damage. No effective way of fighting this insect is known. Clean cultivation, keeping down weeds and grass, will help. However, this insect is found in woodlands, and orchards near forests will be more troubled by this insect.

Fighting Shot-Hole Borers.

"What shall be done to fight shot-hole borers?"

Prof. Parrott said this insect attacks weakened trees as a rule, and it is important to keep trees growing and in a vigorous, healthy condition. If one has trees which are badly infested with this insect it will be well to burn them. The speaker told of one peach orchard he had visited, in the corner of which was a pile of dead trees. In this orchard the insect was particularly injurious. If one has trees with branches infested with this insect, such branches should be cut out and burned.

"If you have trees only slightly infested with shot-hole borers, I would recommend that you cut out the worst-infested limbs, spray the trees while dormant with lime-sulphur mixture, thickened with lime, and then spray again with a thick lime whitewash during the summer. Cultivate the trees well and keep them growing, and try to overcome the effects of the insect."

"How much dry arsenate of lead should be used to fifty gallons of water, and is it cheaper or better than the paste arsenate?"

Prof. Parrott said the dry arsenate is supposed to be about twice as strong as the paste form, and it should be used at the rate of one and one-half pounds to fifty gallons of water, as against two and one-half pounds of the paste form. He doesn't know how the dry arsenate will stick to the foliage, nor as to its poisoning properties, as compared with the paste form of the poison.

Prof. Herrick said he had used the dry arsenate of lead at Ithaca and it seemed to be as effective as the paste form, and the cost was about the same.

"Would you add arsenate of lead to every application of lime-sulphur, including the dormant spray?"

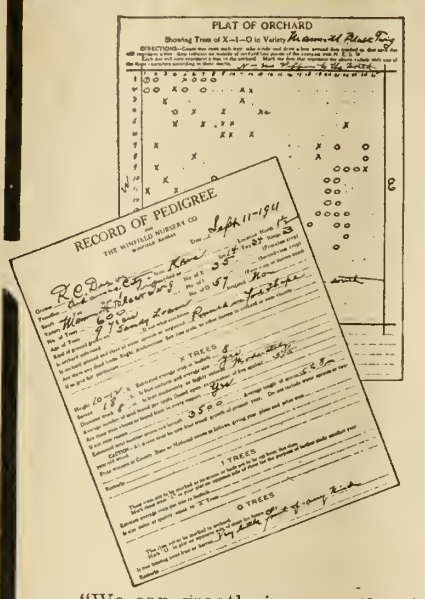
No one answered in the affirmative, for no good purpose could be served by combining the two for the dormant spray. Prof. Parrott said, however, that if he delayed the dormant spray until buds were showing green, as so many growers do, he would add arsenate of lead, to control bud moth and other similar insects.

"When should cherry trees be sprayed to prevent wormy fruit?"

Keep Tanks Clean.

Prof. Parrott: "Two insects cause wormy cherries, the cherry maggot and the plum curculio. The maggot is not controlled by spraying; clean cultivation is the best way of fighting it. Curculio can be controlled by spraying. Spray with arsenate of lead at the rate of two pounds to fifty gallons of water when the husks are falling from the young fruits. In badly infested orchards would make an earlier spraying also, using the same mixture just as petals are falling.

In discussing the subject, "What a Spray Nozzle Should Do," Prof. How-



"Millions of Dollars Saved

and years of privation and suffering to the fruit growers by planting pedigreed trees" says George T. Powell of the New York Experiment Station.

"We can greatly improve the size, flavor, color and quality of fruit; make trees come into bearing several years earlier; cause them to bear full crops every favorable year instead of biennially, and render them largely resistant to certain insect enemies and diseases, by means of a simple process which takes effect at once.

"This method is simply the propagation of fruit trees by means of buds taken from mature trees of perfect health and known record of production, instead of using buds from young nursery trees which have never borne fruit or shown individual merit.

"I am convinced that every new orchard in the country could be made to produce a profitable crop two or three years earlier than at present, if the trees were all budded from individuals that had come into bearing that much earlier than their companions. Our nursery practice is directly responsible for much of the privation and suffering which fruit-growers often endure while waiting for their trees to come into bearing. The additional profit that could be gained if everybody were to use early-maturing stock would run into millions of dollars."

YOU CAN GET PEDIGREED TREES

Send in your order now for some of the following, a brief pedigree of which is given:

Jonathan "A"—Parent trees seven years old, height 18 feet, spread 14 feet, diameter of trunk 8 inches. Produced regular, heavy crops; 1910 bore 11 boxes fancy fruit. Color very dark red. Prize winner at four different apple shows. Seventy thousand of this variety which we wish to place in planters' hands who will report upon them and give us exclusive use of pedigree wood out of next generation.

Mammoth Black Twig "C"—Parent trees seven years old, height 20 feet, spread 20 feet, diameter of trunk 11 inches. Heavy crops each year; 1910, 8 boxes fancy. Color good. Five thousand trees of this variety which we have been breeding up for years with a view of greatly increasing early bearing.

Gano—Parent trees nine years old, height 20 feet, spread 17 feet, diameter of trunk 10 inches. Fruited for three years, produced four boxes of fancy fruit, which won first prize at the Colorado National Apple Show, carload from this same orchard won $250.00 loving cup. Pedigreed, improved strain. Will make you a large income for four years before ordinary Gano would come into bearing. Regular price charged for these trees, but exclusive right reserved for scions from these trees.

Ragan (Black Ben)—Parent trees fifteen years old, height 25 feet, spread 25 feet, diameter of trunk 12 inches. Regular, heavy crops; 1910 crop, 22 boxes fancy fruit. The Ragan (Black Ben) are prize winners in every exhibit shown. These trees cheap at $1.00 each for commercial planting.

Rome Beauty "D"—Scions from nine-year-old trees, having height 12 feet, spread 10 feet, diameter of trunk 8 inches; bore heavily for three years; 1910 crop, 10 boxes of fine fruit. Trees bred from six distinct strains, no one of which was taken from trees that bore less than 10 boxes of fancy fruit. One tree of this pedigreed Rome Beauty would be a greater money-maker than five trees of ordinary Rome Beauty.

Spitzenberg "A"—From nine-year-old trees; height 16 feet, spread 14 feet, diameter of trunk 8 inches. Bears regularly, and in 1910 produced 6 boxes of fine fruit. Only a few left.

Stayman Winesap "C"—Parents nine years old, height 20 feet, spread 18 feet, diameter of trunk 8 inches. Winner of four first prizes Denver, 1910. Life-sized reproductions in natural colors shown in "Pedigreed Horticulture."

Winesap "A"—From eleven-year-old trees, having height 12 feet, spread 12 feet, diameter of trunk 8 inches; fruited regularly and bore heavy crops; 1910 crop, 14 boxes fancy. Spoken of in "Pedigreed Horticulture" as "Silver Medal Winesap." Unusually large, dark red, surpassing in beauty and excellence any other strain of Winesap. Pedigreed wood taken from five or six proven strains, none of which produced less than 10 boxes of fancy fruit to the tree and some of which produced as high as 26 boxes.

W. W. Pearmain—Ten-year-old trees, height 20 feet, spread 20 feet, diameter of trunk 10 inches. Bore regularly for four years; in 1910 produced 15 boxes fancy fruit. No trees in this strain propagated from parent trees producing less than 10 bushels to tree. Fruit from W. W. Pearmain "B" sold last year at $3.00 per box. We verily believe that an orchard of this strain of Pearmain will pay $1,600.00 per acre and begin producing four to five years ahead of the ordinary Pearmain. All rights reserved from orchards sold in this strain for future propagating wood.

Orders must be refused for pedigreed trees when our stock is exhausted, as we are the only large growers of this line of stock.

WINFIELD NURSERY CO.

J. MONCRIEF, President

Originators of Pedigreed Trees Dept. A, Winfield, Kansas

SWIFT'S ARSENATE OF LEAD

HIGHEST QUALITY

Insect Pest Destroyer!

Easy to mix—sure to kill. Death to all leaf-eating insects. Save your trees, fruits and vegetables. Put up in paste or dry form.

(Conforms to the National Insecticide Act of 1910.)

Be Sure and Ask for SWIFT'S

and thus always secure GUARANTEED HIGHEST QUALITY.

FOR SALE BY LEADING DEALERS EVERYWHERE

MERRIMAC CHEMICAL CO.

Send for Circular. 49 Broad Street, Boston, Mass.

Please make it a point to always mention The Fruit-Grower when you write in response to an advertisement.

SPRAY The IRON AGE Traction Way

If you grow field crops in rows, you need this traction sprayer. We claim that our **Iron Age Traction Sprayers** are equipped with the best single or double acting pumps of any field sprayers made. They have less slippage than any other. The solution is always kept thoroughly mixed and delivered at high pressure in a fine spray, regulated by our adjustable relief valve.

IRON AGE Traction Sprayers have 55 and 100 gallon tanks, 4 or 6 row sprayer equipment, special rigs for grain, pickles and other crops, wind shift attachment, adjustment for different width rows, pressure gauge and center drive from both wheels.

See this sprayer on your dealer's floor. Write us at once for special booklet. You owe it to yourself to know all about this machine. A post card will bring the information. We make a complete line of potato machinery, garden wheel hoes and drills, etc.

BATEMAN M'F'G CO., Box 5069 Grenloch, N. J.

ard W. Riley of Cornell University said that fruit growers would have better success with their spraying and their machinery would last much longer if all nozzles and pumps were cleaned every night before quitting work; force clear water through the pumps and nozzles until it comes out clear. Keep tanks clean and strain all mixtures as they are put in the tanks, and nozzles will cause less trouble.

Question Box.

"Has anyone used dynamite in clearing land of stumps, or in planting orchard trees?" One man had successfully used dynamite on all stumps except elm. Another member said that while he had not used dynamite in planting trees, a neighbor had and was much pleased with results. The work was less expensive than where soil was prepared in the old way, and the subsoil was loosened up to a great depth, and trees had done exceptionally well.

"Which shows most damage to apples when used as a fungicide, bordeaux mixture or lime-sulphur?" Bordeaux seems to have caused much greater damage.

"In planting an apple orchard, is it better to get one-year trees or two-year-olds?" Prof. Hedrick said that if he could get two-year trees which had been properly headed he would prefer them to one-year trees. Practically, however, this can seldom be done, and it is safer to buy one-year trees and then form the head just where you want it.

"Is there danger of planting too many Montmorency cherries?" There seems to be not enough fruit of this variety now, and no one feared an over-production soon.

"Which is preferable as a filler in an apple orchard, Alexander or Twenty Ounce?" The latter is the better apple, but the former makes a better filler.

"Is there any need of planting any other variety with Rome Beauty for purpose of cross-fertilization?" No, the Rome Beauty is self-fertile.

"Who has planted alfalfa in an orchard as a cover crop?" No one seemed to have done so, and it seemed to be the general opinion that alfalfa seed is too expensive to justify its being used as a cover crop, to be allowed to remain only about two years at most.

"Was the lack of color of Roxbury Russet apples the past season due to lime-sulphur spray?" It was believed that this had something to do with it, and one member said that his apples of this variety which had been sprayed with lime-sulphur lost their characteristic russet appearance. It was generally noted, however, that Roxbury Russet apples, even on unsprayed trees, were off in color the past season.

"Does it seem likely that city men can take up apple-growing and make a success of the work?" It was the general opinion that all depended on the man.

Outlook For Peach Growing.

R. D. Graham, of Michigan, discussed this subject in a most interesting manner. Mr. Graham has a peach orchard in Michigan and is also interested in some orchards in Texas. He said that just now peach culture is neglected, and apple growing is boomed. The high prices paid for apples lately are responsible for this, and everyone is planting apple trees. Mr. Graham had no fault to find with the apple as a money-making crop, but said that when one plants apple trees he makes a permanent investment, while the returns from a peach orchard are great in a favorable season, and one gets his money back in a much shorter time. He believes in pushing peach trees to the limit, make their life a merry one, and a short one, and dig them out when they are unprofitable. Peach trees should bear at three years of age, and in Michigan are usually in their prime at ten years of age. He used to think that fifteen years, twenty years, or even longer was the life of a peach tree, but since yellows and the "little peach" disease have become so destructive one cannot depend on trees being profitable after about ten years of age. He now plants trees close, keeps them growing, and digs them out when they are declining.

"Notwithstanding our costly experience with yellows," said Mr. Graham, "we know but little about the disease. We don't know what causes it, nor how the disease is spread, but we believe we buy the disease in the tree and that it is spread through the pits used in growing stocks. The disease doesn't seem to appear anywhere in the South. I am interested in an orchard in Texas, and we took some Elberta trees from Michigan down there and planted them. At the same time part of the same lot of trees were planted in Michigan. The latter orchard went out with the yellows, while the Texas orchard has never been attacked.

"Then we tried bringing trees from Texas to Michigan. Part of a lot of Texas-grown trees were planted in that state, and part were brought to Michigan. The Texas trees remained healthy and vigorous, while the trees brought north were attacked by yellows and had to be dug out."

Mr. Graham said that while the disease seems to spread through an orchard, he would not hesitate to replant a tree where one had been killed by yellows; the chances are the tree will be attacked, anyway, but he could not see that there was any greater danger because the first tree had been taken out because of the disease.

The speaker said he believes the best location for growing peaches will be found along the Great Lakes and in favored localities of the North. There is good money in growing peaches, but more attention must be paid to marketing the crop. Smaller cities and towns are neglected, while large cities are glutted. The Grand Rapids growers now sell practically all their crop on track, buyers coming from all points to buy the fruit, most of which is shipped in bushel baskets.

The discussion following this paper developed the fact that in Western New York peach buds have been badly winter-killed. It was stated that not more than 10 per cent of the fruit buds are alive, but if no further injury occurs this will be enough to make a good yield of fruit.

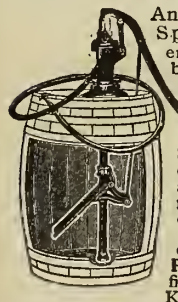
Too Many Culls.

Mr. Graham was asked the best time to prune peach trees, and said that he preferred to prune just before growth starts in the spring.

In discussing the marketing of fruits, R. G. Philips of the International Apple Shippers' Association was called upon and gave the growers some facts which opened their eyes. In telling why barreled apples are not moving this year, Mr. Philips said it was largely summed up in the one word, "Junk." Too many cull apples are barreled and sold; in fact, there are not enough cider mills to work up the low-grade apples, and as a consequence a lot of the latter are sold as good fruit.

Mr. Philips presented some figures comparing exports of apples from the United States with Canadian exports, which were not at all favorable to the growers of apples south of the international boundary. While Canadian exports are increasing by leaps and bounds, exports from United

A STAHL Spray Outfit Shipped on Receipt of $3



Any Stahl Barrel Sprayer in our entire Catalog will be shipped on receipt of $3. If satisfactory, remit the balance and it's your outfit. If not the greatest Sprayer bargain you ever heard of, send it back and get your $3. You take no risk. Every Sprayer offered at a bargain price. Choose from 21 styles, including complete line of Power Sprayers, Tank Outfits, Barrel and Bucket Pumps, Knapsack Sprayers, etc.

Handbook on "Orchard Enemies"—FREE

The famous book on the Fungus Diseases and Insect Pests, Coddling Moth, Canker Worm, etc., which do millions of dollars' worth of damage to fruit and orchards.

The book is FREE. Write for it. Remember, only $3 brings any Barrel Spraying Outfit for 10 days' trial.

WM. STAHL SPRAYER CO., Box 767, Quincy, Ill.

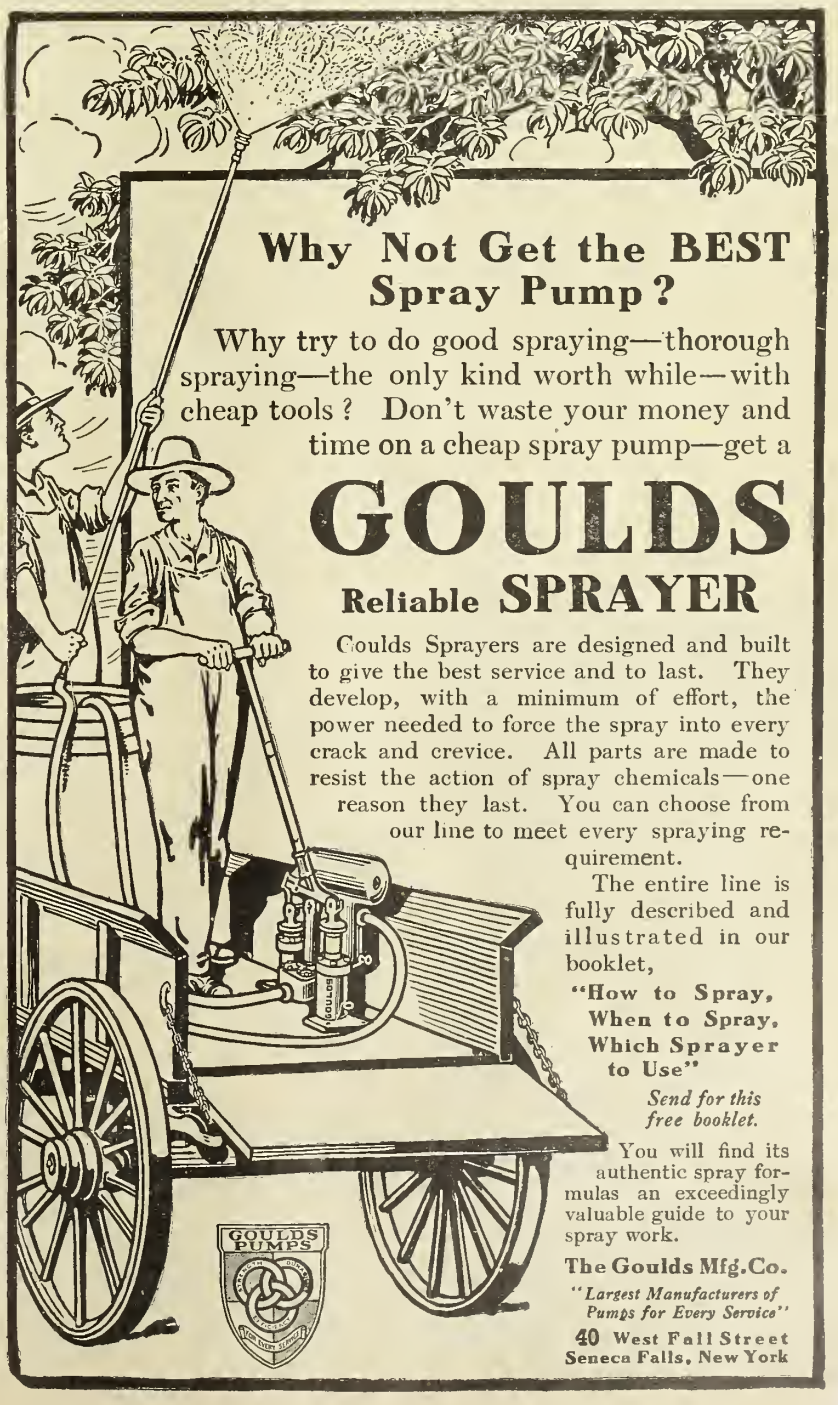
MYERS SPRAY PUMPS

Now is the time to think about Spring Spraying and Myers Spray Pumps. Spraying is now compulsory in many states; is advised and urged by Experimental Stations, and is given careful consideration at all County and State Grange Roundups and Farmers Institutes, so that there is no longer any question about the absolute necessity of Spraying at the Right Time in order to obtain proper results and Perfect Fruit.

Spring Spraying starts in February and March. Some spray even earlier. To get the best results you must be prepared to Spray the Myers Way with a Myers Outfit-Bucket, Barrel or Power—according to your spraying requirement.

You are not indifferent to the advantages of Successful Spraying, but you may not be properly equipped. Get in touch with us for convincing information. Write for our new Spray Catalog which, besides giving you valuable information concerning the proper methods and time for spraying, formulas, etc., also illustrates and describes an unequalled line of Spray Pumps, Spray Nozzles, Pipe Extensions and Spray Accessories—A Line For Every Spraying Need.

F. E. MYERS & BRO.
160 ORANGE STREET — ASHLAND, OHIO.



Why Not Get the BEST Spray Pump?

Why try to do good spraying—thorough spraying—the only kind worth while—with cheap tools? Don't waste your money and time on a cheap spray pump—get a

GOULDS

Reliable SPRAYER

Goulds Sprayers are designed and built to give the best service and to last. They develop, with a minimum of effort, the power needed to force the spray into every crack and crevice. All parts are made to resist the action of spray chemicals—one reason they last. You can choose from our line to meet every spraying requirement.

The entire line is fully described and illustrated in our booklet,

"How to Spray, When to Spray, Which Sprayer to Use"

Send for this free booklet.

You will find its authentic spray formulas an exceedingly valuable guide to your spray work.

The Goulds Mfg. Co.

"Largest Manufacturers of Pumps for Every Service"

40 West Fall Street
Seneca Falls, New York

States are either decreasing or barely holding their own. The past year exports from the United States decreased 100,000 barrels, while Canadian exports increased 800,000 barrels.

"What causes the difference?" asked Mr. Philips. "Canada has a fruit marks act, while we have no such law on this side of the line. Until we can raise our standard of grading and packing apples we can expect to see our exports still further decrease, for our United States consuls report that confidence in our apples has been practically destroyed in foreign markets. The International Apple Shippers' Association is working for the passage of the so-called Lafean bill, which has been introduced in the present session of Congress as the Sulzer bill. This law is not drastic in its requirements; it simply provides that the grower who wants to take advantage of its provisions may mark his packages so that the buyer will know that the fruit is a standard grade. We ask the suppport of fruit growers generally for this bill, and believe that its adoption will mean much for the apple industry generally. Write to your congressman urging his support of this bill."

Plums for New York.

Prof. U. P. Hedrick of the New York Agricultural Experiment Station discussed the subject of "Plums" most interestingly. He began by calling attention to the vast quantities of plums and prunes which are shipped into eastern states from the states of the Far West, these shipments amounting to perhaps $5,000,000 worth of fresh and dried fruit annually, and he said that much of this money could be kept at home if New Yorkers were to take up the subject of plum culture intelligently. Everybody is talking apples now, the speaker said, but he asked if it is not possible that we are neglecting other fruits to some extent, and especially are we neglecting plums.

After calling attention to the great list of varieties of plums of the various types, Prof. Hedrick said he believed that New York growers should stick pretty close to the tried sorts. The Green Gage sorts are perhaps the best, followed by Italian and German prunes; the latter are perhaps too tart for dessert fruit, but are ideal for canning. Grand Duke and Archduke are good. Lombard is a popular sort, but quality is not high enough. Bradshaw is a very popular variety, but quality is poor.

Damsons are very easily grown and do better in New York, perhaps, than anywhere else in America. An acre of Damsons well cared for should bring about $200 net year after year. Shropshire is perhaps the best Damson; French is not so productive nor so hardy, but of better quality and a little later, which is an advantage.

The Japan varieties have suffered from over-praise, resulting in their being planted too extensively. Burbank and Abundance are the only ones which should be planted in New York, and they should be planted only sparingly. Of the two, Prof. Hedrick would prefer Burbank for New York conditions. Native plums are grown where the domestica class will not thrive, and some day we will have a fine lot of plums of native origin.

Prof. Hedrick said plums should be planted in well-drained soil, and a north slope is perhaps best. The domestica and Damsons should be planted in good clay loam, although some orchards are on lighter soil; the Japs do best on light soil, about such soil as would be best for peach trees.

Most nurserymen use Myrobolan stock for plum trees, but this stock is not as good as St. Julian for domesticas and Damsons. Varieties should be planted so that they will cross-fertilize. Plant sixteen to eighteen feet apart, according to varieties, and cut out some of the trees when they begin to crowd; orchards are short-lived, however. Head trees at one and one-half to two feet high, cultivate well until August, then plant a cover crop.

Varieties now most largely planted in New York, the speaker said, are Bradshaw, Reine Claude, Italian and German prunes, in order named.

He would spray trees while dormant, using lime-sulphur at the rate of one gallon concentrated mixture to eight gallons of water; after blossoms fall spray with lime-sulphur, one gallon to fifty gallons of water, and use same mixture about two weeks later.

In answer to a question, Prof. Hedrick said he would train trees of the domestica class with a central leader, while the Japs should be trained vase style, with an open head; the Japs are more like peach trees in their general habits of growth. Damsons need very little pruning.

Apple Growing in the West.

C. H. Williamson, Quincy, Ill., who has extensive orchard interests in Illinois and Missouri, talked most interestingly to the New York growers on changed conditions which exist in the Middle West. He referred to the great boom in planting of apple trees which struck this country fifteen or twenty years ago. Great orchards were planted by men who had no well-defined ideas of what they would do with them after they were planted. Capital was exhausted with the planting of the trees, expecting that nature would take care of them thereafter. The average man had an idea that no orchard of less than 100 acres was worth considering, but it must be confessed, after years of experience, that returns from such large orchards are usually not as satisfactory as those from smaller acreage.

"The great mistake made in the Middle West," the speaker said, "has been that our methods have not been intensive enough. A change is coming, however, and the acreage is being cut down. Thousands of trees are being cut down, too, and I believe that in Missouri more apple trees have been cut down within the last few years than have been planted in the same time. This is also true of Illinois and other states in what is known as the corn belt. Land that will grow eighty to a hundred bushels of corn per acre, worth 50 cents per bushel, isn't likely to be planted to apple trees.

"While the acreage of our orchards is decreasing and may continue to decrease, I believe that our production of apples will greatly increase by reason of the adoption of improved methods. In other words, I believe that the new-style grower will produce more good apples on a limited acreage than has heretofore been grown on the larger acreage."

Mr. Williamson told of his own experience in the apple business, telling of the development of spraying, pruning, thinning, orchard heating, etc., within the last few years. He has had good results from heating, and believes that no prudent orchardist can afford to be without this insurance against frost injury in the spring.

Mr. Lloyd S. Tenny, who had charge of the exhibit of fruit at the late land

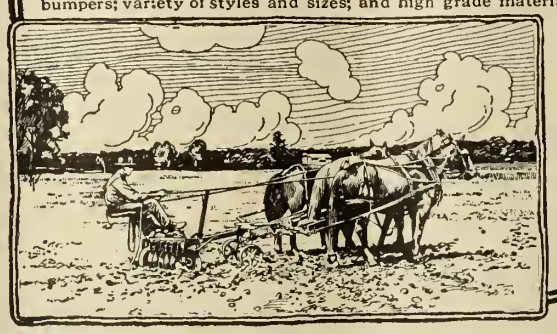
MORE DISKING—BIGGER CROPS

Experience and science have multiplied the value and uses of the disk harrow. Progressive farmers have learned the value of thorough disking, and its more varied use. They disk before plowing as well as after; they disk their meadows, pastures, orchards; they disk their roads for dragging. In fact, they use the disk harrow throughout the entire year.

For a disk harrow that will stand the hard work of its numerous new uses go to the line of the

Johnston Farm Machines

The "Johnston" Field Disk Harrows and Special Reversible Disk Harrows for Orchard and vineyard work are the favorites of up-to-date farmers—men who know the value of disks and disking. Their light, direct draft; perfect, double lever control of gangs; simple, strong frame construction; dust proof, wood-bearing draft standards; steel weight boxes; center bumpers; variety of styles and sizes; and high grade material throughout are among the features in the "Johnston" that make them the disk harrows for the best and widest range of work for modern farmers.



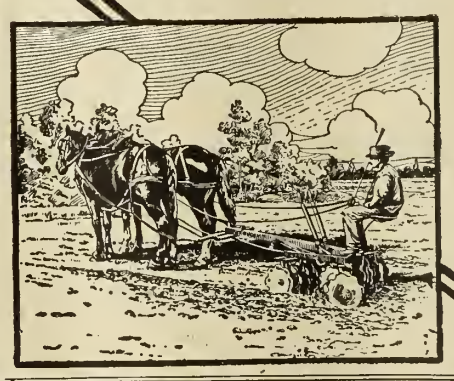
Send today for free catalog Every farmer and orchardist needs it. Write a post card now.

JOHNSTON HARVESTER COMPANY
Box 120F
Batavia, N.Y.

NOT IN THE TRUST

ARE YOUR CROP YIELDS SATISFACTORY?

They are certainly not what they would be if you used Clark's Double Action "Cutaway" Harrow. It requires thorough cultivation to make the soil fertility available for your crops. "Thorough Cultivation," and "Clark's Double Action 'Cutaway' Harrow" are synonymous. The entire machine is made of steel and iron, except the pole, which is jointed so that there is no weight upon the horses' necks, and can be removed in one minute and used as a tongueless, as shown in cut. This is a big feature in moving from field to field, insuring safety to horses. The disks are of cutlery steel, shaped and *forged* in our own shops, where the only genuine "Cutaway" disks are made. The **Double "Cutaway"** does twice as much as an ordinary disk harrow and **better** at the **same cost.** The inflexible frame holds the gangs rigidly in their places, and compels them to cut high, hard ridges, carrying the soil into the hollows and leaving the ground level. With the flexible or tandem harrows the gangs conform to the surface and do not cut and level the hard, irregular places. Clark's stir every inch, leaving a finely pulverized seed bed. By setting the inner gangs straight on sharp turns, the Disk turns easily, leaving the ground even. No interlocking of gangs.



Modern farmers disk before they plow their land. It puts fine soil in the bottom of the furrow, where otherwise would lie loose clods that make a strata through which the sub-moisture can not rise. For this no other disk equals Clark's.

What Prof. Bailey Says:

"The Double Action 'Cutaway' Harrow has been satisfactory. I use it almost continuously on our hard clay land with good results."

If your dealer can't supply the genuine "Cutaway," write us. Satisfaction guaranteed. Twenty-five years' experience back of every sale. Prompt Shipments. Get our booklet "Intensive Cultivation." It's free. We make a special tool for every crop.

CUTAWAY HARROW CO.
968 Main St., Higganum, Conn.

Find Out About the Forkner Light-Draft Harrow!

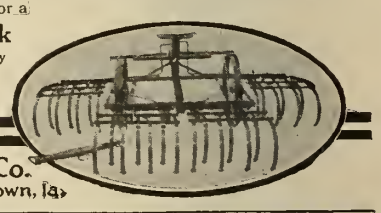
THIS low-priced harrow for orchards and vineyards —and general use—is a world-beater. Wonderfully light of draft—weight carried on wheels, not on horses' necks. Great worker—20 to 30 acres a day with one team—and every inch of soil **cultivated thoroughly**—**lifted and turned in long wavy level.** Best of all—it hangs low and has great extension—making it a snap to work right up to trees without horse or driver disturbing boughs or fruit.

Find Out in Your Orchard—At Our Risk!

WRITE TODAY for catalog and 30 day trial offer. Pick the machine suited to your soil and orchard and use it for a month—and send it back if you don't find it the finest cultivator made.

Send for This Free Book

"Modern Orchard Tillage"—written by highly successful orchardist—contains information that may be worth hundreds of dollars to you. Sent for the asking.



Light Draft Harrow Co.
907 E. Nevada St. Marshalltown, Ia.

Harvey Bolster Springs

Get more money for your vegetables, fruit, eggs, milk and live stock by delivering them in first class condition.

HARVEY BOLSTER SPRINGS make your wagon a spring wagon—make it last longer and prevent damage to produce in hauling to market. They are the *Standard Springs of America* and are sold under our positive guarantee to give satisfaction. Ask for special proposition.

HARVEY SPRING CO., 736-17th St., Racine, Wis.

Please make it a point to always mention The Fruit-Grower when you write in response to an advertisement.

HURST SPRAYERS

On Free Trial

No-money-in-advance, no bank-deposit. Highest quality—lowest prices. Pay us out of the "extra profit" the sprayer earns.

Horse Power Sprayer

No trees too high, no field too big for this king of Sprayers. For orchards, vineyards, potatoes, weeds, etc. No hand pumping required—works automatically. One man can do more work with this machine than two men with the old style sprayers. It saves you labor, time and money.

Doubles Your Crop

The Man-Power Sprayer is an all-purpose machine for the medium-sized growers, cheap in price, light, strong and durable. All our sprayers are GUARANTEED FOR FIVE YEARS. We pay the freight. Write a letter or card to-day—and we'll send you Spraying Guide, Catalogue of all-kinds-of-sprayers, and Special-Free-Sprayer offer for first in each locality this season. Don't delay. Write now. It means money to you.

H. L. HURST MFG. COMPANY
183 North St., Canton, Ohio

GROW ONIONS $1,624 PER ACRE FROM MY GRANDPA'S PRIDE ONIONS

grown by one of my customers the GILBERTSON WAY! If I can't *prove* this to you, I will pay all your expenses to Mason City and return, no matter where you live! Write for my FREE Book TODAY. I will tell you how you can *average* $400 to $600 per acre *net profit*, every year, on ordinary farm land! I *won't charge you one cent* for this information! Raise GRANDPA'S PRIDE GLOBE ONIONS the *Gilbertson way*, and make a *fortune* from a *few acres*, in two or three years! Write me TODAY!

A. O. GILBERTSON, Krop Krank, Box 768, Mason City, Iowa

show in New York City, told of this exhibit and some lessons which should be derived therefrom. Mr. Tenny believes that it is easily possible for New York growers to compete with the growers west of the Rocky Mountains in producing high-grade apples, and in getting high prices for their fruit, but in order to do this they must learn from the experience of their western competitors. Apples must be better grown, better graded and better packed. After all this has been done, the growers must advertise their products, and one way to do this is to exhibit at the various apple shows.

Mr. Tenny said that the day for exhibiting apples on plates at these shows is past. Larger packages must be used to show the quality of the fruit, and the box is an ideal package for this purpose. No other package is so well adapted for exhibit purposes. The box must be used more largely as a commercial package, too. Not all the apples grown in New York State should be packed in boxes, but some growers can use the box to advantage for their best varieties, and they should do so.

There were many other interesting papers on the program, and the round-table discussions were most interesting—but, as stated at the outset, the New York meeting is too big for one man to take it all in, and The Fruit-Grower representative had to miss some of the best features. Thursday night a banquet was given the fruit growers, at which Prof. John Craig was toastmaster, and with most interesting addresses by a number of good speakers. The session closed on Friday, and before the next meeting a committee will try to devise plans of arranging a marketing plan whereby members who so desire can come in close touch with the consumers, and cut out some of the middlemen in the fruit business. J. M. I.

Special Dairy Trains in Iowa.

During the winters of 1910 and 1911 the Iowa State Dairy Association operated special dairy trains over the Chicago, Burlington & Quincy, the Chicago Great Western and the Chicago, Milwaukee & St. Paul railways in Iowa. These trains made over 400 stops where lectures and cow demonstrations were delivered to over 100,000 people that were interested in dairying.

The results of these trains have manifested themselves favorably in many ways. Farmers have become interested in better dairying. They have substituted good cows for poor ones; placed at the head of their herds good, pure-bred dairy bulls; erected silos; are raising clover and alfalfa where less productive and less valuable timothy hay formerly grew, and, in fact, are demonstrating in many ways that the results of the dairy trains were especially valuable directly to the farmers, and therefore indirectly to the towns which they visited.

Due to this success other roads have become interested in the opportunity of gaining such results and now the Iowa State Dairy Association has been called upon to run similar trains on several roads this winter. Arrangements have been made with the Chicago, Rock Island and the Illinois Central to cover all of their lines in Iowa with fully equipped special dairy trains during the months of February and March.

The trains will consist of an engine, baggage car, two passenger coaches, diner and sleeper. The lecture coaches will be manned with some of the best speakers on dairy subjects in the United States. The lectures delivered will be practical and helpful in every way. Such subjects as "Silos and Silage," "Breeding, Feeding and Management of Dairy Cows," as well as "The Importance of Testing Individuals" will be treated.

To further assist in making the lectures clear, the coaches will be equipped with miniature silos, testing apparatus, etc. The baggage car will be equipped as a modern dairy barn with patent stalls and stanchions. It will carry some of the most improved specimens of dairy animals which will be used at each station to demonstrate the essential characteristics of the profitable dairy type.

Further information will be given as soon as definite arrangements for the schedule have been completed. As these two railroads operate through the dairy districts of Iowa very successful meetings should be held in every town.

To Improve Missouri Orchards.

An effort was made during the past summer by the Missouri State Board of Horticulture to co-operate with the apple growers of the state in the disposal of their crop. Many of those who have orchards are not well situated for getting in touch with the markets, and are in isolated places where apple buyers do not easily reach them. Although the movement to aid the orchard men was started very late in the season for the accomplishment of results, the State Board feels that their efforts were well rewarded, as they succeeded in placing a large number of isolated growers in touch with markets where they sold their crops to good advantage.

In continuation of this plan, and to better enable the State Board to serve as a sort of "clearing house" an orchard census of the state is being collected by the State Board, in which will be recorded the acreage, number of trees, kind and variety of every orchard in the state. Secretary W. W. Chenoweth, Columbia, Mo., says that splendid progress is being made towards the completion of this census, but that in some sections orchard owners have delayed furnishing the desired information, this being particularly the case in Buchanan County. Every orchard owner in the state should list his orchard in this census, as it will assist the State Board to work more effectively for the betterment of the state's fruit interests.

Loyal Subscribers Help.

Fruit-Grower readers are the most loyal people in the world. Every one is always saying a good word for The Fruit-Grower and endeavoring to get new subscribers. We have just printed a little circular containing an index of the contents of the January issue, and telling the purpose of The Fruit-Grower, together with a few comments about what several readers think of the paper. These are just the things to hand to people whom you are encouraging to subscribe. Tell us how many of these little circulars you want to hand out among your friends and they will be sent to you by return mail.

Ask your neighbors to subscribe to The Fruit-Grower.

Plant the Quality Grape

CATAWBA-CONCORD

THE GRAPE FOR EVERYBODY EVERYWHERE

The Catawba-Concord is a cross between the Catawba and the ever-popular Concord, so scientifically made that the result is a grape possessing the merits of both varieties, with the defects of neither.

Equal in quality to the finest hot-house grapes—as easily grown as the Concord.

Unlike the Catawba, it can be grown successfully in practically any location, for its foliage is not subject to downy mildew, nor its fruit to black-rot. Unlike the Catawba, it ripens early; in fact, slightly earlier than the Concord.

Its bright wine-red color, its unequalled keeping and shipping qualities make it the best market grape ever introduced.

No grape is more prolific, none has successfully withstood more severe tests than this has been subjected to for ten years past. I proved its superiority on every count before offering a single vine for sale. Awarded first prize wherever shown, including a

Certificate of Meritfrom the American Institute of the City of New York

Awarded because of these exceptional qualities:—

1. High quality—equaling the Catawba in tenderness of pulp, sweet luscious flavor and aroma, with added sweetness and juiciness.
2. Rich sparkling light red, with abundant bloom.
3. Bunch large and compact—just like the Catawba.
4. Berry medium to large and nearly round—exactly like the Concord.
5. Season early; a little in advance of Concord.
6. Skin thin and tough; much like Catawba but thinner.
7. Berry adheres firmly to bunch; hence
8. A superior shipper and keeper.
9. Exempt from both black-rot and brown-rot; and all other diseases.
10. Vine of extreme vigor—a stronger grower than the Concord—and of ironclad hardihood.
11. A heavy annual yielder—as prolific as Concord.
12. Foliage similar to Concord and of like freedom from mildew.
13. Entirely without foxiness in odor or flavor.

Send for large, 80-page, illustrated catalog

Gives full details of this remarkable grape; also of the best Raspberries, Blackberries, Strawberries, Currants, Gooseberries, Garden Roots, Hardy Perennial Plants, Shrubs, Evergreen Trees, Hedge Plants, Vines, Roses, etc., and tells how to plant and grow them. **Free to Everybody.** Write today.

J. T. LOVETT BOX 144 LITTLE SILVER, N.J.

S-M-A-S-H—

Go Roofing Prices!!

Never before have you been able to participate in a Roofing sale such as this. This opportunity came about in an unusual manner. It is out of the ordinary channels of manufacturing and selling possibilities. We only have a limited quantity at this slaughter price, and subject to prior sale or reservation.

Corrugated Steel Roofing 1¼ Cents Per Square Foot

Now every one knows, who knows anything about Roofing, ceiling and siding that there is nothing in all the world that can come anywhere near comparing with the wonderful qualities of steel for a covering. It many times outlasts prepared roofing, shingles or slate. It is fire-proof, snow-proof—considerably warmer in Winter and cooler in Summer. It is in every manner superior to any other roofing.

Prepared roofing cannot be leak-proof. It cannot last. It peels, cracks, warps and the elements get to it sooner or later. Slate chips, cracks and is far too expensive in transit. Shingles blow off, warp and leak and the up-keep is entirely too expensive. There are no draw-backs to Steel Roofing. It lasts year in and year out with only ordinary care. You are absolutely safe and secure from the elements. It is insurance proof, and is the only real safe and sure roofing to use.

By one of those unusual occurrences, one in a lifetime we came into possession of this lot of Roofing, comprising all the weights and sizes, corrugated and crimped, which places us in a position to very materially undersell anything that we or anyone else has heretofore been in a position to offer. This is your opportunity to get your supply at a price that will net you a tremendous saving. But you must put in your reservation at once if you wish to participate. No need, however, to buy now. Simply write us for samples, then state about when you will want your supply and we will hold it for you without any deposit of any sort, or shipment will be made immediatly.

But by no means overlook this opportunity. Get our samples at once and our complete prices. They will startle you. You will be surprised at what a trifling cost you can now throw away your troublesome shingles, slate and prepared roofing, and have for all time, complete shelter that will cause you no further trouble—will last a lifetime.

SPECIAL SALE We want it distinctly understood that this is a special sale and a special lot of Roofing, Siding and Ceiling guaranteed brand new, never been used, first class, "A" number one, as good as can be had anywhere on earth. We bought it at an unheard-of sacrifice price, add our small profit and let it go at an unheard-of price. Do not hesitate to thoroughly familiarize yourself with what this offer really means to you. Simply write for samples without any obligation whatever on your part to purchase. We will then protect you should you afterwards decide that you want a supply. But by all means write today, and remember that we stand back of every last bit of this Roofing to the fullest extent, guaranteeing it in every respect. We want to make it clear to you that never before have we or anyone else been placed in a position to offer such superior Steel Roofing at anywhere near this special price. No need writing a letter, simply use Special Roofing Sale Coupon by writing your name and address in same—we will understand that you simply want full information, samples, prices and specifications, which will be sent you at once, prepaid.

Special Steel Roofing Sale Coupon

Chicago House Wrecking Co.,
35th and Iron Sts., Dept. C 399 Chicago.

Gentlemen;

Without any promise to purchase, please send me prices, samples and full particulars of your special lot of Steel Roofing.

Name.....

Address.....R. F. D.....

County.....State.....

CHICAGO HOUSE WRECKING COMPANY
35th and Iron Streets Dept. C399 Chicago

Repeating Shotguns $19.50 to $95.00

repeating shotguns are made in 12 and 16 gauges (6 shots,) solid frame and take-down, many grades and styles, with special models for trap and field shooting, etc. The most extensive line of repeating guns in the world.

Every *Marlin* repeating shotgun has the *Marlin* solid top, side ejector and closed-in breech. It can't freeze up with rain, snow or sleet; rain can't run into the action and swell the shells in magazine; dirt, leaves, twigs and sand are also excluded from the action. Simple, strong mechanism; one-third less parts than any other repeater. The double extractors pull any shell. Handles rapidly, guaranteed in shooting ability—and the automatic recoil safety lock makes it the safest breech loading gun built. Be sure you get a *Marlin*.

DO IT NOW! Send three stamps postage and get our big catalog of all *Marlin* repeating rifles and shotguns by return mail.

The Marlin Firearms Co
139 Willow Street New Haven, Conn.

The Name Burpee is known the world over as synonymous with **The Best Seeds That Grow!** Are You willing to pay a fair price for selected seeds of the choicest vegetables and most beautiful flowers? If so, it may prove of mutual interest if you **write to-day** (a postal card will do) for The 1912 Burpee Annual. This is a bright new book of 178 pages that is intensely interesting to every one who gardens either for pleasure or profit. Shall we mail you a copy? If so, what is your address? Our address is, **W. ATLEE BURPEE & CO., Philadelphia**

Lily of the Valley

Everybody loves Lily of the Valley. By far the most delicately beautiful of all flowers. They are perfectly hardy, easily grown and require no attention after once setting out. They grow and multiply year after year. The roots have usually been rather expensive, but we now offer choice, large, well-grown roots,

20 for 25 cents

100 for $1.00, 1,000 for $8.00, charges prepaid, with full directions for growing. They are nice to plant beside porches, in borders, among shrubbery, in shady nooks and in cemeteries. They produce an abundance of lovely, pure white, bell-shaped flowers, which are deliciously fragrant. Large, descriptive catalog of all kinds of plants, seeds and bulbs mailed free.

Ask for it.

IOWA SEED COMPANY
Dept. 74 Des Moines, Iowa.

SEEDS

Reliable and Full of Life

SPECIAL OFFER

Made to build New Business. A trial will make you our permanent customer.

PRIZE COLLECTION Radish, 17 Varieties, worth 15c; Lettuce, 12 kinds, worth 15c; Tomatoes, 11 the finest, worth 20c; Turnip, 7 splendid, worth 10c; Onion, 8 best varieties, worth 15c; 10 Spring Flowering Bulbs, worth 25c—65 varieties in all; worth $1.00.

GUARANTEED TO PLEASE.

Write today; mention this paper.

SEND 10 CENTS

to cover postage and packing and receive this valuable collection of seeds postpaid, together with my big instructive, beautiful Seed and Plant Book, tells all about Buckbee's "Full of Life" Seeds, Plants, etc.

H.W. BUCKBEE
2159 Buckbee Street
Rockford, Illinois

In writing advertisers please mention The Fruit-Grower.

A WOMAN FLORIST

6 Hardy Everblooming Roses On their own roots. ALL WILL BLOOM THIS SUMMER **25c**

Sent to any address post-paid; guaranteed to reach you in good growing condition.

GEMROSE COLLECTION

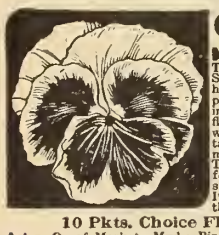
Antoine Rivoire, Delicate Blush
Etoile de Lyon, Golden Yellow
Killarney, The Irish Beauty
Rhea Reid, Dazzling Crimson
Snowflake, Pure White
Aurora, Grandest Pink

SPECIAL BARGAINS

6 Carnations, the "Divine Flower," all colors, 25c.
6 Prize-Winning Chrysanthemums, - - 25c.
6 Beautiful Coleus, - - - - - 25c.
3 Grand Hardy Phlox, - - - - 25c.
3 Choice Double Dahlias, - - - 25c.
6 Fuchsias, all different, - - - 25c.
10 Lovely Gladiolus, - - - - - 25c.
10 Superb Pansy Plants, - - - - 25c.
15 Pkts. Flower Seeds, all different, 25c.

Any Five Collections for One Dollar, Post-Paid. Guarantee satisfaction. Once a customer, always one. Catelog Free.

MISS ELLA V. BAINES, Box 6 Springfield, Ohio



SEEDS

The kind That Grow Successfully on Shorewood Farms. Every woman heving a small piece of ground can profit by this offer. There is nothing more interesting than raising flowers and vegetables, and the woman who can point to her table and say: "This was grown in my own garden" is to be envied. Take edvantage of our generous offer and elso obtain e yeer's subscription to Park's Floral Megazine. It will tell you how to grow garden thinge euccessfully.

10 Pkts. Choice Flower Seeds, 10 cts.

Aster, Q. of Market, Mxd.; Pinks, New Japan, Mxd.; Larkspur, Stock-flowd, Mxd., Poppy, New Shirley, Mxd.; Pansy, Gient Fragrant, Mxd.; Portuleca, Large-flwd., Mxd.; Petunia, New Bedding, Mxd.; Sweet Peas, Large-flwd., Mxd.; Phlox Drummondi, new, Mxd.; Mixed Seeds, 1000 kinds.

10 Pkts. Choice Vegetables, 10 cts.

Beet, Imp. Early Turnip; Cabbage, Early, Solid Cone; Cabbage, Late Flat Dutch; Cucumber, White Spine; Lettuce, Malta Drumhead; Onion, Denvers Yellow; Parsnip, Large Guernsey; Radish, Special Mixture; Tomato, New Matchless; Turnip, Purple-top Globe.

Magazine 1 year and 10 pkts. choice Flower Seed, 15c.
Magazine 1 yr. and 10 pkts. choice Vegetable Seed, 15c.
Magazine 1 yr. and 20 pkts. Flower and Vegetable, 25c.

In our selection of seeds, we have a variety of flowers that will make a most beautiful display and only such vegetables as are most in daily use relished by all. **Shorewood Farms Co., Saugatuck, Mich.**

Potatoes

Salzer's Potatoes are known the world over for extreme earliness. The editor of The Rural New Yorker gives to Salzer's Earliest Potato the astonishing yield of 464 bushels per acre!

Salzer's Earliest Potato Collection.

Composed of four rere earliest and one leter sort, separately pecked, full weight, per bbl. only $4.00. Catalog tells!

For 16 Cents.

10,000 kernels of splendid Lettuce, Redish, Tomato, Cabbage, Turnip, Onion, Celery, Persley, Carrot, Melon end Flower Seeds producing bushels of vegetables and flowers *for 16c postpaid.*

Big vegeteble end farm seed catalogue free for the asking.

John A. Salzer Seed Co.,
208 So. 6th St., La Crosse, Wis.

In writing advertisers please mention The Fruit-Grower.

$100 Worth of Seeds Free

With First Order from New Customers

The biggest, best, most liberal seed offer ever made. We want to introduce our Guaranteed, Sure-to-Grow Seed in your neighborhood and convince you of their superiority. We want you for a customer this year, for a trial makes a permanent customer. Write today for our Free Offer and 76-page catalog of Field & Garden Seeds.

A. A. Berry Seed Co., Box 263, Clarinda, Iowa.

TRYING OUT VEGETABLES

An Eastern Man's Experience in Testing Tomatoes, Cabbages, Musk Melons, Beans, Etc.

Last year I tried out fourteen kinds of tomatoes in the farm garden and the results of the trial not only showed me which varieties of tomatoes were the best to grow but also how this particular vegetable should be grown. This same work can be done with each kind of vegetable and a great deal of information secured that is of value. I tried out a different kind of vegetable each year for a number of years and have learned a great deal about varieties besides acquiring much knowledge as to growing each kind to advantage.

I have tried the cabbages, musk melons, squash and beans in the same manner as I have tried the tomatoes and as there were several points that I did not gain information on I have decided to try some of them again. One season I tried two kinds of vegetables and had trouble in keeping the notes straight, so I dropped one kind and intend to try it again this year. This vegetable was beans. The trial with the tomatoes was made for two seasons. The first season only eight varieties were grown here in Connecticut and last year's trial showed up the same points when tried in a different locality, nearly up to the White Mountains in New Hampshire.

The expense of making such a trial of varieties is not much when one considers the valuable information that can be secured. The cabbage test cost but one dollar and the information gained by keeping watch of the different kinds was worth ten times that amount to me and perhaps to many other gardeners. A gardener can read any number of books on gardening and learn considerable theoretically, but by taking one kind of plant each year and studying the different varieties he can learn a number of practical things that could not be learned from books, and the information obtained in this manner will be instilled permanently in his mind.

Selecting the Variety.

If you show a farmer or gardener a Baldwin apple or a Hubbard squash he will without doubt name it correctly for you, but on the other hand if shown three kinds of lettuce or cucumbers he will not know them apart. This is something that we should know and if known thoroughly it will be a great help if results were desired.

I selected tomatoes for last year's experiment because I had tried them the year before and wanted to learn more about them. I had noticed that almost every seedsman had a pet variety to offer and the illustrations in many cases are misleading. If you read over a list of varieties in the different seed books you will be somewhat confused as to choice of varieties for a succession. I looked over the seed books and selected the varieties that were supposed to be leaders and tried to make a selection so that they would ripen in succession, according to the descriptions in the catalogues. This list was culled down to fourteen varieties that came from the most responsible seedsman in the country. One variety came from England and proved to be very good but was late.

I wanted to give them all a fair trial, so my plan was to plant them all the same day in flats, and to transplant them to the paper pots the same day and plant them near each other in the field so that notes could be secured without waste of time.

Test the Seeds.

The first step in garden planting with me is to test the seeds. I always test the seeds before planting because it gives me a chance to figure how much to sow in the flats or the ground. I was surprised to find that the germination percentage of some of the varieties varied to a great extent. Perhaps some of the seeds were not stored in a good place by the seedsman and were poor. I tested an old paper of Ponderosa that showed up better than a new paper of the same kind, but I planted new seeds in the trial and selected the seeds from the new paper. The germination percentage of the seeds varied from seventy-five to ninety-five per cent. Field's Early June, Sutton's Large Yellow and Livingston's Globe showed a higher germination percentage than June Pink, Ponderosa and Dwarf Giant.

The seeds were planted in flats and were transplanted to paper pots as soon as they showed the second set of leaves, they were kept growing by having nitrate of soda added to the water. I use one tablespoonful of this chemical to a pail of water and it will make a great difference in the growth of the plants. All of the plants were transplanted to the field as soon as the weather was settled and none of them stopped growing when transplanted to the field. All of them had an equal chance to grow and produce fruit. Now what was the results?

I divided the experiment into two sections and had twelve plants for each plot. One plot had potash applied to the ground after the plants were set out and the other plot had no chemical fertilizer. The plot that had the potash applied to the ground showed a marked difference in favor of the use of this fertilizer. The plants were thrifty and the fruit was produced larger and at an earlier date.

The Earliest Tomato.

The season of ripening was one point looked for in this experiment and Field's Early June was the first to ripen fruit while several other seedsmen claim that their variety is the earliest. This variety has ripened the earliest for two years and I consider it the earliest tomato worthy of planting, because it has produced more ripe fruit than other varieties and at a time when tomatoes are worth a premium in price. Earliana was the second to ripen but as it produces less fruit than Chalk's Early Jewel and comes about the same time I favor the last named variety even if it is a little later. Both varieties were subject to speck rot, but Chalk's Early Jewel produced better tomatoes and is given the preference.

Ponderosa produced the largest fruits and even if it is a late tomato it is fine for late canning. The New Stone produced some nice large fruits but the quality of it is not as good as some of the others. The Globe is the best of the Livingston tomatoes while the Coreless showed up very poor on account of the divided core in the tomato, which was green. June Pink is a fine quality tomato and is given third choice as to ripening. Sutton's Large Yellow was indeed a fine yellow tomato and if one is not prejudiced as to color this tomato will be found one of fine flavor. I noticed that the yellow tomatoes are of much milder flavor than the red ones and some prefer them for this reason. This yellow tomato is smooth as Field's Early June and both were shown at a fair and received premiums as being the smoothest tomatoes in the whole showing of this fruit. Some yellow tomatoes will split at the stem end but this one has not split at all.

The table of the test shows how the figures were recorded in the field notes; in every case the earliest tomatoes were vine ripened fruit and the notes were kept up till the frost of September 15th came and killed the plants. There were a great number of green tomatoes on the Ponderosa and Dwarf Giant plants at this time.

This little trial is only a sample of what can be done with most any vegetable where there is a large list to select from. The results thus obtained will not always be conclusive but they will go a great ways toward helping one to make a good selection of varieties for the garden. They will be a set of figures that will show the amateur the varieties he can depend

Fruit Trees and Small Fruits With a World-wide Reputation for Vigor, Yield and True Species

Largest and most complete collections in America. Strong, well developed trees and plants, free from defects and parasites.

This business, established in 1840, has 72 years of expert propagation and square dealing behind it. This is a guarantee to you of entire satisfaction.

We take extra care in packing and shipping every order—large or small. Goods bought from us will arrive in any part of the country in perfect condition.

Write for 72nd Annual Catalogue

A safe and standard guide to the fruit farmer, and to buyers of Ornamental Trees, Shrubs, Roses, Evergreens and Hardy Plants. Sent free on request.

ELLWANGER & BARRY
Mount Hope Nurseries,
Box 28, Rochester, N. Y.

IN EVERY STATE

From New York to California, Dealers Sell and Recommend

PEPSEECO Brand

"CREAM of the CROP"

Alfalfa Timothy Millet — Cane Clover Ky. Blue Grass

PEPSEECO BRAND Seeds are the highest quality money can buy. They are more carefully selected, thoroughly cleaned and rigidly tested than any other and cost *you* no more. Ask your dealer for PEPSEECO BRAND Seeds. Insist on having them. If he can't supply you, write us.

FREE Valuable book containing information about Alfalfa, Clover and other crops. Sent Free for your dealer's name.

J. G. PEPPARD SEED CO.,
1127 West 8th St., Kansas City, Mo.

Seeds, Plants, Roses,

Bulbs, Vines, Shrubs, etc. Hundreds of car lots of FRUIT and ORNAMENTAL TREES. 1,200 acres, 50 in hardy Roses, none better grown. 47 greenhouses of Palms, Ferns, Ficus, Geraniums and other things too numerous to mention. Seeds, Plants, Bulbs, Roses, Small Trees, etc., by mail, postpaid. Safe arrival and satisfaction guaranteed. Immense stock of SUPERB CANNAS, the queen of bedding plants. Acres of Pæonias and other Perennials. 50 choice collections cheap in Seeds, Plants, Roses, etc.

168-PAGE CATALOG **FREE!** Send for it today and learn real values. Direct deal will insure you the best at least cost. 58 years.

The Storrs & Harrison Co., Box 314, Painesville, O.

FRUIT TREES

We have the nicest lot of guaranteed fruit trees you ever saw—apples, plums, cherries, pears, peaches. All grown in the north, hardy, healthy, absolutely free from scale. And they're all going to be sold at bargain prices.

We Do Not Sell Through Agents

No need of your paying agents' commissions and expenses. Buy direct from the nursery. We save you about half the price agents charge.

Get Our Nursery Book

Tells how to plant trees, shrubs, vines, etc. Tells how to care for them, when and how to spray. Gives a fund of information and quotes prices that are bound to interest you. We prepay the freight on orders of $5 or more.

ALLEN L. WOOD, Woodlawn Nurseries
580 Culver Road, Rochester, N. Y.

SEED POTATOES

Red River---Esrly Ohios---Peachblows

all the best yielders. All pure northern genuine Red River stock Grown from special heavy yielding seed. Free from scab. Guaranteed to please. Write today for our 76-page catalog. Secrets on potato growing. Douhle your yield and profits. We are growers and can assist you wonderfully. One customer made $225 an acre. Write

A.A.Berry Seed Co., Bx 863 Clsrinda, Ia

ARCHIAS' "SURE SEEDS"

We have the best and most complete testing apparatus and trial grounds in this country. Archias' Seeds are "Sure Seeds." Prices the lowest. Write today for our big Free 100-page Garden, Floral, and Field Seed Book which contains scores of illustrations and valuable information on planting, marketing, fertilizing, etc. WRITE FOR IT.

ARCHIAS' SEED STORE, Box 8 SEDALIA, MO.

SEED CORN **FREE**

This great offer is made to enable us to get in closer touch with the farmer in every community. We want you to know more of our great National Weekly. Write today for full particulars and arrange to get on the free list for some of this Famous, Tested, Pedigreed, Seed Corn.

KANSAS CITY WEEKLY JOURNAL
815 Journal Building Kansas City, Mo.

DAHLIAS Dahlias Exclusively. Over 600 varieties. The best to be had. 10 first prizes from 45 entries in 1911. Write now for Free Catalogue.

GEO. L. STILLMAN, DAHLIA SPECIALIST
Box P Westerly, R. I.

on to supply him with the best kinds in season.

I have taken this as a method of finding out for myself and besides being a great deal of pleasure in watching the different kinds it has been experience of value to me in producing a better garden.

TABLE OF VARIETY TEST OF TOMATOES.
Made by Garrett M. Stack, in Belknap County, N. H., 1911.

NAME.	First Ripe Fruit	No. Vine Ripened Fruits: Fertilized with Potash	No. Vine Ripened Fruits: Not Fertilized with Potash	NOTES.
Coreless	Aug. 19	62	40	A shy bearer and not as good as No. 2.
Hummer	Aug. 24	80	55	Better than first.
Globe	Aug. 14	99	70	A good sized smooth tomato better quality than one or two.
Chalk's Early Jewel	Aug. 8	115	103	Good quality, but speck rots. Ripened third.
Earliana	Aug. 7	112	90	Earlier than above, but second rate in quality. The second-early tomato.
Burpee's Dwarf Giant	Sept. 15	46	40	Smooth, a shy bearer, and late.
Field's Early June	July 28	140	102	First choice as to earliness. Ripens even.
June Pink	Aug. 14	108	84	Good size, fine quality. Third choice.
Ponderosa	Sept. 9	60	32	Largest; late and rough.
Tenderloin	Sept. 6	72	48	Better than above in quality. Not as large.
Yellow Plum	Sept. 4	290	240	Small, used for pickling.
Sutton's Large Yellow	Sept. 10	36	24	Fine flavor; late; smooth.
New Stone	Aug. 30	112	104	Not as good quality as some others; smooth.
Shenandoah	Aug. 30	60	55	Good size and flavor, but takes longer to ripen.

School Gives Course in Box Packing.

The estates of the northeastern part of the country are putting forth a great deal of effort to restore fruit-growing to its former profitable position. Massachusetts, in addition to the demonstration orchards which they are establishing in various parts of the state, is making still greater strides by teaching her fruit-growers how to pack apples so as to make them bring better prices on the market.

Professor Wm. D. Hurd of the Agricultural College at Amherst is sending out a notice that a two weeks' school of apple packing will be held at the Agricultural College, February 12th to 24th. The school will be under the direction of Prof. F. C. Sears, head of the department of Pomology of the College and the instruction in packing will be given by John B. Castner, expert box packer of Hood River, Ore.

The work will consist of grading and packing apples in boxes and barrels, those registering performing the operations themselves until they are familiar with the different packs used on the commercial market.

Special lectures and demonstrations will be arranged for those who attend, on the subjects of Planting, Fertilizing, Pruning, Spraying and the Management of Orchards.

Opportunity will also be given those who come to attend some of the classes of the Ten Weeks' Winter Course, now in session.

Two weeks of the kind of instruction that is to be given in this school ought to fit one to pack fruit so that it will command top prices in the market.

A fee of $10.00, to pay for the fruit and other materials used and to help in defraying the expenses of employing the expert packer, will be charged each person who attends.

Bean and Pea Weevils.

These insects appear in the garden or field shortly after the pods form and lay their eggs in the growing pods. The maggots from these eggs enter the seeds. When the peas or beans are kept for seed the weevils continue their development and may remain hidden in the seed until the next year. If weevily peas or beans are planted the weevils will appear the following season to infest the new crop. Weevily seed is not necessarily killed by the inclosed insect, but at all times the germinating power of the seed is at least impaired. Even if the seeds are not killed the plants are weak and make little headway as compared with plants from sound seed.

To prevent the pods from becoming stung, only clean seed should be planted. The weevils in the field come from infested legumes. At harvest all of the crop should be gathered up. Infested pods should never be thrown away, but should be destroyed, best by burning. Seed peas can be practically freed from weevils by immersion in a pail of water. Those that are weevily will float and can be skimmed off. Those that are sound will sink. Sometimes a pea may be infested and still sink. To take care of such it may be advisable to add some salt to the testing water. If enough salt is added so that the sound peas just sink it will be perfectly practical to float out any that are infested.

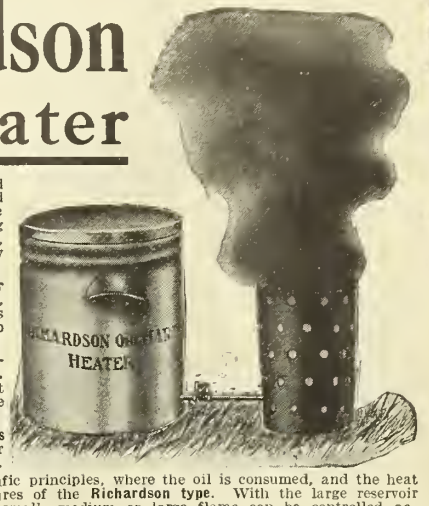
Another method is to place the seed in a tight compartment and place a saucer containing carbon disulphide on top of the seed. This very volatile and inflammable liquid gives off heavy fumes which will poison all insect life in the compartment. After twelve hours fumigation the seed should be aired.

The bean weevil will continue to breed in stored dried beans, finishing its life cycle in from twenty to eighty days, according to temperature. Accordingly, beans kept for seed should be fumigated as soon as stored. The pea weevil takes one year for its propagation. They will not breed in dry peas. The fumigation or the float-treatment may be done just before planting. — Washington Experiment Station.

The bulk of the dry shelled lima beans used in the markets of this country are produced in Ventura County, California.

Subscription expired? Renew today.

The Richardson Orchard Heater



The Richardson Orchard Heater is the best and only up-to-date device for the burning of oil, and that gives the greatest amount of heat and smoke for the protection against frost damage or freezing temperatures, of Apple and Peach orchards, Orange, Grape Fruit and Lemon groves, Vineyards, Berry patches and Truck gardens.

The Richardson Orchard Heater's Oil Reservoir is provided with cover and heavy metallic handles, and its oil capacity of 26 qts., in most localities, is sufficient for a season's supply. They are made to nest, so as to store easily.

After filling reservoir with oil, there is no depreciation in the quality or character of the oil. The oil that may not be used after a season's frost fighting, can be gathered and taken to storage tanks.

The Richardson Orchard Heater's Brass Valves (specially made), the pipe connections, torch burner and fittings are standard strength and best quality.

The Perforated Burner, constructed on scientific principles, where the oil is consumed, and the heat and smoke liberated, is one of the important features of the Richardson type. With the large reservoir and valve connection between perforated burner, a small, medium or large flame can be controlled according to weather conditions.

THE RICHARDSON FROST PREVENTION CO.
Manufacturers of Orchard and Truck Garden Heating Devices
KANSAS CITY, MO., U. S. A.

SPECIAL PRICES ON KLONDIKE AND AROMA **Strawberry Plants**

I have a very large stock of these two kinds, I can furnish large orders. Send your list for special prices. I have all varieties.

J. A. BAUER, Box 15, JUDSONIA, ARKANSAS

ALFALFA Seed is sold by numerous persons; but there is a vast difference in quality which often determines the success or failure of a field. A too large portion of the seed sold is of uneven quality. You can profit by the benefit of our 20 years' experience in growing and handling Alfalfa seed. Acorn Brand costs a trifle more than some grades, but is worth many times the difference. Valuable information, Seed Book, samples and prices are yours for the asking.
Ross Brothers Seed House, 326 E. Douglas, Wichita, Kansas

Please make it a point to always mention The Fruit-Grower when you write in response to an advertisement.

BERRY BOXES FRUIT BOXES BASKETS AND CRATES

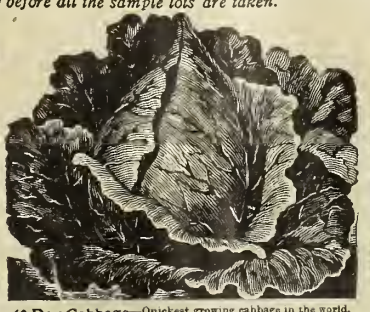
The package advertises and sells the fruit. Let us send you catalog showing the superiority of packages we are manufacturing. 30 years at it, we know the requirements, and we want you to know our prices. We make mixed shipments. Join your neighbors in carload lot shipments, and save freight. Prompt shipments at all times. Address nearest office.
The Pierce-Williams Co., 542 William St., South Haven, Mich., or Jonesboro, Ark.

SEEDS OF ALL THESE VEGETABLES GIVEN AWAY FOR TESTING

WE want every reader of this paper who has a garden to TEST these 6 splendid new vegetables. We know they will give such wonderful results that they will make thousands of new customers for us, and all we ask is for you to send your address at once plainly written on a Postal Card and we will mail you these 6 sample packets absolutely FREE for testing. *Do it today before all the sample lots are taken.*

Giant Climbing Tomato—Most wonderful tomato we ever knew. Climbs trellises 12 to 20 feet. Fruits often weigh 3 lbs. each, very smooth and solid, few seeds, handsome red color.

Fancy Pickles—Here is a cucumber to be proud of. It is a marvel of beauty, grows very quick and just right size for pickling. You should grow this excellent variety.



60 Day Cabbage—Quickest growing cabbage in the world. Heads quick, very solid and splendid quality. Try it and you will say it is a wonder.

12 Day Lettuce—After once trying this variety you will say it is the quickest grower on record, always very tender, crisp and sweet.

15 Day Radish—A wonder for quick growth. Will produce radishes fit to use in 15 days. Is very crisp and tender, scarlet color.

New Sugar Parsnip—Very best variety for home gardens. Roots large, very smooth, flesh fine-grained, and excellent quality.

Remember we will send a Sample Packet of all these 6 varieties of SEEDS absolutely FREE to every reader of this paper who has a garden and will test them. Several dollars worth of vegetables can be grown from this lot of seeds. Write your name and address plainly on a Postal Card and it will bring them.

Our 1912 CATALOGUE of Vegetable and Flower Seeds, Plants, and Rare Fruits with our Special Bargain List with Color Plates, will be sent FREE with every lot.

Address—MILLS SEED HOUSE, Dept. 24, ROSE HILL, N. Y.

Here's The ACME

The "ACME" is the *only* Harrow that *cuts, crushes, turns, smoothes* and *levels* in *one* operation and is a perfect weed exterminator and surface mulcher. There are no lumps or air spaces between the furrows after using the "ACME." Your soil is in the condition of a perfect seed bed. The subsoil has been properly packed and the top soil mulched to attract and conserve all the moisture.

The coulters cut through to the under soil, leaving the trash that has been turned under, beneath the soil where its fertilizing qualities may benefit the growing crops. There are sizes 3 to 17½ feet wide. Each

ACME HARROW

Pays For Itself Every 20 Acres

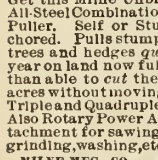
Each "ACME" is the greatest value offered. Any "ACME" will pay for itself on 20 acres the first year and will keep on paying big profits for a lifetime.

Let us send you our combined catalog and booklet containing the service of articles by well known authorities on soil preparation, and describing the "ACME" line. Ask your dealer for prices, or write to

DUANE H. NASH, Inc.
237 Division Ave. Millington, N. J.

STOP! STOP! STOP!

Thirty Days Trial of



2 to 50 H. P. Wonderful New Pumping Engine
Send postal today for Illustrated Catalog.

United States Bonded Engine. Burns gas, gasoline, kerosene, distillate. Consider these

12--Advantages--12

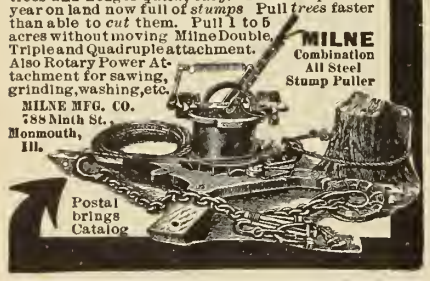
1st, Pays for itself in fuel saving in short time. 2nd, No violent vibration. 3rd, Greatly reduced bulk. 4th, Easily portable; mounted anywhere. 5th, Every engine part and horse power guaranteed. 6th, Absolutely frost proof. 7th, Positively most economical running engine made. 8th, Only engine with pulley on both sides. 9th, Small pulley on cam shaft, for very slow machines. 10th, Perfect Lubrication, cooling & ignition. 11th, Lowest cost engine in the world. 12th, Made by reputable firm, 60 years in business.

United States Engine Works
1529 Canal St., Chicago, Ill.

Pull Stumps! Make Money!

Get this Milne Unbreakable All-Steel Combination Stump Puller. Self or Stump Anchored. Pulls stumps, green trees and hedges *quick, easy.* Raise *crops* next year on land now full of *stumps* Pull *trees* faster than able to *cut* them. Pull 1 to 5 acres without moving Milne Double, Triple and Quadruple attachment. Also Rotary Power Attachment for sawing, grinding, washing, etc.

MILNE MFG. CO.
788 Ninth St., Monmouth, Ill.



Postal brings Catalog

COOK YOUR FEED and SAVE Half the Cost—with the PROFIT FARM BOILER

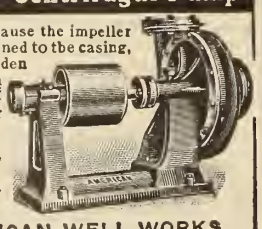
With Dumping Caldron. Empties its kettle in one minute. The simplest and best arrangement for cooking food for stock. Also make Dairy and Laundry Stoves, Water and Steam Jacket Kettles, Hog Scalders, Caldrons, etc. Send for particulars and ask for circular S.

D. R. Sperry & Co., Batavia, Ill.

⅓ More Water raised and delivered by the **"American" Centrifugal Pump**

Shunned by others because the impeller is accurately machined to the casing, preventing any sudden change in direction of the water. *Not an ounce* of power is wasted. Every "American" Centrifugal absolutely *guaranteed.*

Write for new *catalog.*



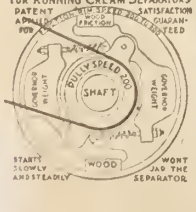
THE AMERICAN WELL WORKS
Office and Works, Aurora, Ill.
First National Bank Building, CHICAGO
Joplin, Mo., office: 115 West Fifth St.
Kansas City, Mo., office: 301 Scarritt Bldg.

MAKE BIG PAY DRILLING WATER WELLS

Our Free Drillers' Book with catalog of Keystone Drills, tells how. Many sizes; traction and portable. Easy terms. These machines make good anywhere.

Keystone Well Works
Beaver Falls, Pa.

FOR RUNNING CREAM SEPARATORS



DAIRYMEN

to run your cream separator right with your gasoline engine you must have a STRITE Governor Pulley. "If It's a STRITE, It's right." Ask your dealer or write us direct.

STRITE GOVERNOR PULLEY CO.
347 S. 3d. Minneapolis Minn.

IDAHO SOCIETY MEETING

The Various Subjects Discussed at Fifth Annual Meeting Held at Weiser, January 25-27

The fifth annual convention of the State Horticultural Society, held at Weiser, January 25, 26 and 27, was very well attended. The proceedings were full of interest and received close attention from the wide-awake body of horticulturists present.

J. U. McPherson, State Horticultural inspector, reported that up to this time there had been planted in Idaho about 120,000 acres of orchard, in Oregon about 115,000 acres of orchard, in Washington about 115,000 acres of orchard. Additional areas of commercial orchards are being planted from year to year. This led Mr. McPherson to urge, first, that varieties adapted to elevation and district should be selected; second, better methods of cultivation, careful spraying, pruning, thinning of the crop—and yet more important perhaps than any one of these, that the fruit should be carefully graded and packed and honestly marked; that when a box was marked "extra fancy" the purchaser should find that the fruit from top to bottom was really exactly what it claimed to be. This would help to build up the reputation of Idaho fruit and result in its being sold to best possible advantage.

During the trip of the governors' special Mr. McPherson visited for several days the apple markets in Chicago. He found that Idaho fruit of the extra fancy Jonathan had sold at from $2.25 to $4.00 per box, with an average of $3.10 per box. Extra fancy Rome Beauty sold at from $2.00 to $3.00 per box, with an average of $2.50 per box. Fancy grade Jonathan sold at $1.50 per box; fancy Rome Beauty $1.75; fancy Ben Davis 75 cents to $1.00. Third grade termed choice sold at 75 cents to $1.00 per box.

Cost of Growing Apples.

The cost of growing and packing fruit, especially where wrapped with paper, costs from 40 to 50 cents per box. The freight rate averages 50 cents per box. It therefore costs the grower 95 cents per box to produce fruit and get it into the Chicago market. Evidently there is a margin to the grower of $2.05 per box, less the commission and sale expenses on the extra fancy grade. A margin of $1.55, less selling expenses on the fancy grade, whereas the choice grades might return 5 cents per box and sometimes nothing at all. Hence the supreme importance that, in the selection of soil and location, cultivation, pruning, thinning and every detail connected with picking, packing and marketing, there should be the utmost skill and care exercised, in the effort to grow the largest possible percentage of extra fancy and fancy grades. It is hardly wise to make any shipment of third-grade fruit to Eastern markets.

The experience of the past and of preceding seasons has been, that the demand for extra fancy grades of fruit has never yet been supplied, and with the rapid expansion of markets there is every possible encouragement for the feeling that the market for extra fancy grades is not likely to be fully supplied. Hence the supreme importance of so using our superior soil, climate and conditions as to transportation, to develop and place in market the largest possible percentage of extra fancy and fancy grades of fruit.

In supporting this suggestion Mr. McPherson quoted statistics, stating that some years ago there was grown and marketed a crop of sixty million barrels. During the year 1911 the commercial crop of apples in the United States was about thirty million barrels; and during this period there had been a considerable increase of population of the United States, and an additional outlet in foreign markets have been created.

The Italian Prune.

At this moment there is a market interest in planting prunes. The harvesting of the crop immediately precedes the season for picking the Jonathan apple. As Mr. Hurst of Boise stated, a prune crop enables the grower to gather together a force of workmen, get acquainted with them, retain the better and perhaps drop out the less satisfactory workmen before engaging in the handling of the main apple crop.

The superior quality of the southern Idaho prune is indicated from the fact that in the John Steel orchard, at Parma, the sugar content of the dried prune runs as high as thirty-four per cent, only two and one-half to three pounds of the green fruit needed to produce a pound of the dried product.

The green fruit can be dried at an expense of $8 per ton or $24 per ton for the dried product. The John Steel orchard, in 1910, yielded two hundred and fifty pounds per tree. This, at one hundred and eight trees per acre, gives a yield of twenty-seven thousand pounds per acre, nearly a carload. The 1911 prune crop in the John Steel orchard sold at $160.00 and $170.00 per ton. The superior quality of the southern Idaho prune is widening the market both for the crop sold green and for the dried product. The prune is no longer a boarding house joke.

By-Products.

E. P. Smith of Payette, discussed the question of, "What Shall We Do With Inferior Fruit?" The first point mentioned in the discussion was that extreme care should be taken to give such superior cultivation; to prune with such skill; to cultivate and spray with such intelligence and care; to thin the fruit in summer and thus grow comparatively little fruit of inferior quality. There would, however, unavoidably be some fruit bruised in handling and a percentage of fruit from varied reasons that should not be boxed and placed on the market.

The outlet for this class of fruit is through the cannery, evaporator and the vinegar factories. Through the evaporator low grade apples are netting $5 to $10 per ton for the green fruit. The Idaho Canning Company paid $40 per ton for peaches, $45 per ton for Bartlett pears, $8 per ton for apples. Judge Fremont Wood reported that a Lewiston, Idaho, canning plant employed seventy-five people, and paid 1 to 1½ cents a pound for apples. This company is not able to supply the demand for their product. Discussions on this subject mentioned the importance of shipping only extra fancy and fancy grades of apples and utilizing the remainder in by-products.

Watsonville Methods.

Mr. W. N. Yost of Meridian, the secretary of the society, had visited Watsonville, California. This district annually shipped some five thousand cars of apples. There are ninety packing houses in and about the town. Conditions at Watsonville are peculiar in that the orchards are owned largely by Americans who acquired the land at an early date and had planted orchards. The habit of the district was almost invariably to sell the fruit on the trees. As soon as the orchard is out of bloom, the fruit is usually sold, one-fourth payment at that time, one-fourth at mid-summer and the remaining one-half in autumn. The spraying, picking, packing and sale of the fruit is in the hands of another class of people. They are wholly concerned with the care of the fruit, its picking, packing and sale. This work is in the hands of Slavonians, Japs and Chinamen. The grower of the fruit is satisfied to receive twenty-two cents a box for the fruit. The climate and soil conditions are such that even twenty-two cents a box, on tree, returns three hundred dollars per acre. In some orchards a strawberry crop is grown on the same ground, increasing the gross product and profit.

The work of spraying is carried on with such care and success that one

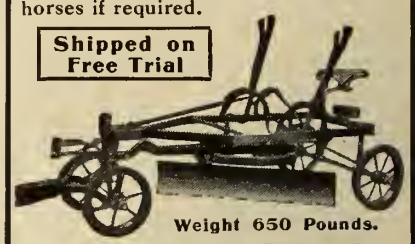
THE GLIDE GRADER DITCHER LEVELER No 1
A 2 HORSE, 1 MAN ROAD MACHINE

HERE is a real Road Machine. It is a demonstrated success and over 2000 Glides throughout the entire U. S. are daily proving our claim.

THE BEST ALL-ROUND ROAD MACHINE MADE

A machine built to do the work and does it in the easiest and most economical way. Will dig a V-shaped ditch 2 to 3 feet deep. Strong enough for 4 horses if required.

Shipped on Free Trial



Weight 650 Pounds.

Write us TO-DAY for Booklet and special good roads matter. All Free.

GLIDE ROAD MACHINE CO.,
508 Huron Street Minneapolis, Minn.

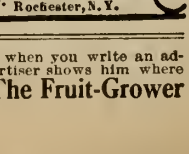
Soil Salvation

25 years practical experience back of Bostrom's book entitled "*Soil Salvation.*" After studying it, you will know how to make useless land grow as big crops as the best, by **DITCHING, TILE DRAINING, TERRACING** or **IRRIGATING.** This book is **FREE** to interested land owners who write for it—it fully explains the use of

The Bostrom Improved
$15 FARM LEVEL
With Telescope

A perfectly SIMPLE, ACCURATE and DURABLE outfit which includes Level, TELESCOPE with magnifying lenses enabling you to read target a quarter of a mile or more away—also Tripod, Graduated Rod, Target, Plumb Bob and full instructions. Is used and indorsed from the Atlantic to the Pacific for all sorts of farm leveling.

If not sold in your town, will ship direct on receipt of price, $15—or will ship C. O. D., subject to examination. Money back if not satisfied AFTER ACTUAL FIELD TRIAL.

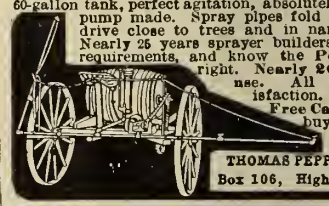


Bostrom-Brady Mfg. Co.
151 Madison Ave., Atlanta, Ga.

Shipping Weight 15 lbs.

Spray 30 Acres a Day
Potatoes, Small Fruits, Vines

Spraying that counts. 6 rows at a time with force to do work right. Foliage sprayed all over, under as well as on top. The Perfection Sprayer is also great at orchard work. Spray trees by hand. Easy to maintain 100 pounds pressure with two nozzles going. Strong 60-gallon tank, perfect agitation, absolutely best spray pump made. Spray pipes fold up—you can drive close to trees and in narrow places. Nearly 25 years sprayer builders. We know requirements, and know the Perfection is right. Nearly 2000 now in use. All giving satisfaction. Write for Free Catalog. Don't buy any sprayer till it comes.



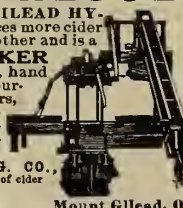
THOMAS PEPPLER & SON
Box 106, Hightstown, N. J.

CIDER PRESSES

THE ORIGINAL MT. GILEAD HYDRAULIC PRESS produces more cider from less apples than any other and is a

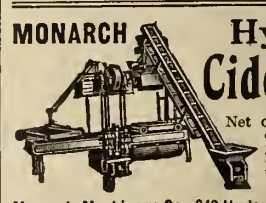
BIG MONEY MAKER

Sizes 10 to 400 barrels daily, hand or power. Presses for all purposes, also cider evaporators, apple-butter cookers, vinegar generators, etc. Catalog free. We are manufacturers, not jobbers.



HYDRAULIC PRESS MFG. CO.,
(Oldest and largest manufacturers of cider presses in the world.)
51 Lincoln Avenue, Mount Gilead, Ohio

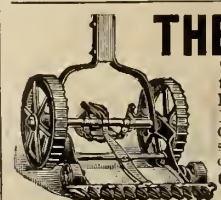
MONARCH Hydraulic Cider Press



Net owners 25% to 100% on investment per year. Ask for Free Catalog and "Good Tip" booklet telling how.

Monarch Machinery Co., 642 Hudson Terminal, New York

THE CLIPPER



There are three things that destroy your lawns: Dandelions, Buck Plantain and Crab Grass. In one season the "Clipper" will drive them all out.

Clipper Lawn Mower Co.
Dixon, Ill.

"KANT-KLOG" SPRAYERS
Something New

Spraying Guide Free

Gets twice the results with same labor and fluid. Flat or round, fine or coarse sprays from same nozzle. Ten styles. For trees, potatoes, gardens, whitewashing, etc. **Agents Wanted.** Booklet Free.

Rochester Spray Pump Co. 196 Broadway Rochester, N. Y.

A Good Word for us when you write an advertiser shows him where his advertisement pays and so helps us. Please say it for **The Fruit-Grower**

orchard has a standing offer of two dollars for any wormy apple that can be found within the orchard.

The Farmers' Share of the Dollar.

The changed conditions surrounding the grower at this time and one hundred years ago were brought out by the statement that in 1800 98 per cent of the people were producers. In 1890 only 52 per cent were producers, and 48 per cent were consumers. Twenty years ago the farmers received 72 per cent of the price paid by the consumer. In 1910 the producer received only 38 per cent of the price paid by the consumer. The resulting high cost of living should be modified by an increasing number of people moving back to the land.

Mice.

The question of mice in the orchard received some discussion. In some districts and especially where the trees stand in weeds, clover or alfalfa, some trouble is experienced from mice. At New Plymouth considerable harm has been sustained. In this discussion Mr. Hurst of Boise recommended one ounce of strychnine dissolved in two gallons of water. Dissolve in this sugar to cover the bitter taste of the strychnine. Soak in this one-half bushel of wheat, scatter the poisoned wheat in the runways of the mice. Another suggestion, strychnine can be more completely and rapidly dissolved in warm vinegar.

Commercial Cherries for Southern Idaho.

Choose sour varieties, preferably early Richmond, English Morello and Late Duke. The Montmorency is a good family cherry but its habit of ripening for a considerable period of time renders it less convenient to pick for the commercial market. A cherry is very sensitive to frost when in full bloom. It can endure a lower range of temperature while it stands in the "jacket," so called.

Mr. Henry Yost of Meridian, preferred to plant cherries in the spring, using one-year-old trees headed at thirty inches. In pruning it should be borne in mind that the Early Richmond and Late Duke require air to develop fruit of the best quality. With the English Morello the more dense the head and the more completely the fruit is shaded, the better the fruit. The cherry thrives best with excellent cultivation and comparatively little water. A warm loose soil seems conducive to the health of the cherry.

Should the tree be troubled by the black aphis, use kerosene emulsion. If troubled with the slug, spray with one pound of arsenate of lead to twenty-five gallons of water.

Mr. Yost would plant the cherry trees eighteen to twenty feet apart. At the age of six years a well-grown tree should yield about twenty-five gallons of fruit, which in his experience sold at twenty-five to thirty cents a gallon. B. F. Hurst of Boise, reported that from his orchard of Duke cherries he cleared three hundred dollars per acre. Mr. Hurst pays his pickers from four to five cents per gallon.

In southern Idaho the Russian mulberry fruits freely but apparently the fruit is not preferred by birds and it does not here serve as a protection against the birds in the cherry orchard.

Pears and Pear Blight.

In the discussion of pears and pear culture in the northwest, E. E. Whistler of Medford, Oregon, stated that they had found Bartlett, Anjou and Buerre Bosc most reliable and most profitable. They have experimented with the Comice, had sold a car of it for the highest prices ever paid for pears in New York but the variety proves so difficult to grow, so delicate and tender, that they wish now to forget it and not to plant this variety.

To guard against blight requires watchful care and the removal of the blighted portion of each tree as soon as blight appears, this by removing source of infection lessens the probability of blight. The character of cultivation has something to do with the production of blight. Blight is more likely to occur when trees are growing rapidly and rankly, the softer tissues admit of the reception of blight spores. Therefore such method of cultivation or lack of cultivation as will give a comparatively slow growth and well ripened wood lessens the probability of blight.

In large commercial pear orchards it is customary to employ a man during the blighting months, June and July, to watch the orchard carefully, cutting out the blight as it appears. In smaller orchards watchful care on the part of the men who are doing the cultivating has proved sufficient to keep the blight in check. E. F. STEPHENS.

Idaho.

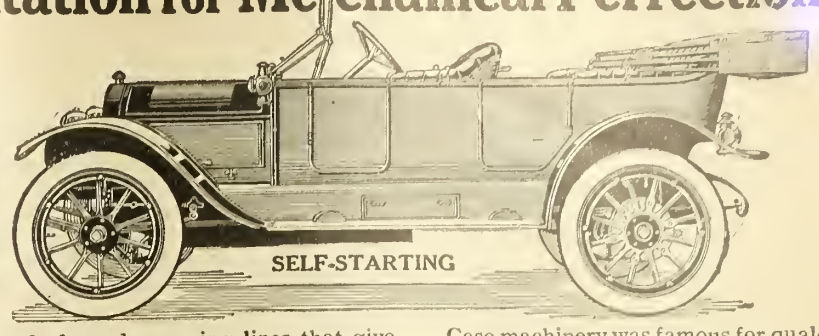
Drain Seeped Land.

Quite large areas in many of the irrigated sections of the West have been ruined by the seepage of irrigation water and the accumulation of alkali, or even stagnated by standing water. The developments which have been fostered through the drainage investigations of the Department of Agriculture have forced upon our attention the necessity of draining and at the same time have increased our confidence in the practicability of reclaiming seeped lands and of restoring them to their former productiveness. It is quite clear to the careful observer that the application of the various methods which are advocated by the Department of Agriculture in the draining of these seeped lands will soon be extensively practiced in many sections of the irrigated West.

It is useless to plant lima beans until the ground has become warm and in good tilth. If planted early the seed is liable to rot before it germinates, and those plants that start are liable to be stunted and be small producers.

Renew your subscription today.

Our 70-Year Reputation for Mechanical Perfection is Behind the GREATER CASE 40



The Greater Case—our new self-starting "40"—is a car with a name that for three generations has stood for high-class machinery.

We staked that 70-year reputation—that world-wide prestige—when we entered the automobile field.

And the car on which we risked so much has won new laurels for CASE.

The Greater Case is great in size and magnificent in appearance. It has all the elegance and style and luxurious comfort of the most expensive cars. But the dominant factor in its supremacy is the powerful, silent engine that's under the hood of the Case.

"The Car With the Famous Engine"

It took 18 years to perfect the engine that makes the Case supreme.

These 18 years devoted to designing, experimenting, refining, improving and perfecting this wonderful engine, have brought forth what we believe to be the masterpiece of America.

The engine—rated at 40 horsepower—shows 52 horsepower on brake test.

A Big, Handsome, Roomy Car

The Greater Case is big and roomy, with a straight-line body and sweeping lines that give symmetry and grace. It is richly finished and upholstered, handsomely trimmed, luxuriously appointed and up-to-the-minute in style. Its splendid lines and stunning style command universal admiration. No modern car at any price surpasses it in appearance.

The Case Eagle On Your Car

This emblem on an automobile has the same significance as the STERLING MARK on silver. It stands for highest quality and a guarantee that protects. It places at the disposal of the owner of a Case Car our

Nation-Wide Service

We have 10,000 Case Agents and 65 big Branch Houses scattered throughout the United States and Canada.

Wherever you carry the Case Eagle you will find friends. Case agencies everywhere. No other automobile concern in the world can duplicate Case Service.

Case machinery was famous for quality when your grandfather was a boy.

And for three generations that high standard of quality has steadily been maintained.

Big Value—Medium Price

The Greater Case is a high-grade car at a medium price. Fore-door ventilation—combination oil and electric side and tail lamps with storage lighting battery—**reliable self-starter**—36x4-inch tires—120-inch wheel base—11-inch clearance—**4½ x 5¼-inch cylinders**—Rayfield carburetor—Brown-Lipe transmission—Timken full-floating axles—cllular-type radiator—regulation trimmings—demountable rims—Englis' mohair top with side curtain and dust hood—high-grade windshield—12-inch acetylene gas head lamps—Prest-O-Lite tank for head lamps—one extra demountable rim—complete set of tools—jack and tire-repair kit—pump. These are some of the special features that belong to the Greater Case. If you want a lighter, less powerful car, investigate the well-known Case 30.

Get the Catalog—See the Car

Write for catalog and prices on Case Cars. See the car at nearest Case Agency. Ride in it, at our expense, as fast and as far as you wish. Advance orders for cars are coming fast—write us today, without fail.

J. I. CASE T. M. CO., Incorporated, Dept. 52, Racine, Wis.

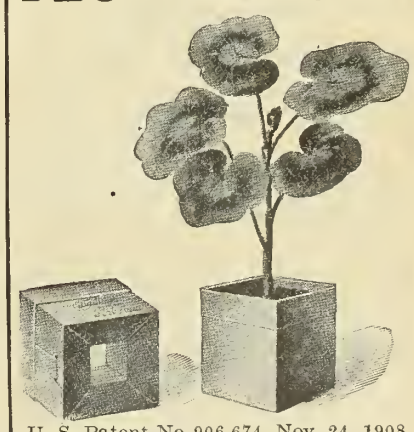
(13)

UP-TO-DATE FRUIT GROWERS

Many good apple growers are using Lime-Sulfur, but the most up-to-date growers in the United States, Australia and Africa use "Scalecide"—not because somebody else is using it, but their own judgment and experience tells them that the greatest perfection in fruit and foliage is produced by the continued use of "Scalecide," with less labor and less expense. "Scalecide" has no substitute. It is the only oil containing distinct fungicidal properties. Write for proofs. One barrel of "Scalecide" will spray as many trees as 3½ barrels of the best commercial Lime-Sulfur, and do the work much better. A postal request to Dept. "E" will bring you by return mail, free, our book, "Modern Methods of Harvesting, Grading and Packing Apples," and new booklet, "Scalecide—the Tree-Saver." If your dealer cannot supply you with "Scalecide," we will deliver it to any railroad station in the United States east of the Mississippi and north of the Ohio rivers on receipt of price. 50 gals., $25.00; 30 gals., $16.00; 10-gal. cans, $6.75; 5-gal. cans, $3.75. Address, B. G. Pratt Company, 50 Church Street, New York City.

H. J. WEBER & SONS NURSERY CO., WESTERN DISTRIBUTING AGENTS, NURSERY, MISSOURI

National Plant or FLOWER POTS



U. S. Patent No. 906,674, Nov. 24, 1908.
E. Bierwirth, Patentee.

A Paper Flower Pot! A Money Maker! A Money Saver! THE IDEAL in REALITY. It has no superior and is the best friend of all who use any kind of Flower Pots for Plants to be transplanted, started in Greenhouses, Hotbeds, etc. A sample (folded and boxed), and circular sent on receipt of 10 cents. Address

National Paper Box Co., Kansas City, Mo.

ORCHARD OF W. E. COLTON, ON BREWSTER FLATS, WASHINGTON.

MISSOURI A PEACH STATE

Peaches Are Grown Successfully in Most Sections of the State—A New Variety

At the Missouri Horticultural Society meeting held at Columbia, Missouri, January 9th to 12th, 1912, Mr. W. R. Wilkinson of St. Louis County, Missouri, presented the following paper on peach growing:

"Peaches can be grown successfully in most sections of Missouri. The district along the Missouri River, the Ozark region, and on the high bluffs of the Mississippi River between St. Louis and Cape Girardeau are all especially well adapted to the growing of this luscious fruit. We often hear that the growing of fruits, generally, will be overdone. I heard that at a meeting of this society at Farmington, Missouri, ten years ago—and good fruits, especially peaches, were higher priced on the markets last year than for years past. I look for a large decrease in the production of all deciduous fruits in the next ten years. Ravages made by San Jose scale are being heard of in all sections. On this account I look for and expect all farmers and small growers to drop out of the business, and all fruit growing in the next decade to be in the hands of expert horticulturists—men who are up to date in their business, and know how to combat and control this pest. Few men who have not had actual experience in their own orchard realize the devastation now being done by this scale. I am just in receipt of a bulletin from the state of Ohio, giving the information that Ohio has 164,000 acres less apple orchards than twenty years ago, and is today producing one bushel of fruit as compared with three and one-half bushels a dozen years ago—yet the same soil, same sunshine and same opportunity are there now as then.

The Best Location.

"In selecting a locality for a home orchard, the highest land on the farm is generally preferable, as it gives the desired air drainage. This is essential, as the fruit is not so likely to be injured by frost, and freckled and discolored by mildews, when grown on a site elevated above the surrounding lands. For a commercial orchard, accessibility to a railroad, where quick and rapid transportation facilities are available, is important.

"Where land is level enough for cultivation it should be thoroughly plowed and harrowed before planting—the more thorough the preparation, the better start and growth the trees will make the first year. I have had splendid results on rough, hilly land by cultivating a few feet around each tree by digging up and pulverizing the soil just after the tree is planted. Then add to the surface soil a handful of nitrate of soda to each tree. Later in the season, about July, the mower is run over the orchard, all vegetation clipped and raked, and used as a mulch around the trees. This system has given as good results as cultivation, and at much less expense. Trees so treated will make from two to three feet growth the first year.

Kind to Plant.

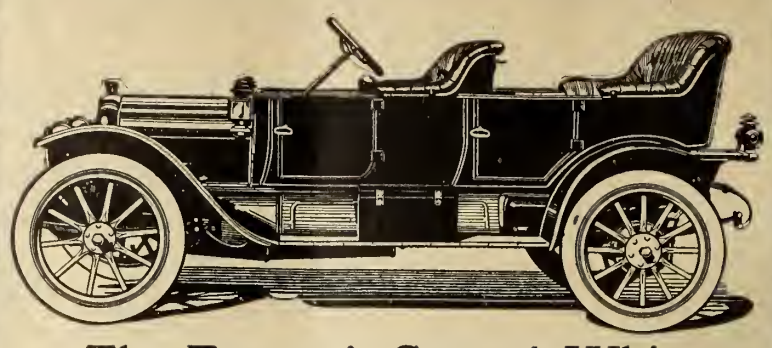
"I prefer medium sized trees four to five feet in height, one-half to three-fourths of an inch caliper, either one year from budding, or heavy June buds. If these trees can be secured from local nurseries, all the better. If not, get from the nearest reliable nursery. Under no circumstances would I advise planting seedlings of unknown origin, or seedlings of your own growth. In buying trees, look out especially for San Jose scale. The package containing trees will likely have a certificate of inspection, but this will not be conclusive evidence that stock is free from scale. I know of nurseries in our own state that are duly inspected every year, that have distributed scale to every part of the state in which the stock is sold.

"For a family orchard I would plant varieties of high quality and ripening so as to give a succession throughout the season from June to October. For market, plant fruit that has high color and good carrying qualities. I planted a large orchard of 8,000 trees seventeen years ago with the following varities: Saint John, Mountain Rose, Family Favorite, Foster, Elberta, Old Mixon, Wheatland, Late Crawford, Salway, Smock, Wonderful, Crosby, Picquet, Heath and Bonanza. In my more recent plantings I have discarded all these except Elberta and Mountain Rose. In the spring of 1901, I planted an experimental orchard of ten trees each, of Mammoth Heath, Stark Heath, Krummel October, Poole's Favorite, Gold Dust, Henrietta, Elberta Cling, Champion, Alton, Chair's Choice and Stump the World. I would not plant any of these varieties in a commercial orchard except the Alton, which is really another name for Carman, fruit and tree being identically the same with me. I began planting a large commercial orchard two years ago, and I am planting the following varieties, named in order of ripening: Mayflower, Greensboro, Carman, Hiley, Slappy, Belle of Georgia and Elberta. Mayflower is the only peach I ever grew that produced ripe peaches fourteen months after planting.

A New Peach.

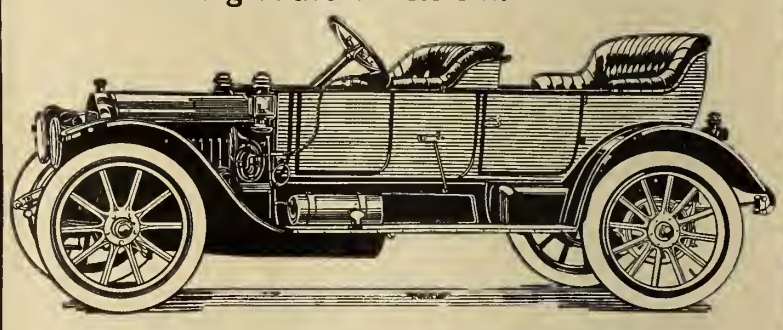
"All these varieties have good color, carry well, and are especially adapted to long shipments. I know of only one peach that can be recommended for ripening after Elberta. This is a chance Mountain Rose seedling growing in my orchard. I am propagating this and will offer it to the growers later under the name of Gov. Hadley. It is a perfect freestone, white fleshed, beautiful pink cheek, begins ripening two weeks after Elberta, and has a long season of ripening. To an amateur, one who has just begun to plant a commercial orchard, I would say plant at least 1,000 trees of one variety, and in blocks. Do not mix varieties, but have all your Elberta in one block, and other varieties in separate solid blocks. This will expedite picking and packing. This system will enable you to ship in full car lots if desired. My location is only about three hours ride from St. Louis by two express trains daily, making it more convenient and about as cheap to ship by express as to use ice and ship by car lots.

"Some varieties of peaches are re-



The Farmer's Car—A White

THERE are certain fundamental advantages which the farmer demands of a motor car before he is interested to the point of buying. Probably no class of men are more critical of the mechanical principles involved than the farmers, because of their constant operation of farm machinery. To them—the simplicity of White motors—the total absence of complicated parts—appeals at once. They know it means that the engine is easy to care for—that adjustments are made without any waste of time or energy. Trained to value mechanical excellence as well as economy in operation, farmers are quick to grasp the possibilities of the medium-sized cylinders and the long-stroke engine of the White car—quick to see the economy in a transmission having four forward speeds instead of three. In other words, the farmers are better equipped by their experience to appreciate the designing and building of the White car.



A Farmer Wants the Best

BEING a judge of principles and construction, a farmer is willing to pay for the car that comes up to his expectation. Size for size, or power for power, the White gasoline cars are the most economical motors to operate. No design has yet been found equal to the long-stroke engine—no method of building equal to the cast en bloc cylinders—no materials used equal to the chrome-nickel steels and vanadium steels, heat-treated. Even the frames of the White cars are heat-treated. Nothing but ball-bearings are used throughout. If there is a kind of steel—kind of radiator—any refinement of manufacture—which you know would make a car better, you will find it in the White, and that is why the White gasoline cars are so wonderfully efficient and cost so little to operate and maintain.

Let us send you our latest catalogue and testimonials of the actual experience of users—hundreds of them—they know.

The White Company

East 79th Street, Cleveland

LARGE STOCK OF
Apple Trees
Apple Seedlings
Shade and Ornamental Trees
Apple Grafts Made to Order
WRITE FOR PRICES
YOUNGERS & CO.
GENEVA, NEBRASKA

Trees and Plants
Do you want the best at prices that are right? If so, look at this Apple and Peach at 5c each. Plum, Pear and Cherry at 12c and 15c each. 40 Concord Grape for $1.00. All of our trees are grafted or budded from good bearing stock. Get our catalogue and price list. They tell the rest. Give us your order. We will save you money.
THE ROEDER NURSERIES, OSCEOLA, MO.

FRUIT TREES
CHERRY, beautiful 2-yr., $8 to $12 per 100. A full assortment of Peach, Apple, Plum and Pear. Small Fruits in variety. Get our catalog with endorsements. It is Free.
H. S. WILEY & SON. Estab. 1847
Maple Street, Cayuga, N. Y.

The Martha PEACH
Every fruit grower should have Martha Peach trees.
No larger peach on record. Specimens have weighed 17½ ounces. We also have good supply of Apple, Pear, Cherry, other varieties of Peach, Asparagus Roots, Ornamental Trees and Shrubs.
ARTHUR L. NORTON
Nurseryman and Fruit-Grower, Clarksville, Mo.

Trees By the Millions. A complete line at wholesale prices. Large supply of peach trees and Privet Hedging.
THE WESTMINSTER NURSERY, Westminster, Md.

STRAWBERRY PLANTS

We have an unusually fine stock of Strawberry Plants, chiefly of the commercial varieties, such as Aroma, Gandy, Excelsior, Klondyke, Lady Thompson, etc. These plants are well rooted, are perfectly healthy and free from insects, and are in every way desirable. Write for prices on the quantity you want. Order early, and be sure of getting the varieties you want.

Peach and Apple TREES

Our line of nursery stock is very complete, and we have an especially fine lot of trees of commercial varieties. In peach trees, we have June-budded and one-year trees, of all standard sorts. We can supply apple trees in any quantity. Send list of your wants for prices.

Cabbage Plants

If you grow early cabbage, write us for prices of our frost-proof plants. We are specialists in this line, and will have millions of strong, stocky plants for spring delivery. You save time and money by using our plants. Write for prices and state when you want plants delivered.

Chattanooga Nurseries

D. W. Hunter, Prop. Chattanooga, Tenn.

RIGHT NOW

Is the Time to Send for Our Price List on

Fruit Trees

Varieties True. No Disease.

WE PAY THE FREIGHT

For Price List Address

NEW HAVEN NURSERIES

Box 125 New Haven, Mo.

GET 35c TO 50c MORE PER CRATE FOR YOUR RASPBERRIES

BY PLANTING OUR VIGOROUS NEW EARLY

"BLACK PEARL"

Crops very heavily and is a firm shipper. Free from blight, never crumbles, and is five to ten days earlier than other varieties. Never winter killed. Large as the Cumberland, but more prolific, and jet black. Tested nine years under our own observation. Sells on the market for 35c to 50c more per crate than all other varieties. Write for full information. Free catalogue and price list of fruit trees, small fruit plants, ornamental shrubs and flowers.

Trade Mark, registered. Serial No. 84394.

Established 20 years.

HOLSINGER BROS.

Box 69, ROSEDALE, KAN.

Strawberry PLANTS

Money making varieties, true to name. Asparagus Roots. Seed Corn from prize winning varieties, for largest yields. Write today to the square deal Plant, Seed and Poultry man for his 32nd Annual Catalog, full of valuable information.

JOHN W. HALL

Marion Station, Maryland

STRAWBERRY PLANTS

Nearly 100 varieties to select from. We guarantee our plants to be high grade and equal to any. Write for our 19th annual catalogue.

FLANSBURGH & POTTER CO.

BOX 345 LESLIE, MICH.

FRUIT TREES FROM GROWER TO PLANTER. All kinds. Small sizes, 4c up. Best No. 1 stock cheaper than others. Extra fine Apple, Peach, Cherry. Est. 1858. Catalog free. Fremont Nursery Co., Fremont, O.

pnted to be more tender in bud than other varieties, but my experience teaches me that freezing weather when in full bloom will destroy all fruit; prior to or after the blooming period they will stand some freezing, two to four degrees. On two occasions in the last few years my apple crop was killed by late freezes, while the peaches produced a full crop. The peaches had passed the blooming stage. Some varieties, such as Alexander and Sneed have a long period of blooming, while such varieties as Mamie Ross, Reeve's Favorite and Waddell bloom out in a few days, and such varieties as Annie, Champion, Family Favorite, Greensboro and Triumph bloom a few days later, making them less subject to cold weather.

Pruning and Spraying.

"There are two seasons of planting—fall and spring. I prefer fall for planting apples, but recommend that the peach be planted in the spring. Only dig holes large enough to prevent crowding of the roots and plant the tree about two inches deeper than it grew in the nursery I prefer to grow in rows a rod apart, and plant trees on the diagonal plan. This will require 160 trees to the acre, and there will be a distance of about twenty-two feet between the trees.

"When planting I trim trees to a stub, cutting off all side branches and cut the main stem thirty inches long. As soon as planted I place wrappers around the body of each tree to protect from rabbits and mice. I do no further trimming the first year. Early in the spring of the second year, I trim so as to get a low, spreading head, and try to get three or five limbs to start with. A tree properly headed, needs only an occasional limb removed in after-life. Too severe pruning only stimulates growth and requires much additional pruning, especially when trees are about eight or ten years old.

"I dehorn or cut back every alternate row. This gives new wood for producing fruit three years after this. When these rows begin bearing, the other alternate rows are dehorned. This will give an orchard with all new wood, and more vigorous and prolific than a real young orchard, and by practicing this system, you need never have old broken-down trees.

"Orchards infested with scale should be sprayed thoroughly with lime-sulphur solution in early spring, when trees are dormant. This spray is also a perfect preventive for leaf-curl. I would advise every peach grower to send to the Arkansas Experiment Station, Fayetteville, Arkansas, and get their late bulletin entitled "San Jose Scale and Its Control." This is the best and most reliable bulletin ever issued on scale extermination. Granting that you will do this, I will pass on to subsequent sprayings necessary to produce perfect fruit.

"Prof. E. P. Taylor, when connected with the Missouri Fruit Experiment Station at Mountain Grove, discovered that arsenate of lead, two pounds to fifty gallons of water, sprayed on the trees at the time shucks had fallen would not only destroy plum curculio, but that this insect was largely responsible for the brown rot, as its punctures on the fruit was largely the cause of these rots, and in destroying this insect you prevent in a large measure the brown rot, the greatest enemy of the peach. I have used this spray for three years together with the self-boiled lime-sulphur with very gratifying results. I have had no wormy fruit and absolutely no rot since I began using these sprays. As nearly all experiment stations and manufacturers of spray machinery have given these formulas and full instructions as to preparation and use, I will say spray as directed, first for scale, and second for insects, and third and fourth for rot. This will enable you to produce perfect fruit with a beautiful color. I consider these sprays the most important of all after trees are in bearing.

The Harvest.

"When the green color of the underside of the peach has changed to a creamy white, it is ready to gather, and should not be gathered until then, as it increases in size very materially just at this time. I pick in half-bushel baskets, which are delivered to the packing table, which is light and easily movable, and carried along as peaches are picked. Careful hands pack from table to crates or baskets, as the market demands. I have found the pony bushel basket holding about forty pounds the most desirable package for the St. Louis market. Eastern markets prefer the four and six peck crates for fancy fruit, but the expense of packing in these small packages is quite an item, especially when labor is scarce. Let the fruit be well graded and nothing but fancy fruit be marketed, and let your motto be:

'Pack for others to buy and use,
Like you would have others sell
unto you.'"

The Weather Bureau's Co-operation.

In dealing with the warning sent out by the weather bureau during the past year to protect the growers of perishable products against frost, Prof. Moore says in his annual report to Secretary Wilson:

"Special attention was given during the year to warnings for the benefit of shippers and growers of perishable products. Forecasts were sent out daily from a number of our larger stations, giving the probable temperatures likely to be encountered by perishable goods shipped in any direction.

"Sub-stations were established in the cranberry marshes of Massachusetts, in the citrus fruit districts of Florida, and in some of the orchard districts of Washington, Oregon, Idaho, Utah, Colorado and California. During the frost season special reports are sent from these sub-stations to the forecast center, where they are used in the preparation of a special forecast in the afternoon or early evening, supplementing the regular morning forecast. By this means the growers are enabled to take such precautionary measures as are available to protect their crops. In Washington, Oregon, Idaho, Utah, Florida and California the fruit growers smudge and fire when necessary, while in the cranberry regions the cranberry growers flood their bogs to prevent injury. In this line of work it has been the policy to furnish the individual with information particularly applicable to his orchard, rather than to have him depend upon a general forecast that would apply to a large section, but could not accurately cover the section in detail. Effort has also been made to encourage the growers to organize and employ protective measures in saving their crops from frosts and freezes. Thus far the work has been successful beyond expectation. One example of the fruits of this work is instanced by a letter from Mr. Thomas F. Mahoney, secretary of the Chamber of Commerce of Grand Junction, which was published in the Denver News of May 18, 1911. In this letter it is claimed that the prompt action taken by the orchardists of Colorado's western slope on the receipt of the warnings of a severe freeze last spring resulted in the saving of $2,500,000."

Mixing Lead Arsenate.

The Ohio Experiment Station, in their recent spray calendar, Bulletin 232, makes a very good suggestion concerning mixing arsenate of lead with water. They say: "Those who have used arsenate of lead have experienced the difficulty of getting the lead to mix after it has settled to the bottom of the package, or after it has partially dried out. Frequently the mixing of the lead requires as much time as any of the other processes in preparing a sprayer full of mixture. We have found that an old churn is very efficient for the process, and if one is not available, a substitute may be made quite readily from a discarded 100-pound arsenate of lead keg, or any keg of similar size. In making the churn, have the lid fit snugly, and it is preferable if the cross-arms of the dasher are almost as long as the inside diameter of the bottom of the keg."

Subscription expired? Don't miss big special issues. Renew today.

BAUER'S FAMOUS SOUTHERN GROWN

Berry Plants

are Grown Below the Blizzard Belt Line

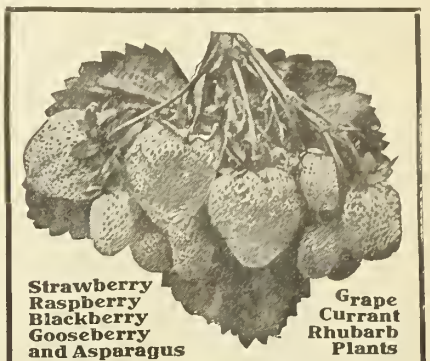
Our plants are hardy for they are grown without any protection and they come to you with nice glossy leaves; not just a little tender heart as the mulched plants have. When you break that heart your plant is gone. Our plants cost you no more than this tender Northern grown plant and will arrive in nice growing condition. Get my book,

How to Grow Strawberries

It tells the facts of strawberry growing from start to finish. This book is one that I wrote myself and I am a strawberry specialist; at it thirty-two years. Copy free to you.

J. A. BAUER

BOX 15 JUDSONIA, ARK.



Strawberry Raspberry Blackberry Gooseberry and Asparagus

Grape Currant Rhubarb Plants

Everything fully guaranteed. No agents, premiums or schemes of and kind. All plants sold strictly on their merits, and IN LARGE LOTS AT WHOLESALE PRICES, 20th annual catalogue free.

A. R. Weston & Co., R. 11, Bridgman, Mich.

BLACK PEARL RASPBERRY

Now in better condition than any other variety. Try it. Send for free descriptive circular and for catalogue of Small Fruit Plants, Trees, Ornamentals, Asparagus, Rhubarb, etc.

Holsinger Bros., Rosedale, Kansas

A Start in Strawberries

for $1.50 postpaid. Send us $1.50 and we will send you 100 of the best strawberry plants for the Central Mississippi Valley. They are drouth-resisting and will bear when all others fail. Also send for our free booklet, "Strawberries for the Home and How to Raise Them." Order early to avoid the rush.

Dodge, Blachly & Co., Cuba, Mo.

Rocky Ford Cantaloupe Seed

The difference between a good and a poor cantaloupe crop is very often a matter of whether you planted good seed or not. I am the grower of the best solid net rust-resistant, thick-meated Rocky Ford cantaloupes you ever saw. I won first premium on Rocky Ford cantaloupe at the Arkansas Valley Fair at Rocky Ford and Colorado State Fair, Pueblo, 1910-1911. I guarantee satisfaction. $1.50 per lb., 10c packet. Booklet Free.

R. H. JAMES ROCKY FORD, COLO.

NEW STRAWBERRIES

1912 catalog free to all. Reliable, interesting and instructive. The New Everbearers and other important varieties. Address

C. N. FLANSBURGH & SON, Jackson, Mich.

FRUIT TREES

12 Strong Budded Cherry, only $1.00; 50 Concord Grape Vines, only $1.00. For long list of snaps and premiums, send for free catalogue, with due bill. Benson-Omaha Nursery, Dept. 7, Benson, Neb.

Money in Buying Best Nursery Stock Grown Trees, Vines and Ornamental. None grown that excel ours. Handsome catalogue free.

GRAND MERE NURSERY, BARODA, MICHIGAN

PRICES RIGHT—FREE CATALOGUE—NO AGENTS

Three Hundred Acres of All Kinds of

SMALL FRUIT PLANTS

Most complete assortment in America. Guaranteed true to name. Wholesale and Retail.

SELIGMAN PLANT CO. SELIGMAN, MISSOURI

SEEDS Large package Giant Pansies and fine Illustrated Catalog **FREE**

SPECIAL OFFER: 10 varieties Burbank's Floral Gems and 10 sorts Spencer Sweet Peas, 6c.

A. C. ANDERSON, Box 9, Columbus, Nebr.

SURE GROW TREES

500,000 Apple, Pear, Peach, Plum and Cherry trees for sale. Berry plants, vines, roses and shrubs.

Thirty-three years of fruit-tree growing enables us to furnish absolutely the best trees money can buy. Green's trees are true to name, hardy and bear such delicious fruit as thirty-three years of the most scientific grafting can produce.

AGENTS PRICES CUT IN TWO
Green's Trees
DIRECT TO YOU

All we ask is one small profit. This means you get your trees at half what agents charge.

SEND FOR GREEN'S FREE 1912 CATALOG.
It tells you how to plant and care for your trees, and gives other valuable information. If you send now, at once, you will also get Green's Book, "How I Made the Old Farm Pay."

Established 33 years. Capital $100,000
GREEN'S NURSERY COMPANY
Box 4. Rochester, N. Y.

GOOD
Strawberry Plants
Is what you want for spring planting, we have them at the right price. Our fall trade was larger than ever before. We are now booking orders for spring. Send today for our spring catalogue.
LOUIS HUBACH Route 2 Judsonia, Ark.

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing
Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*
M. BRUNSWICK & CO., Rochester, N. Y.

You Won't Lose Money on Diseased Trees

In the irrigated St. Stephen Valley of Texas, 4,000 feet above sea level, where the aridity of the atmosphere renders fruit trees immune to fungus and bacterial troubles. There's no danger from freezes, either—the climate is mild and dry the year around, and you can work out doors nearly every day in the year.

The soil is a deep, rich loam watered from a reservoir formed by a giant concrete dam, and peculiarly adapted to the growing of Bartlett pears, grapes, peaches, apples, etc. Other crops do equally as well—from alfalfa you get five or six cuttings a year and grains and garden truck make splendid yields.

The main line of the Southern Pacific Railway passes within 11 miles of the valley, and the Kansas City, Mexico & Orient is building directly through the property. No orchard or farm will be over 2½ miles from a railway townsite and the majority will be much closer. We are selling this exceptional land in tracts of ten acres or more for $100 an acre—about half the price of land of similar quality and advantages. You can pay one-fourth down and the rest in three years.

Come down and see if the land isn't far better than we claim. The round trip fare from Kansas City the first and third Tuesdays of every month is only $32.50, and we'll pay your expenses while you're looking over the property. Send for free illustrated book, "Where There's Water and Sixteen Feet of Chocolate Loam." It tells all about it.

GREEF & KELLEY
General Sales Agents for
ST. STEPHEN LAND & IRRIGATION CO.,
B-714 Dwight Bldg., Kansas City, Mo.

Do You Want a Home in the
Beautiful Ozarks
of Missouri, in the Famous Strawberry Land
Apples, Peaches, Pears, Grapes, Raspberries, etc., all grow excellently. Ideal location for the dairy and poultry business. We offer for sale 60,000 acres of land in 40-acre tracts or more, cheap and on easy terms. Located in Stone and McDonald counties. For further information address
McDonald Land & Mining Company
Rooms 301-2 Miner's Bank Building
Joseph C. Watkins, Mgr., JOPLIN, MO.

New York Home Farms
Improved and for sale by us at low prices and on easy terms. For specimen list address or call upon
B. F. McBURNEY & CO., 703 Fisher Bldg., Chicago, Illinois, or Room 309, Bastable Block, Syracuse, N. Y.

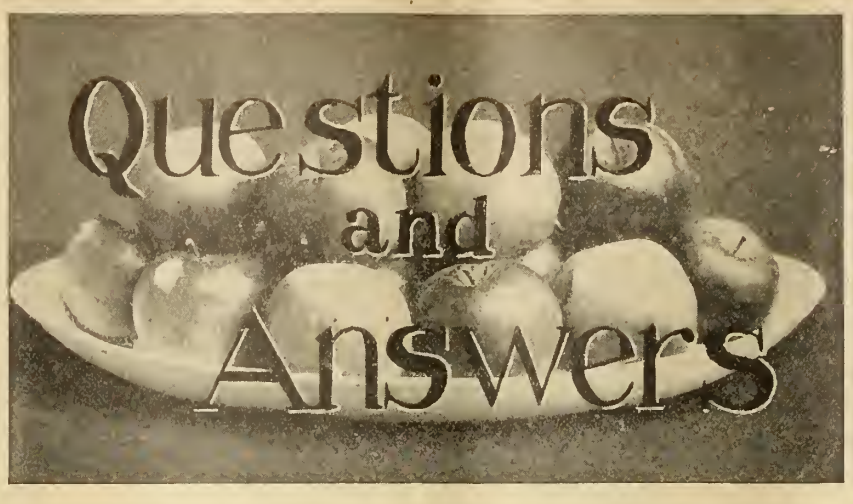
Money-Making Fruit Farms
at bargain prices to settle estates quickly throughout Michigan, New York, Delaware, North Carolina and Florida. "Tell us what you want and we will tell you where it is." We pay buyer's car fare. E. A. Strout Farm Agency, Largest in the World, 47 West 34th St., New York.

BEAUTIFULLY ILLUSTRATED
BOOKLET ABOUT DELAWARE
the State of red apples, luscious peaches, strawberries and of ideal homes. Address
State Board of Agriculture, Dover, Dela.

Map of Michigan Free!
A Postal Card will get you one.
J. E. MERRITT, MANISTEE, MICHIGAN

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. Hanson & Son, Hart, Mich.

Coyne Brothers Handle All Kinds of Fruit and Produce
160 Water Street, Chicago, Ill.



This department is conducted for the benefit of the reader. All inquiries are answered by experts. Ask questions. Send specimens of injurious insects and diseases for identification and means of control. Sign your name and address plainly.

Stayman Winesap and Dynamite

Question: Do you consider the Stayman Winesap as good and regular bearer as the old Winesap? What advantages has it over the old Winesap? The nurserymen seem to prefer the Stayman, while the Virginia Experiment Station seems to prefer the old Winesap. Which comes into bearing earliest? What do you think of dynamite in hard ground when planting?—J. A. F., Virginia.

Answer: The Stayman Winesap is considered to be a very much more regular bearer than the old Winesap. Stayman is an annual bearer in most sections of the country, while the old Winesap is a decidedly biennial cropper. Stayman is considerably larger than old Winesap and is desirable on that account. To many persons it has a better flavor than the old Winesap and the trees are heavier producers. It is merely a matter of personal choice as to which is the better, although Stayman seems to be coming into popularity, making more friends than the old Winesap ever had.

There is a great deal to be said in favor of the use of dynamite in hard ground when preparing for setting out an orchard. I would surely use it if I had another orchard to plant on stony land or land that had a high subsoil. Through the manufacturers of dynamite you can secure some very valuable literature on its use in farming. If you have not obtained any of these dynamite publications, I would suggest that you correspond with firms advertising dynamite in The Fruit-Grower.

Woolly Aphis in New Ground

Question: I am thinking of planting an apple orchard in new ground from which only one crop of corn has been taken. Some one suggested there might be danger from the woolly aphis on account of the number of roots in the land. Would it be advisable to plant as fillers the Yellow Transparent apple? I am situated about seventy-five miles from Washington, D. C., and about one hundred miles from Baltimore, Md.—F. B., West Virginia.

Answer: It is possible that there would be some trouble from woolly aphis in the orchard you speak of, if it abounds in the vicinity. However, we would not let that worry us in the least if we wanted to plant an orchard. This insect can be controlled with tobacco or kerosene emulsion, and need not cause any more worry than any other insect trouble.

The Yellow Transparent, on account of its upright habit of growth and quick maturity, makes one of the most desirable fillers for an apple orchard. We believe it would serve your purpose well.

Cedar Apple Fungus

Question: Is there anything to the idea that apple trees in the vicinity of cedar trees will become affected with the cedar apple fungus? Would you advise orchardists to not plant cedar trees?—W. L. M., Missouri.

Answer: It is a positive fact that cedar trees carry over a disease that causes a great deal of trouble to apples. This is what is known as "cedar apple rust." It attacks the foliage and the fruit, causing yellow spots. These yellow patches are considerably thicker than the rest of the leaf and will be found to have a peculiar growth extending from them. These yellow patches on the apple give off spores, which are carried by the wind to cedar trees, where some of them lodge and germinate and in the course of time form little balls which are called "cedar apples," on the cedar trees.

You have no doubt observed large numbers of these and in the spring have observed them send out long yellowish jelly-like fingers in great numbers, immediately after a warm rain. These jelly-like fingers are masses of spores. They dry up and blow away, and some of the spores light on the foliage and fruit of the apple tree, where they germinate and give rise to the thick yellow spots common of cedar apple rust. This condition does not respond very readily to spraying, but a better method is to keep cedar trees away from the apple orchard, and in that way no trouble ever comes from this disease.

Growing Your Fence Posts

Question: What do you think of the idea of planting catalpa or black locust along line fences around the farm, say a rod apart, and after a few years cut each alternate tree for posts?—H. K., Missouri.

Answer: There is an objection to planting any kind of a tree in a fence row. Where it is desired to grow trees for such purposes, it is a much better method to plant them in a solid block where they can be cultivated for a few years and then cut and made into fence posts in the regular manner. The great objection to planting in the fence row is that they cannot be cultivated, and they will not make as suitable fence posts at the end of six or eight years as where the same number of trees are planted in a solid row or in a block and cultivated as the trees require.

Where trees are planted in the fence row they result in more or less damage to crops that are planted in the fields, the damage coming not only from the shade that is cast by the trees, but also from the fact that the trees will take moisture and fertility of the soil away from the crops growing near them.

Either the Catalpa or Black Locust make very fine trees for fence posts, especially when they are handled in the right manner. You know of course, there are several species of Catalpa, the only one of which is suitable for fence posts being the Catalpa Speciosa.

Home-Made Concentrated Lime-Sulphur

Question: Can lime-sulphur in concentrated form be made up at home before the time for spraying, and be stored in say, five gallon cans, convenient to use when wanted?—S. E. F., Michigan.

Answer: Here is the formula for preparing concentrated lime-sulphur solution, according to the method recently announced by the Illinois Experiment Station. This formula is said to produce a concentrate mixture which will contain less sludge than any other method:

"Place in the kettle in which the lime-sulphur is to be made, about fifteen gallons of water, then start the fire. As soon as the water is heated, put into it 50 pounds of lump lime, free from all air-slaked particles. When the lime is slaking vigorously, add 100 pounds of sulphur, mix thoroughly with the lime, adding sufficient water (preferably hot) to keep a thin paste of mixture. As soon as all the lumps of lime are slaked and the vigorous action has subsided, add sufficient water to bring the total volume in the kettle to about 70 gallons. Keep the mixture at the simmering point and stir continually until all the lime and sulphur are in solution, which can be determined by examining a dipperful of it. This should require only about one-half hour provided hot water has been used in bringing it to the total volume. Occasional measurements should be made with the graduated stick, as the volume of the solution at no time should be less than 65 or 66 gallons.

"Under these conditions, provided a comparatively pure lime has been used, the amount of green sludge should be less than 1 per cent, and over 95 per cent of the sulphur should be in solution. When all of the lime and sulphur are in solution, the contents of the kettle should be strained into the container and allowed to cool. When cool, it should be put in the supply barrels and kept as nearly air-tight as possible. As soon as the cooking kettle is emptied, another batch can be started immediately. A properly prepared solution made by this formula and diluted 1 in 6 or 7 gives a spray, 50 gallons of which will contain about 12 pounds of sulphur in solution, which strength is equivalent to the best commercial brands diluted 1 in 10 or 11. For summer spraying, dilute 1 in 17 or 18, which is equivalent to the commercial brands diluted about 1 in 35. Because of the wide variation in composition of different strength lime-sulphur solutions, the hydrometer should not be depended upon if accurate dilutions are desired."

What Made the Apples Wormy?

Question: I sprayed my apple trees last spring with lead arsenate, making the first spraying after the petals dropped. Two weeks later I gave them another spraying. The summer apples were about one per cent wormy, while the winter apples were very wormy. Should I have given another spraying? Are two sprayings enough? Can you tell me of any remedy that will keep rust off the raspberry canes?—J. W. S., Colorado.

Answer: The difference in worminess between your summer and winter apples might have been due to the fact that a second brood of worms came late in the season. Summer apples are generally off before this late brood comes in, and on this account are not so liable to be wormy.

Two sprayings are sufficient for good results, but it makes a great deal of difference how these applications are applied and when. If you followed the Morrisania notes in The Fruit-Grower during the past summer you could learn the way how Mr. Irvine sprayed on our Morrisania ranch at Grand Valley, Colo. He made two applications and harvested a crop of

One can start farming here on less capital—

than anywhere," says Mr. H. V. Tull, who went to Jonesboro, Ark., from Naperville, Ill. "We paid only $25 per acre for this land and we get fine crops of corn, cotton, clover, etc. We have good roads, rural free delivery, telephones, schools, etc., *all we had in Illinois.*"

J. H. Cash went to Camden, Ark., with $140. He paid $100 on his farm, bought a second hand-wagon for $10 and a pair of cheap mules. In three years he paid all his debts and bought 80 acres *more.* All along the

Cotton Belt Route in Arkansas and Texas

you will find scores of men who started with practically nothing and are now well fixed. Six years ago, C. S. Martin landed in Mt. Vernon, Tex., with $8.50. He now has a splendid 200 acre farm and is one of the best fixed men in the county. It is *easy* to get ahead fast where fertile land is *so cheap,* and your own living costs *so little.*

There are many sections in Arkansas and Texas that are *just suited* for your line of farming—where you can buy *many* acres with the price of every *one* you now own—get the benefit of the *big* boost in land values sure to come—live in a mild climate where you can do money making work *every* month—without sacrificing *anything* in living conditions that you now have. Telephones, good schools, rural delivery, modern towns, close markets—you'll find them all through Arkansas and East Texas.

On the 1st and 3rd Tuesday of each month there are very low round trip excursions to Arkansas and East Texas via Cotton Belt Route, allowing 25 days for trip and *free stop overs.* Plan to go on the *next* one.

Get our new free books

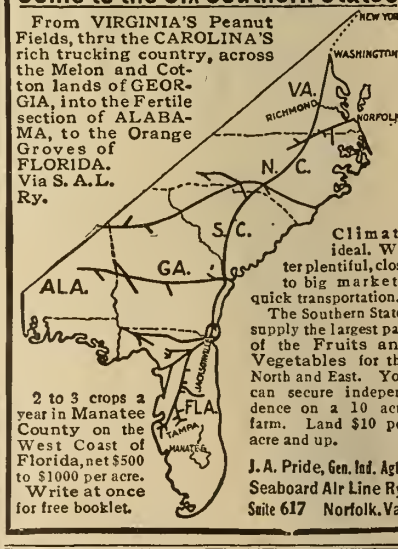
—written by a practical farm man, who went from county to county and talked with the farmers themselves and got pictures of their places. 115 pictures and 100 pages of plain farm facts, describing every kind of farm opportunity Southwest. Nothing will convince you like these statements from your own people. Write today.

E. W. LaBEAUME,
General Passenger Agent
1421 Pierce Bldg., St. Louis

COTTON BELT ROUTE

Come to the Six Southern States

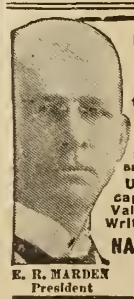
From VIRGINIA'S Peanut Fields, thru the CAROLINA'S rich trucking country, across the Melon and Cotton lands of GEORGIA, into the Fertile section of ALABAMA, to the Orange Groves of FLORIDA. Via S. A. L. Ry.



Climate ideal. Water plentiful, close to big markets, quick transportation. The Southern States supply the largest part of the Fruits and Vegetables for the North and East. You can secure independence on a 10 acre farm. Land $10 per acre and up.

2 to 3 crops a year in Manatee County on the West Coast of Florida, net $500 to $1000 per acre. Write at once for free booklet.

J. A. Pride, Gen. Ind. Agt., Seaboard Air Line Ry. Suite 617 Norfolk, Va.



I WILL MAKE YOU PROSPEROUS

If you are honest and ambitious write me today. No matter where you live or what your occupation, I will teach you the Real Estate business by mail; appoint you Special Representative of my Company in your town; start you in a profitable business of your own, and help you make big money at once.

Unusual opportunity for men without capital to become independent for life. Valuable Book and full particulars FREE. Write today.

NATIONAL CO-OPERATIVE REALTY CO.
M144 Marden Building
Washington, D. C.

E. R. MARDEN
President

VIRGINIA·APPLE·ORCHARDS
PAY BIG PROFITS

N&W Ry

$350.00 on long time and easy payments buys a ten-acre Apple Orchard tract in "The Beautiful Shenandoah Valley of Virginia." Other farm and fruit lands $15.00 per acre and up. Write now for last issue "The Southern Homeseeker," other interesting literature and low excursion rates. Address, F. H. LaBaume, Ag'l Agt., Norfolk & Western Ry., Box 3031, Roanoke, Va.

DU PONT

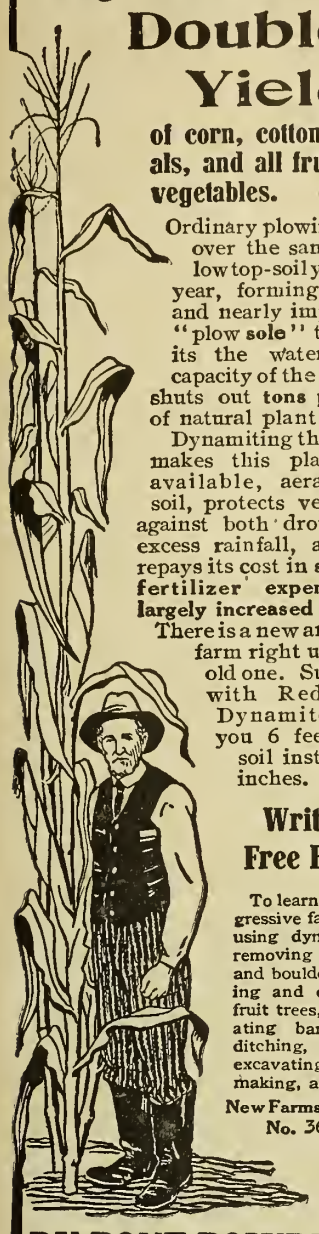
Red Cross Dynamite Doubles Yields

of corn, cotton, cereals, and all fruits and vegetables.

Ordinary plowing turns over the same shallow top-soil year after year, forming a hard and nearly impervious "plow sole" that limits the waterholding capacity of the land and shuts out **tons per acre** of natural plant food.

Dynamiting the subsoil makes this plant food available, aerates the soil, protects vegetation against both drouth and excess rainfall, and soon repays its cost in **saving of fertilizer expense** and **largely increased yields.**

There is a new and better farm right under the old one. Subsoiling with Red Cross Dynamite gives you 6 feet of top soil instead of 6 inches.



Write for Free Booklet

To learn how progressive farmers are using dynamite for removing stumps and boulders, planting and and cultivating fruit trees, regenerating barren soil, ditching, draining, excavating and road-making, ask for **New Farms For Old," No. 36**

DU PONT POWDER CO.

PIONEER POWDER MAKERS OF AMERICA

WILMINGTON, DEL.

Apply Western Methods to Eastern Orchards

Subscribe today for the ONLY magazine devoted EXCLUSIVELY to Fruit Growing and Irrigation in the West.

Learn the Secret of Success and how Western Fruit Growers realize as much per box as Eastern Growers get per barrel on their Apples.

Western Specialists write each month exclusively for us. If YOU contemplate coming West, you should certainly subscribe for the only periodical that sets forth the advantages and inducements of EACH important fruit district without favoritism.

Printed on heavy book paper and profusely illustrated.

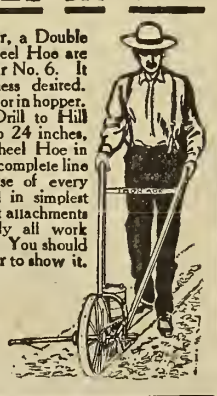
Send 25c Today, Coin or Stamps, for Three Months' Trial

The Intermountain Fruit Journal

Subscription Dept., Denver, Colo.

FOUR TOOLS IN ONE

A Drill Seeder, a Hill Seeder, a Double Wheel Hoe and a Single Wheel Hoe are all combined in Iron Age, our No. 6. It drills accurately any thickness desired. Shut-off on handle, brush agitator in hopper. Changeable instantly from Drill to Hill Seeder or reverse. Drops 4 to 24 inches, as desired. Changed to Wheel Hoe in three minutes. Is but one of complete line that fits the needs and purse of every gardener. Can be purchased in simplest form and added to as different attachments are needed. It does perfectly all work after breaking up of garden. You should see this tool. Ask your dealer to show it. Write us for special booklets.



Complete line of farm, garden and orchard tools.

BATEMAN M'F'G CO.

Box 5062 GRENLOCH, N. J.

AGENTS Make big money selling "GARDENER'S FRIEND HANDY CULTIVATOR." One man made $18.50 in one day. Write, today, for agents' special liberal terms. ULRICH CO., DEPT. F., ROCK FALLS, ILLINOIS

In your correspondence with advertisers please mention **The Fruit-Grower**

winter apples that was only two or three per cent wormy.

Rust on raspberry canes is sometimes very troublesome. Bordeaux mixture is most helpful, but does not always give satisfaction.

Live-Wood Bolts

Question: Please comment on the inclosed clipping about "live-wood bolts." Is this something new, or has it been tried and found wanting?—E. P. F., Iowa.

Answer: The idea, which is set forth in this article is not a new one. The use of natural bolts in trees is as old as time. Nature herself was the first teacher along this line, and it is not unusual to find among forest trees many in which limbs have crossed and grown together, forming natural braces of just the same nature as this article describes. Fruit growers from time too far back to remember, have made use of this same idea in supporting trees that are badly forked and liable to split. Unfortunately not many people know of this idea and a great many who do never practice it.

Braces such as this can be made in either of two ways. First, by twisting together a couple of young sprouts that come out on opposite limbs at convenient places to form a brace. These sprouts can be twisted together at any time that is convenient. The twisting needs to be done rather snugly but not so tight as to break the branches. It is usually better to tie them together, and then in the course of time, they will grow together forming just such a brace as is shown in the illustration on one of the pages you sent.

The second method is by grafting a long scion between the branches of the fork. The scion can be grafted at each end, or in case a good, vigorous sprout appears on one limb and no convenient sprout on the other, so that two might be twisted together, this one sprout can be used as a scion and left attached in the natural way at its base, but with its opposite end grafted on the other branch of the fork. Braces such as these are far better than the brace made by twisting a wire around the limbs or even by inserting bolts and chains as is frequently done.

Question: In some places public markets are maintained where the consumer may deal directly with the producer. I want to ask you whether you know any such places and can give me their address. I live near Rochester, N. Y., where the only market is one where the sales are made to dealers, and with but little benefit to the producer and consumer. I am interested and should like to learn anything I can as to the experience at other places where the market is found for both consumer and producer—the public retail market.—J. S., New York.

Answer: There are a great many markets where the producer can deal direct with the consumer. We have one in St. Joseph, but perhaps the best one in this country is at New Orleans. The public market seems to be a sort of southern institution, but until now has benefited only the local producers, that is gardeners and fruit growers living near the market. Many of these markets are operated as municipal institutions. This is true of our St. Joseph market.

The fruit growers and gardeners bring their produce to town, the market usually opening about 5 o'clock during the summer. Their sales are made direct from the wagon. The regular attendants at the market have a certain place for their wagon to stand every morning and many of these gardeners and fruit growers have an established trade, their customers buying first from them if their wants can be supplied.

In St. Joseph this market is around our city hall building, an antiquated affair, with the market house on the first floor. Our market master charges these wagons 10 cents apiece, I think it is, per day and many of the gardeners pay for a month at a time so that their place is secured. I have seen as high as 200 wagons loaded with fruits and vegetables back up around this market house and on the streets leading thereto.

St. Louis has a great market and in addition to the feature which has here been described, inside the market house are stalls where one can buy meats of all kinds, fish, butter, eggs, etc. This produce is usually sold through a dealer, but the fresh fruits, vegetables, etc., are sold direct from producer to consumer. One of the most interesting sights of some of the southern cities is this public market during the busy hours. As a social institution it is a great thing for the housewife chats with the market woman and perhaps the American cook hobnobs with one from Italy and learns how to cook vegetables in the Italian style.

The weak point of this system as I see it, is that one who goes to market usually goes with a big basket and carries home the produce purchased. This means that only a small quantity will be bought at a time and I believe that it would be well if some plan could be devised for the delivery of the stuff bought at a public market. Not that the farmers would deliver fruits and vegetables, but it occurs to me that some one might establish a delivery system whereby for a nominal charge, the housewife could have her purchases of the day delivered to her door. This may be worked out in some market, but isn't in ours. In Collier's Weekly for Jan. 6th there is a very interesting story about the public markets in Baltimore.

The Shape for Apple Trees

Questions: In shaping apple trees, which method do you think best for the Willamette Valley of Oregon, the open-center or the central-stalk? When would you advise me to start cultivating a young orchard, and would you continue cultivating through the entire growing season? Do you think a fern cutter takes the place or answers the purpose as a spring tooth harrow? What do you think of putting manure in the bottom of a hole when an apple tree is to be planted? In spreading manure around young apple trees, does it matter if it is too close to the trunk of the tree?—E. R. V., Illinois.

Answer: The open center apple tree is looked upon with more favor than the tree with a central leader. The time is not far off when the idea of having trees with a full center will be abandoned altogether and nothing used but open center trees, or at least trees far more open than we now see. There is an immense advantage in the open center, not only from the standpoint of letting in the sunlight and air, but also in the way of facilitating the spraying work and improving the color of the fruit.

Cultivation in a young orchard should begin as soon as the trees are planted and be kept up regularly throughout the life of the orchard, alternating of course, with cover crops. Cultivation cannot begin too soon in a young orchard and as a matter of fact the young trees need cultivation very much more than the old trees do.

On account of the annoyance which you may experience in the Willamette Valley from ferns, I would feel that some implement which would keep the ferns cut off would serve a better purpose in cultivating your orchard than would a spring tooth harrow. A spring tooth harrow is an ideal implement for a rocky soil, but where the soil is clean and free from stones, there are very many implements that are better.

The Kimball cultivator, made at The Dalles, Oregon, is an implement that is very satisfactory for cultivating land free from stones, as it makes a splendid mulch and keeps the weeds cut off. A Cutaway harrow is also a very fine orchard tool, but on account of its tendency to ridge the land, it needs to be used in connection with a drag harrow of some sort. Either the Kimball or the Acme make fine followers for a Cutaway or disk.

We would not advise putting manure in the bottom of a hole in which an apple tree is to be planted. This would be a serious mistake, as it would cause the soil to dry out immediately under the tree and prevent the tree from getting a good start. Manure in contact with the roots of plants also causes injury to the plants through the fermentation of the manure; there would be danger of burning the roots of your young trees. A better method is to spread the manure lightly over the surface of the soil, not around the tree, but away from the trunk. On young trees it should not be nearer than two feet and on old trees there is little need of getting it under the limbs of the trees, as the roots extend much farther out.

We believe you would find a great deal of useful information along this line in the Fruit-Growers Guide-Book. This book has been prepared especially for those who are beginning in orchard cultivation and it covers quite a number of just such points as these you ask.

Mulberry Cuttings

Question: How may mulberry trees be propagated by cuttings? First, what wood makes good cuttings; what kind of soil is best to root them in, and what season in California is best for that work?—P. G., California.

Answer: Mulberry cuttings are made in the same manner as any other hard wood cuttings. Use the mature wood of last season's growth, making each cutting six or eight inches long. Put them in a callus-pit until planting time in the spring, then plant them so that only one bud appears above the soil. Soft wood cuttings may be made in the summer, rooting them in the same manner as any other soft wood cutting, that is in either a mild hotbed or in clean sand. Hard wood cuttings may be collected any time after the leaves have fallen, and preferably before the wood freezes. It is better not to plant them out in the fall until the danger of freezing weather has passed in the spring. Any good field soil is all right for the hard wood cuttings, provided the soil is well drained.

Rusty Nails and Other Questions

Questions: Is it safe to mix arsenate of lead with a commercial brand of lime-sulphur for a summer spray? What proportion of each?

2. I noticed a recommendation in a recent issue to whitewash the trunks of peach trees with a thin preparation of cement to keep borers off during the growing season. Is this practical? Will it injure the trees?

3. I read where one man says to drive three rusty nails in the trunk of an apple tree near the ground would keep the borers out. Do you know about this? How could it help any?

4. Is the preparation called "tanglefoot" effective to put on the trunk of

"Count the Indians on the Road"

The **Indian** Motocycle

This up-to-date vehicle will take you at any speed over any road, any distance and back again.

THE INDIAN 1912 MODELS

4 H. P., Single Cylinder, $200 **7 H. P., Twin Cylinder, $250**

The handiness, the peculiar readiness for use and the reliability of the Indian make it a wise and profitable investment for the farmer. Maintained at small expense. Official record shows that the Indian has run nearly 32 miles on 1 pint of gasoline. Can be run at any speed from 3 to 50 miles an hour. Invaluable in emergencies. Fits your needs to better advantage than any other vehicle.

The Free Engine Clutch enables you to slow down and get off without stopping the engine and to start again without pedaling or running alongside. You simply move a lever.

14 Important improvements in 1912 models. New Indian Armored type magneto is entirely enclosed. Protected from oil, dust and moisture. Perfect ignition assured. This feature and the Free Engine Clutch are supplied free of extra charge with all 1912 Indians.

1,200 agents throughout the country sell the Indian. So that no matter where you may ride, you're always in Indian territory.

Learn more about this wonderfully useful machine. Write today for new 1912 catalogue. Mailed free to any address.

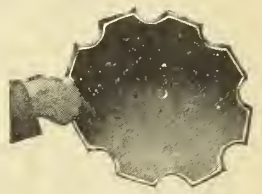
THE HENDEE MFG. CO.

(Largest Manufacturers of Motorcycles in the World.) **823 State Street, Springfield, Mass.**

CHICAGO DENVER SAN FRANCISCO LONDON

FORGED DISK BLADES

There is as much difference in the quality of the material used in the blades of disk harrows as there is in pocket knives. Some knives are made to sell at ten cents and others at a dollar. Many disk blades belong to the ten cent pocket knife class, but are worked off on buyers with the rest of the machine at the same price for which the best are sold. Consequently, the farmer cannot be guided by price.



The edge is forged, not rolled and ground.

The Cutaway Harrow Co. has built its remarkable reputation largely by the quality of the disks on its tools. It has had a real sincere ambition to give to the farmer the best disk blade he could buy. Their motive for so doing has been as much one of pride as of profit. The latter came because the policy of high quality paid.

Their one object has been constantly in view—the best blade possible. To accomplish that, forging the edges became a part of the process. Now all Cutaway Harrow Co.'s disk blades are forged. If you don't fully realize the advantage of forging, ask your blacksmith why a forged edge is better than any other. He will tell you why no other method is so good. This forged edge feature shows how the Cutaway Harrow Co. is doing the things necessary to produce the best tools. It is an indication of merit throughout every tool they make. Every buyer should demand Cutaway forged disks. They cost no more, and are many times better. If you will write them at 968 Main St., Higganum. Conn., they will send you complete information on the construction of Cutaway machines, It would pay every farmer to give them his ear. Write a post card today.

"LIGHTNING"

SPRAYERS

At Your Dealer's or Write us.

This Pump quickly attached to any barrel by bolting to staves at upper end of barrel. All working parts brass. Requires no priming. Brass ball valves and valve seats, paddle agitator. 5-ft, 5-ply hose. Brass Vermorel Nozzle, throws any size spray or stream 50 feet, and impossible to clog. Adapted for spraying fruit trees, whitewashing stables and various other styles to select from. For spraying garden vegetables, trees, shrubbery, washing wagons, windows, etc. Write for free catalog and agents' proposition on full line.

No. 25 fig. 300-bbl. Spray Pump.

D. B. Smith & Co., 54 Genesee St., Utica, N. Y.

Make $25 to $50 Weekly

selling the Automatic Combination Tool in your home county. A Fence Builder's Tool, Post Puller, Lifting Jack, Vice, Wrench, etc. Used by Farmers, Teamsters, in Factories, Mills, Mines, etc. Weight 24 lbs. Capacity 3 tons. No experience necessary. Free instruction. Write for special offer to live agents. Send no money. Name county where you live.

AUTOMATIC JACK COMPANY

Box 99 Bloomfield, Ind.

AGENTS! BIG PROFITS

The only stropper that strops any razor diagonally Guaranteed for Life.

Brand't patented Automatic Razor Stropper Automatically puts a perfect edge on any razor, old style or safety. Big seller. Every man wants one. Write quick for terms, prices and territory.

G. R. Brandt Cutlery Co., 84 W. Broadway, New York

Catalpa Seed For Sale — Genuine Catalpa Speciosa seed from Wabash Valley.

W. E. ENSOR BOONVILLE, INDIANA

trees to keep off codling moth, aphis, etc.? Will it injure the tree If applied directly to the bark?

5. Do you know if lime-sulphur has been tested for aphis on the root of trees? If so, with what success?—E. M. D., Arkansas.

Answer: It is entirely safe to mix arsenate of lead with lime-sulphur, considering the solution as so much water and the arsenate of lead used accordingly. There is really a distinct advantage in adding arsenate of lead to lime-sulphur, as it increases the fungicidal properties of the lime-sulphur solution. If you have kept watch of the articles on spray materials which have appeared in The Fruit-Grower from time to time during the past few years, you are no doubt familiar with this relation.

2. There is some advantage in making an application of whitewash or even a cement wash to fruit trees to protect it from the borer. However the wash amounts to but very little after all because the most trouble from the borer comes from its working underground. See the January Fruit-Grower for more on this point.

3. Protecting trees from borers and other troubles by driving nails into the trees is merely an old superstition. It doesn't work.

4. Tanglefoot is sometimes effective in keeping woolly aphis from climbing up on the branches of the trees from their winter quarters on the roots. It is not good for keeping off the codling moth. When a wide band of tanglefoot is applied to the smooth bark of a young fruit tree, there is some danger of its causing injury. A narrow band, say a strip half an inch wide, is not objectionable. A better method is to apply the tanglefoot to a strip of burlap, then tie the burlap around the tree.

5. Lime-sulphur has been tried for the purpose of keeping woolly aphis off the roots of apple trees. It isn't effective for that purpose. Kerosene emulsion is the best remedy. The January Fruit-Grower has more on this subject.

Question: Would it be advisable for a man with 1,000 trees to buy a horse-power spraying outfit? I do not feel able to buy a gasolene power sprayer, for they are so high priced. What caused my July peaches to mould and rot, also my Lombard plums, just as they were heginning to ripen. Would spraying have stopped the rot, and when should it have been done and what material should I have used?—H. H., Indiana.

Answer: It would pay you very well to buy a spraying outfit to spray your fruit trees with. We do not know what sort of a machine you have in mind when you speak of a horse-power sprayer, unless it is one which gets its power from the drive wheels. That is, a machine known as a "traction" sprayer. There is a great deal to be said both for and against such an implement. When properly used they are very effective, but on account of the irregularity of the pressure, such machines are unsatisfactory.

A good gasoline engine driven sprayer is by far the best and if you do not feel that you can afford such a machine ready made, you can build one for a great deal less than the price of the ready made machines, although it will hardly be as satisfactory.

The mould which appeared on your plums and peaches this past summer, we presume was caused by brown rot. This is the most serious fungus pest of peaches and plums. It can be controlled with almost absolute surety, by spraying the trees with the self-boiled lime-sulphur and arsenate of lead solution. You will find more about this disease in the January Fruit-Grower.

Question: I am sending you a specimen of the bark from one of my young apple trees for inspection. Please tell me a remedy for this condition and if I can prepare it myself.—D. D. D., Maine.

Answer: The specimen which you send is what is known as the oyster-shell barklouse. This is an insect which is capable of causing quite serious damage to fruit trees, although not as injurious as the San Jose scale. It can be controlled with great ease by spraying with any of the scale destroying materials such as lime-sulphur. The January Fruit-Grower tells how this may be made.

Sheep Nibble Trees

Question: Please answer through The Fruit-Grower if there is anything that I can wash apple trees with to keep sheep from eating them. The trees are fifteen years old.—D. H. W., Missouri.

Answer: It will be a hard matter to put anything on your trees that will keep sheep from nibbling them. Sheep and goats are about the worst things you could possibly have in your orchard in the way of live animals. They are worse than rabbits and the average orchardist considers rabbits just about the worst possible enemy. Rabbits can be kept away, hut sheep and goats cannot. The only suggestion we could make towards protecting your trees is that you get the sheep out of your orchard and keep them out.

Should Young Trees Be Sprayed?

Quesiton: I have about six acres of Elberta peaches which have been out three years. Will they need to be sprayed this season and if so how early in the winter should I begin? How many times should the spray be applied and how late in the spring? I have about thirty acres of rich land only about 260 feet above sea level, but plenty of water near enough the surface. Would Red June apples thrive on such land? Could the fruit here be saved with smudge pots?—J. D. H., Ark.

Answer: It will doubtless be to the advantage of your trees to be sprayed. If your trees are absolutely free from all insect pests and fungus diseases, there is really no reason why they should be sprayed, but if the San Jose scale is present on the trees, then it is necessary to make an application of some material that will destroy the scale; lime-sulphur or soluble oil are the best. If there is prospects of a fruit crop, and on three-year-old trees in your locality there ought to be a nice sprinkling of fruit, then it is highly important to make an application of some spray material that will control brown rot and peach scab. This can be done by making an application of self-boiled lime-sulphur and arsenate of lead.

The first spraying with this material should be made when the shucks are just dropping from the little peaches; the second application when the peaches are about half grown, and the third application about a month before the peaches are ready for harvest. At this last spraying arsenate of lead should not be used, using straight self-boiled lime-sulphur. The reason the arsenate of lead should be left out is that some of this spray will stick to the fruit until it is ripe, and the presence of arsenate of lead might cause a little annoyance.

For establishing an orchard in the valley land you speak of, it is impossible to say whether apples would do well on it or not. From the description you give, it hardly seems to me that it would pay to plant apples, even the early apples you name, as valley land, and especially a heavy rich soil, is not suitable for apples. Prof. Ernest Walker of the Agricultural Station at Fayetteville, Ark., will be very much better able to answer these questions of yours than we are, as he is familiar with your section, and can give you authoritative advice.

About Planting Apples

Questions: When planting a tree and filling the hole partly with surface dirt, do you favor adding stable refuse for the balance? What are your methods of planting a tree? Do you think the Delicious would do well here? Kindly advise what kind of apple, pear and peach trees to plant. I have purchased a small place and intend to give it the best of care, but would like your advice on the above. My soil is clay with a sandy surface. What would you do with an asparagus bed that was planted early in June with 2-year roots, and the trenches never filled up? The fern grew about 8 to 12 inches.—R. P., New Jersey.

Answer: We do not advise filling a hole around a newly set tree, part full of soil and then the remainder with manure. The best method is to dig a hole considerably larger than the roots of the tree demands, loosen up the soil in the bottom of the hole and set the tree in its place. Then throw in a couple of shovelfuls of fine soil, work it around the roots, using the fingers if necessary to get it down into the small cracks to avoid air holes. Tramp it down firmly with the feet or with a tamper, then add a few more shovelfuls of soil and pack it down tight. Finish filling the hole entirely full and tramping it down solid. A tree planted in this manner will not fail to grow, and if fertilizers are necessary they may be applied to the top of the ground rather than immediately around the roots.

For a list of varieties suitable for planting on your place, I would suggest that you correspond with the horticulturist of your experiment station, Prof. Byron B. Halsted, New Brunswick, N. J. He is familiar with your locality and will be much more able to suggest desirable varieties than we are.

If the asparagus made a good even stand over the bed, the best thing to do would be to partly fill the trenches and then put a heavy application of stable manure over the surface, using well rotted manure, piling it on thick. Asparagus is a rank feeder and the more fertility in the soil the better will be the growth the plants make. If the bed did not become well established, or if the stand was poor, it would be better in our estimation to plow it up and start over.

Grape Scale

Question: I wish to avail myself of your services in determining what kind of a scale is on the inclosed pieces of grape vine. Have been spraying all my stuff for three years with good results. Never had anything of this kind until I discovered it this winter while pruning, when I found four vines almost ruined. They had not produced much new wood and half of that had not matured and was dead. The scale is on all parts, but especially on the old wood under the outside old bark. I recollect the grapes from these vines lacked quality, especially flavor, last season. A few blackberry bushes are infested and a young cherry nearby is almost dead from what I think is the same cause. All of these things have been sprayed several times each year for three years with bordeaux and bordeaux-arsenate of lead. What is this pest and what shall I do?—O. G. T., Illinois.

Answer by Prof. Haseman: The grape cane is infested with the so-called grape scale, aspidotus uvae. This scale is confined almost entirely to the grape, both cultivated and wild. It was first described by Professor Comstock in his report of 1880. It is, as its name signifies, very closely related to the common San Jose scale, and it has often been mistaken for that species. Where the San Jose scale is in orchards close to the vineyards infested with this species, the owner often supposes that it is the San Jose scale that has migrated from the orchard to the vineyard. To be sure, the San Jose scale is occasionally found on grapes, but in most cases, wherever scale of this sort is present, it is this species. The grape scale works largely near the ground, being most abundant on the older wood. It is seldom found on one-year wood. In most cases it is not abundant enough to cause injury, but where it does become necessary to take measures to check it, the best way is to spray the canes thoroughly during the dormant season, preferably after the pruning has been done. One must do the work very thoroughly, as these insects are found underneath the old bark where they are well protected.

Corn in Young Orchard

Question: Kindly advise in the Question and Answer Department of The Fruit-Grower what effect planting corn in a pear orchard would have on the trees. I have about five acres of dwarf pears. They do not bear well, although they are now six years old.—L. R. S., Missouri.

Answer: The usual result of such a crop as corn, potatoes, tomatoes or any other crop of a similar nature in a bearing orchard is to retard the growth of the trees and perhaps result even disastrously to small trees where corn is used, through shading them.

Corn is a most excellent crop to plant in a new orchard when planted between the tree rows and a space fully six feet wide left for the trees. The real value of the corn comes through the cultivation which is made necessary. The corn in itself does no good for the land, but the cultivation does.

It is generally considered advisable to discontinue corn cultivation in an orchard after the second or third year. Thereafter it is better to use some soil improving crop such as clover or cowpeas. If your dwarf pear trees are only six years old you could not expect them to produce much fruit up to this time, and if the orchard had been corned up to now it should be discontinued and other crops used instead.

BOOKS FOR THE

Farm Library

No home is complete without its library of at least a few good books. The progressive farmer realizes that it is a waste of time to learn through his own experiments, facts which have already been learned and recorded by others in the many good books on agriculture. The following list contains the best of the latest books covering many of the important phases of farming:

Gardening

The Principles of Vegetable Gardening, by L. H. Bailey.....$1.50
Treats of equipment and capital, making hot-beds, cold-frames, soil and its treatment; seeds; laying out and management of the garden. Discusses treatment of each kind of vegetable.

Vegetable Gardening, by Samuel B. Green $1.00
A manual on the growing of vegetables for home and the market. Well illustrated.

The Forcing Book, L. H. Bailey..$1.25
The most complete treatise on the forcing of crops under glass during the winter. Discusses greenhouses, hot-beds, temperature, light requirements. A book for the winter gardener.

Bean Culture, by Glen C. Sevey..$0.50
A complete treatise on growing beans on a commercial scale Treats of soils; seed selection; insects and diseases; harvesting methods; marketing, garden beans.

Tomato Culture, Will W. Tracy..$0.50
Complete treatise on tomato growing. History of the tomato; soils for maximum crop; hot-beds and cold-frames; starting the plants; cultivating; staking; production for canning, etc.

Celery Culture, W. R. Beattie...$0.50
A practical treatise of the principles involved in the production of celery for home use and for market, including the sclection of soil, production of plants, cultivation, control of insects, marketing, etc.

Home Vegetable Gardening, by F. F. Rockwell $1.00
A book which tells what the average man wants to know in order to raise a successful crop of vegetables in his garden. A book that will answer every question and prove a reference of unfailing value.

Manual of Gardening, L. H. Bailey. $2
A complete manual on planning and planting the flower, fruit and vegetable garden, and decorating the home grounds.

The Landscape Garden Book, by Grace Tabor $2.00
This book shows just how to plan the home grounds; how to plant the trees so that they will give the most value in shade and beauty, how to group shrubs, etc. Beautifully illustrated.

Fruit Growing

Popular Fruit Growing, Samuel B. Green $1.00
A thoroughly practical book treating on the factors of successful fruit-growing, orchard protection, insects injurious to fruit, fungous diseases, and spraying. Illustrated.

Principles of Fruit-Growing, L. H. Bailey $1.50
A complete treatise on the practice of fruit-growing, comprising an inventory of fruits and a full discussion of the tillage, planting and fertilizing fruit lands and the protection of fruit plants from disease, frosts and other dangers.

The Nursery Book, L. H. Bailey..$1.50
A complete guide to the multiplication of plants. A standard work for nurserymen. Revised and enlarged.

American Fruit Culturist, by Thomas $2.50
A standard work on fruit culture, giving descriptions of all the leading varieties of cultivated fruit, together with principles of successful cultivation and marketing.

Bush Fruits, by F. W. Card.....$1.50
The purpose of this book is to furnish reliable descriptions of cultivated varieties and the necessary instructions on the cultivation of bush fruits.

Fruit Harvesting, Storing and Marketing, by F. A. Waugh.....$1.00
A practical guide to the picking, storing, shipping and marketing of fruit evaporating, canning, cold storage, fruit package laws, etc. Illus.

Systematic Pomology, by F. A. Waugh $1.00
A volume presenting clearly and in detail the whole methods by which fruits are studied, giving a comprehensive treatment of the subject.

The Fruit-Growers Guide-Book, by E. H. Favor $1.00
A guide to the cultivation of orchard fruits, giving method of selecting location, soils, planting, varieties to use, packing, marketing, combatting diseases, etc.

Poultry

Artificial Incubating and Brooding	.50
Asiatics, Brahmas, Cochins and Langshans	.50
The Bantam Fowl	.50
Ducks and Geese	.50
Eggs and Egg Farms	.50
The Leghorns, All Varieties	1.00
The Orpingtons, Black, Buff and White	.75
The Plymouth Rocks	1.00
Poultry Houses and Fixtures	.50
Rhode Island Reds	.75
Turkeys, Their Care and Management	.75
The Wyandottes	1.00
*Poultry Secrets	1.00
*The Million Egg Farm	1.00
*$100,000 A Year From Poultry	1.00
*Turkey Secrets	1.00
*Corning Egg-Book	1.00
*Duck Dollars	1.00

*Includes 4 years subscription to Farm Journal.

Bees

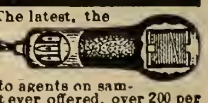
A B C & X Y Z of Bee Culture. Most widely known book on bee keeping. A standard for beginners and experienced bee keepers	$1.50
Advanced Bee Culture	1.00
Cook's Manual of the Apiary	1.30
Doolittle's Queen Rearing	1.05
How to Keep Bees, Anna B. Comstock	1.20
The Bee People, Margaret W. Morley	1.60
The Honey Makers, Margaret W. Morley	1.60
Life of The Bee, Materlinck	1.50
The Townsend Bee Book. For beginners and experienced bee keepers	.50
First Lessons in Bee-Keeping, Newman-Dadant. An invaluable little volume for the beginner	.50

Miscellaneous

Domesticated Animals and Plants, Davenport	$1.25
Biggle Berry Book	.50
Produce Markets and Marketing, Seibels	2.50
A B C of Potato Culture	.85
Home Water Works, Lynde	.85
Audel's Answers on Automobiles.	1.50
Self Propelled Vehicles, Homan	2.00
Audel's Gas Engine Manual	2.00
The Farm and Garden Rule Book, Bailey	2.00
Business Organization, Sparling	1.25
Text Book of Entomology, Packard	4.50

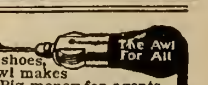
Address Your Order to Book Department

The Fruit-Grower, St. Joseph, Mo.

BIG MONEY FOR YOU
Selling the Speedy Stitcher. The latest, the best ever invented. Sews like a machine. Mends anything. Retail price $1.00

Guaranteed. Special price to agents on sample. Wholesale prices lowest ever offered. over 200 per cent profit. Send for circular. Don't delay.
Automatic Awl Co., 83 Gardner Terrace, Worcester, Mass.

The Best For Sewing Leather

PRICE $1.25 Prepaid. Agents Wanted Send for Catalogue
Stewart Automatic Awl WILL MEND ANYTHING
STEWART-SKINNER CO. 83 HERMON ST. WORCESTER, MASS.

Makes repairs neat

and quick. Mends harness, shoes, canvas. Myers' Sewing Awl makes Lock Stitch. $1 prepaid. Big money for agents.
This Awl For All
C. A. MYERS CO., 6344 Lexington Ave., Chicago, Ill.

PRUNING Book by Professor Bailey. Tells everything about pruning. You need it. Price $1.50. The Fruit-Grower, St. Joseph, Mo.

A PROFITABLE GARDEN

When I began gardening several years ago, I was working nights for a railroad company, and had some spare time during the daylight hours. These I spent in growing vegetables on a small scale, as it not only gave me outdoor exercise, but I liked the work. We lived, at that time, in the second story of the railroad depot, and nearby the company had a vacant tract and gave me permission to use it for a garden. The only payment that was required being that I plant some shade trees on the tract.

When I began operations on this little plot of ground, my first efforts were to get it well manured and then worked into good condition for planting. This necessitated its being plowed deep and then thoroughly harrowed several times, and cost me $4. It was a wedge-shaped area, being 165 feet long, eighty feet wide at one end and sixty feet at the other.

In March of that first year, I made a little hotbed and planted some tomato seeds. These quickly developed into strong plants and were nursed along until the first of May, when they were set in the garden. During the first few nights I kept them covered with empty gallon cans, to protect them from any possible injury by frost. On May 3rd I planted sweet corn and on the 15th of May transplanted the first of the cabbage. These plants had been grown outside of the hotbed, the seeds having been sown in the open ground and at the same time I had planted seeds of radish, lettuce and onion. I mixed the radish and onion seeds and sowed them in drills ten inches apart. I did this as a matter of safety, as I had learned the year before that it was sometimes hard to get onion seed started, as they would be crowded out by weeds and grass which sprouted quickly.

This mixing of the radish and onion seeds was very profitable, as it marked the rows, and since the radishes grew very quickly and were pulled from day to day, it enabled the onions to be thinned and have more room. In this way I was enabled to grow two crops at the same time.

Radishes likewise served as markers for the cabbage rows, as the radish seeds were, in this case, planted in rows 24 inches apart, and the cabbage plants set eighteen inches apart in these rows. A row of radishes was also placed half way between these rows of cabbage. Beans were planted between the corn in the same manner, enabling me to again grow two crops on the same land.

As I had no seed drill, the rows were marked off with a hoe and the seeds dropped by hand, and all of the cultivating was done with the hoe. This was needed after every sprinkling, as this garden was in a part of South Dakota where the rainfall was very light, and artificial watering was necessary. To facilitate this sprinkling of the garden, I laid a pipe from the depot hydrant through the center of the garden. The watering was done by the aid of fifty feet of hose and a sprinkler, making the applications in the morning and evening hours.

On May 19th I made the first sales from this little garden. This consisted of some tomato plants, twenty bunches of radishes, some lettuce and onions, and from this date some truck was sold every day until September 24th, when we moved away.

I worked in the garden from one to two hours daily, doing the hoeing and weed pulling, but after the first of July I had an easy time. I kept account of every penny I took in from this little garden, and also what it was for, as I wanted to know what would sell the best, and where the most of the profit was to be had. Herewith is a statement of the returns from this little garden:

Tomato plants	$10.20
Cabbage	3.85
Radishes	18.50
Lettuce	13.70
Beets	29.05
Corn	10.25
Onions	15.75
Beans	18.35
Potatoes	.75
Carrots	10.75
Tomatoes	24.10
Cabbage	9.10
Cucumbers	21.25
Parsnips	3.55
Total	$189.15

Beets and tomatoes brought in the most money, and the beets paid the greater profit, as I had calls for beet tops nearly every day during the spring and early summer, and since the beets had to be thinned, I could turn the thinnings into cash in this way.

We had no deliveries to make, as people would call for their supply of vegetables. A supply of paper bags was kept on hand and a small scale was kept in a box in the garden. As the garden was in the center of town, there was always someone passing, and if either my wife or myself were in the garden these passers-by would generally come in and get some vegetables, as they would then get truck which was strictly fresh, whereas that sold on the open market had been shipped in and was stale. We received store prices for all of the vegetables that we sold, which accounts for the large returns from this small area. JOHN DOLLENBACHER.

Washington.

HOME OF JOHN DOLLENBACHER, WASHINGTON.

A SURE WAY TO MAKE MONEY.

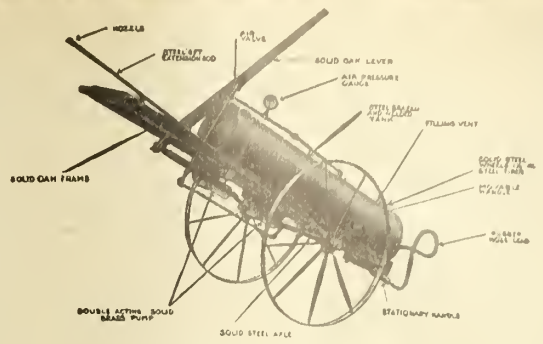
Free lands in the United States are gone, but you can get the best of land in Mexico—**free**, all required is to have five acres of bananas planted within five years. The planting can be done by authorized Improvement Companies on the installment plan. The first two years you pay $5 a month. The Company will also care for and market your bananas on shares, and your share should be about $200 per acre. Producing banana orchards sell for one thousand dollars per acre. Bananas bear in 15 months. You need not go to Mexico yourself. Persons living in the United States and Canada can get particulars regarding free land in Mexico by addressing The Jantha Plantation Company, Block 925, Pittsburgh, Pa. As people know nothing of these free lands, I thought it my duty to all their attention to them. Surely no one would pay three hundred dollars an acre for fruit lands in the United States and Canada when they can get better land in Mexico **free**, and land handy to railroads and market, with climate and health conditions unsurpassed.—Adv.

Inspection Bill Agreed Upon.

An agreement has finally been reached between the United States Department of Agriculture and the American Association of Nurserymen, thereby terminating a five-year wrangle over the inspection of imported and inter-state shipments of nursery stock. According to Mr. W. P. Stark, a bill has been prepared by Prof. Hunter of the University of Kansas which has been accepted by the Department of Agriculture, and which places the authority for inspection in the hands of a committee of five, instead of leaving it to one man, as heretofore. One especially favorable feature of this agreement has been that of harmonizing the entomologists of the Department of Agriculture and inspectors and nurserymen of the United States.

Spray with **SAN-U-ZAY** Scale OIL

Clean out the Scale this spring with ONE early application. Thousands of growers have discarded Lime-Sulphur for this purpose during the past five years because **SAN-U-ZAY** does the work infinitely better and at greatly reduced cost. Guaranteed the purest oil spray on the market. Sold direct to you at wholesale price. Send today for booklet C and special offer. **THE GARDINER-JOHNS COMPANY**
1132 Granite Building. Rochester, New York



Have you a

Two or Four-Acre Orchard?

Have you tried the bucket-pump and found you did not have enough hands?

Has your small sprayer burst in the midst of spraying operations?

Have you tried the barrel-pump and found it too hard to operate?

If you have experienced these troubles, you will find them eliminated in the Sherwin-Williams "One-Man" Spray-Pump. It is the first pump on the market that can be operated successfully by one man, on tracts ranging from a small garden-patch to full-grown orchards of two to five acres. A few minutes' easy pumping compresses sufficient air to spray, without again touching the lever, for fifteen or twenty minutes at a pressure which will throw the spray to the top of the tallest orchard-trees. This machine is simply constructed and so arranged that a breakdown is practically impossible. It is exceptionally light, well-balanced, and runs easily. With a "One-Man" Pump you can save half the cost of labor and produce better crops due to more thorough spraying.

If your dealer cannot furnish the pump, do not delay, but send $30, the cost of the outfit, together with your dealer's name, and we will ship direct, freight prepaid. Write for descriptive literature.

THE SHERWIN-WILLIAMS CO.
INSECTICIDE AND FUNGICIDE MAKERS
667 CANAL ROAD 1317 CLEVELAND, OHIO

TO DESTROY APHIS, THRIPS, ETC.
Without Injury to Foilage
SPRAY WITH

"Black Leaf 40"

SULPHATE OF NICOTINE

"Black Leaf 40" is highly recommended by Experiment Stations and Spraying Experts throughout the entire United States.

Owing to the large dilution, neither foliage nor fruit is stained.

Like our **"Black Leaf" Extract, "Black Leaf 40"** may be applied when trees are in full bloom and foliage, without damage to either.

Also, **"Black Leaf 40"** is perfectly soluble in water—no clogging of nozzles.

PRICE:

10½-lb. can,	$12.50.	Makes 1000 gallons, "5-100 of 1 per cent Nicotine."
2½-lb. can,	3.25.	Makes 240 gallons, "5-100 of 1 per cent Nicotine."
½-lb. can,	.85.	Makes 47 gallons, "5-100 of 1 per cent Nicotine."

These prices prevail at ALL agencies in railroad towns throughout the United States. If you cannot thus obtain **"Black Leaf 40,"** send us postoffice money order and we will ship you by express, prepaid.

The Kentucky Tobacco Product Company
INCORPORATED
LOUISVILLE, KENTUCKY

ON CROSS-POLLINATION

How Cross-Pollination Aids in the Development and Production of a Fruit Crop

In his paper on cross-pollination read before the Virginia State Horticultural Society, January 11, 1912, Henry M. Dunlap, of Illinois, said:

"Cross-pollination of plants for the purpose of securing a variety from the seed so influenced, has been practiced for many years. Darwin's researches along this line and also in the animal kingdom were published a half century ago. Many state and private experiment stations are at work breeding new varieties in both the plant and animal kingdom that shall combine the best characteristics of both parents.

"The cross-pollination of which I write is of a different nature, or rather has reference to entirely different results. It has nothing to do with perpetuation of the variety through its seed, but has to do with the fruit development and the production of a crop, so far as this discussion goes.

"In the early seventies of the last century Mr. D. B. Wier of Lacon, Illinois, called the attention of his fellow fruit growers to the fact that:

Plums of Several Varieties

blooming at the same period produced better crop when planted in the immediate vicinity of each other and called attention to the fact that when planted separately a fruit crop was harvested only when the conditions were extremely favorable. These statements were productive of considerable discussion and it was the conclusion that the best results with plums were obtained by mixed planting of varieties.

With Strawberries, Also,

the fact was early noted, that some varieties were self-fertile, others partly self-pollenizing, while other varieties were self-sterile, requiring the planting of a staminate variety with them if any result in the way of fruit was to be obtained. You are familiar with these facts and it is unnecessary to go further into detail regarding them. I believe it is generally conceded now in strawberry culture that the best crop results are obtained by mixed planting, that is by planting so as to alternate in separate rows strong pollenizers with those not so strong in this respect although considered self-fertile, and as also good in furnishing pollen for pistillate sorts.

"In a general way the apple is supposed to be self-fertile. It has been known among experts that certain varieties were not as strong in pollen as certain other varieties, but until recently it has not been thought necessary to take into consideration in the planting of apple orchards that apple trees would be more productive where cross-pollination is provided for.

"As many as twenty years ago, and perhaps longer ago than that, some planters alternately planted an upright grower with a spreading top, either alternating in the row or in separate rows, but this was for economy of room rather than for pollenizing purposes.

Commercial Orchards.

"Some eighteen or twenty years ago the planting of commercial apple orchards in Illinois and Missouri had a great boom. For several years prior to that time, small farm orchards in those sections consisting of a number of varieties as such orchards have borne enormous crops that paid the owners fabulous sums of money. The Ben Davis, then a new variety for that section, proved to be so well adapted to that section that it outbore and outshone all the others. The result was that hundreds of acres in Southern Illinois and Missouri were planted to apples and of these 75 per cent were Ben Davis.

"Not having cross-pollination of varieties in mind and in reality knowing nothing of such things the greater number of these orchards were planted in solid blocks the varieties in their order of importance ranking about as follows: Ben Davis, Jonathan, Rome Beauty, Winesap, Maiden Blush, Gano and Huntsman. A few other scattering sorts were planted but not in a general way. The selection of varieties was good, and could not be greatly improved upon for that section at the present day except to add Grimes Golden; but the proportion in which they were planted can be improved upon.

The Great Mistake

was in solid block plantings and the excessive amount of Ben Davis. In some instances such blocks of Ben Davis amounted to forty or even as high as sixty acres of that variety alone.

"In 1901 the Illinois Orchard Company, of which the writer is president and manager, was organized for the purpose of operating in apple growing, and that year some three hundred acres of land, mostly planted to orchards, were purchased in the counties of Clay and Richland in this southern Illinois section referred to. While preference was given to orchards containing a number of varieties, no significance was attached to the matter of cross-pollination as a factor in the production of crops and one orchard of eighty acres was purchased which contained a block of sixty acres all in Ben Davis.

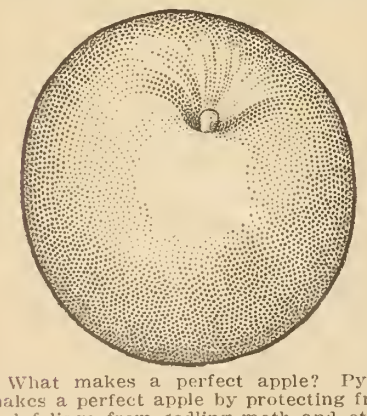
"During the past ten years those orchards of the company where there was a reasonable amount of mixed planting have produced a paying crop eight years out of the ten. While no exact record has been kept regarding the solid blocks of Ben Davis it is safe to say that they have not produced more than four paying crops out of the ten referred to above. The failures were due in some instances to spring frosts and in others to excessive rains during blooming time or to continued cold and rain combined. When the conditions were normal or favorable at the time of blooming there was no material difference in the amount of fruit buds set on the solid as against the mixed plats and the results were equally satisfactory in both.

"During the so-called off years or those where the weather conditions were bad, cold rain or frost, or all of them, the setting of fruit was noticeably greater on those rows along the lines of clearage between the several varieties in the orchard, shading off to nothing in the solid blocks when the conditions were very bad. In one forty-acre orchard planted to Jonathan and Ben Davis in the proportion of eight rows of Ben Davis to one row of Jonathan the conditions have been very marked indeed. During some of the off years the Jonathan row has been full of fruit while the Ben Davis row immediately next to the Jonathan row was reasonably full; the second row removed about half as much while the third and fourth rows were without any fruit. Other orchards produced like results.

Other things are essential besides cross-pollination, such as spraying, cultivation, and pruning, but without proper planting to secure cross-pollination of one variety by another I would not expect the best of success where the weather conditions are liable to enter into the proper fertilizing of the bloom and the setting of the buds.

"This statement is made, based upon a lifetime of observation and experience. My father was a fruit grower and in 1860-1863 set out orchards on his farm in Champaign County, Illinois, of over 100 acres in extent. These orchards consisted of many varieties, hardly any two adjoining rows being of the same variety, thus the matter of cross-pollination was given full sway. The orchard was set in this manner to test out the many varieties then before

The Perfect Apple



What makes a perfect apple? Pyrox makes a perfect apple by protecting fruit and foliage from codling moth and other leaf-eating insects besides acting as a fungicide. It makes the fruit hang on a week or ten days longer in the Fall which gives better color, waxiness and keeping quality, giving that "finish" which brings the top market price. If you like good fruit,—use Pyrox and have it. Wise growers are ordering early. Ask the Bowker Insecticide Co., of Boston, for book on spraying.

Two Interesting Booklets

You Ought to Have
They are Free

Practical Suggestions to the Fruit Grower, by Prof. J. C. Whitten, Horticultural Department, University of Missouri,

and

Corn and Alfalfa, by Dr. S. M. Jordan, Missouri State Board of Agriculture.

Issued by

Missouri Pacific=Iron Mountain

It has been truly said that, "Only the man who has succeeded is competent to tell others how to succeed." These booklets were written by Experts—men whose advice is backed up by practical experience. Write today—a postal will do—and both booklets will be sent you by return mail.

J. N. ANDERSON
Immigration Agent
ST. LOUIS
MO.

MISSOURI PACIFIC IRON MOUNTAIN

The Colorado Midland

Affords the Best Service to

The Fruit Lands and the Farming and Grazing Lands OF THE WESTERN SLOPE

There are thousands of acres of good lands still uncultivated in the fertile valleys of eastern Utah and western Colorado, and oceans of water in the streams and on the mountain tops. Special rates made for land-seekers to go and look at these lands and for settlers. Write us or come in and ask us for information about what has already been done in that section.

MIDLAND ROUTE

C. H. SPEERS, G. P. A.
SEVENTEENTH AND CALIFORNIA STS. DENVER, COLORADO

Dining Cars, Pullmans and Chair Cars on All Trains

PATENT YOUR IDEAS
$8,500 offered for one invention. Book "How to Obtain a Patent" and "What to Invent" sent free. Send rough sketch for free report as to patentability. Patents advertised for sale at our expense in Manufacturers, Journals.
Patent Obtained or Fee Returned
CHANDLEE & CHANDLEE, Patent Att'ys
Established 16 Years
1046F. Street, Washington, D. C.

PATENTS That Protect and Pay. Send Sketch or Model for FREE SEARCH. Books, Advice, Searches and Big List of Inventions Wanted **FREE!**
Watson E. Coleman, Patent Lawyer, Washington, D.C.

STRAWBERRY PLANTS guaranteed as good as grow, at $1.00 per 1000 and up. Catalogue Free.
ALLEN BROS., PAW PAW, MICHIGAN

TREES TRUE TO NAME SOLD DIRECT to planters. Ask for Catalogue.
BOONVILLE NURSERIES, Boonville, Mo.
Peyton Bros. & Barnes

STRAWBERRIES Get the best plants at low prices. Send for our 30th annual catalogue. Try Bethel, best new one.
SLAYMAKER & SON, WYOMING, DELAWARE

the grower, to determine value and adaptability to the then new prairies of Illinois. I do not remember a single failure in this orchard until the year 1893, which was due to a severe freeze.

"My Conclusions Are

that with apple buds self-pollinated they are not so strong, that they do not possess the vitality possessed by buds that are fertilized by the pollen from some other variety. All of the trees of any certain variety are the same as one tree. Separate trees of Ben Davis for example, although individual trees, are from the same original bud and constitute but one tree, or individual. They are the product of grafting or budding, and are essentially a part of and identically the same as the tree from which they sprung

"Varieties originate from the seed and each tree so originated is of a different kind, no two being alike, in either tree or fruit. It is a well known fact that seeds from the same apple produce entirely different progeny, some may produce sweet fruit and others sour fruit.

"Darwin demonstrated that animals too closely related produce weaker offspring than those not related. Nature is so constituted that the same laws prevail in the vegetable as in the animal kingdom, with modification of course, so that the cross-pollination of one variety by a different variety is a demand and law of nature that we should heed.

Alternate Four-Row Blocks.

"To secure the best results, plant your apple orchard so that not more than four rows of the same variety are together It is now my practice and has been for several years to plant four rows of one variety alternating with four rows of another variety. For example in setting fifty acres of Jonathan and fifty acres of Grimes in 1907 I alternated four rows of Grimes with four rows of Jonathan throughout the one hundred acres. By so doing I also had in mind the harvesting of the fruit in the most economical manner. It sometimes happens that the windfalls are of value if harvested separately and this is best secured by the four row system The picking of the fruit at harvest time is also best conserved if this method of planting is followed. I would not alternate in the same row unless it were intended to remove the fillers, on account of the annoyance of keeping the varieties separate.

"To Secure Cross-Pollination

in an orchard already planted to the block system there are two methods or a combination of the two, dependent upon conditions.

"First all vacancies in any orchard may be filled with trees of another variety that blooms at the same period as the variety to be pollenized. If the vacancies are sufficiently numerous this is all that is required. If not, then enough of the trees should be top-grafted with a suitable variety to accomplish the purpose. In place of working an entire row a good way to secure the desired effect is to top-work or graft one tree in every nine. That is, beginning with the second row and the second tree in the second row of a block, top-graft that tree and every third tree in that row and every third tree in every third row thereafter. If you will lay out a block of thirty-six trees, six trees each way in a square, and put a circle around each tree to be top-worked, you will discover that each tree so worked will be in the center of a little square of nine trees. In other words all trees in the block adjoins a tree of another variety diagonally or at right angles."

Growing Crops Between Trees.

Owners of orchards in the Spokane Valley, which extends into northern Idaho, a distance of thirty-four miles, enjoy among other things an advantage over apple districts in other parts of the country in that it is the only one in the Western country, if not in all America, that has a metropolitan city of the 110,000 class at its gateway, thus providing the highest cash markets for all kinds of small fruits, melons, vegetables and other perishable produce.

These products can be placed in the hands of consumers within a few hours, as the valley is provided with three lines of steam railroad, an electric railway system, automobile boulevards and excellent county roads, thus affording every opportunity to present the flower of the berry and melon fields and truck gardens in the pink of condition to command the highest prices, also obviating the usual losses through spoilage and high express and commission charges. This assures a profit on every crop to the grower. Climate, soil, water and transportation facilities permit of the widest diversity of horticulture and mixed farming.

STRAWBERRIES IN A YOUNG ORCHARD IN THE SPOKANE VALLEY OF WASHINGTON.

Strawberries, blackberries, raspberries and loganberries are the principal money-making crops planted between rows of young trees in the Spokane Valley, and if properly cultivated, the returns range from $150 to $400 an acre. These are conservative figures; in fact, the horticultural committee of the Spokane Chamber of Commerce, of which R. Insinger, manager of the Northwestern & Pacific Hypothek Bank, is president, has authenticated statements showing that crops of strawberries have averaged more than $510 an acre, while truck farmers report yields valued at from $100 to $300. Poultry raising has paid the initial cost of the land in from one to two years.

While the apple crop is handled by the fruit growers union, the berries and other produce are sold either to distributing agencies or to retailers, and the city market, though in numerous instances the growers deal directly with the consumer. The latter plan involves personal solicitation and requires constant attention, but the difference in revenue more than pays for the extra work. Many growers have regular customers for all the small fruits, garden truck and poultry and eggs they can produce.

The problem of extra help at harvest time is solved by the telephone and the employment bureaus maintained by the City of Spokane and private firms, thus assuring the services of pickers and packers and other laborers when required. Only high-grade fruit is packed in boxes and crates, the rest being delivered to the cannery in the valley. The demand is greater than the supply as the consuming population is increasing in proportion with the producers. AUGUST WOLF.

Washington.

The Utah Fruit Exchange, of which James M. White, Ogden, Utah, is manager, is making great preparations for handling the crops of fruits of the members this year. This exchange is composed of a number of local associations, and the outlook is very bright. Utah fruits are of high quality, and with a strong organization to see that the fruit is properly graded and packed, good prices should be realized.

You Need This Knife

The Wonder Knife can be used to advantage by every farmer, fruit grower and stockman. Every knife is guaranteed. This is the handiest and best knife ever manufactured.

The illustration shows slightly reduced size of the knife. Besides the large blade, which is two and three-fourths inches long, this knife has a smaller punch or reamer blade two and one-eighth inches long, and cuts holes exactly as shown in illustration. Both blades are of finest tempered tool steel, finely ground and polished. You have paid $1.00 or $1.50 for a knife not as good as this one.

The Wonder Knife is built for practical use, not filled with Nic-Nacs, as is the case with most combination knives. Especial care is taken to make the knife sufficiently strong for use of farmers, fruit growers and stockmen. It is no more clumsy or awkard to carry in the pocket than an ordinary three-bladed knife.

With this knife you can make a round hole of any size in the thickest leather more easily and more quickly than with a belt punch.

The Leather Punch will be found indispensable for making various sized holes in leather for buckles, rivets, belt lacing, etc. The Leather Punch acts as a swedging awl or marlin spike when turned to the left; especially adapted for use in lacing belts, untying knots, etc. This knife is a marvel of mechanical ingenuity, embodying every essential element, viz., Simplicity, Convenience, Durability, Smoothness and Strength.

How to Get the Wonder Knife

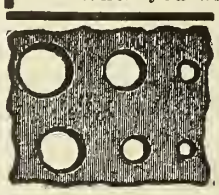
Send $2.00 for two yearly subscriptions to The Fruit-Grower, either two new subscribers or your own renewal and one new subscriber, and we will send this knife by return mail, prepaid, free of charge.

Send remittance of $1.25 and we will enter your name for a year's subscription to The Fruit-Grower and send the knife prepaid without further charge.

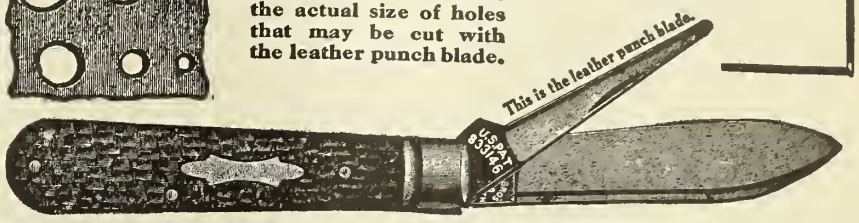
If you want the knife only, send remittance of 50c, and the knife will be mailed to you postpaid.

When you write, address, "Knife Premium Department,"

The Fruit-Grower, Saint Joseph, Mo.



This illustration shows the actual size of holes that may be cut with the leather punch blade.



BOTH *for* $1.10

THE FRUIT-GROWER, One Year.....$1.00
THE POULTRY KEEPER, One Year..... .50

Regular Subscription Price.....$1.50

Practically every reader of The Fruit-Grower is interested in poultry, and here is an opportunity to get a good poultry paper for one year at a bargain rate.

The Poultry Keeper, published monthly at Quincy, Ill., is one of America's leading poultry journals. To anyone sending $1.10 in acceptance of this club, we will send The Fruit-Grower and Poultry Keeper both one year. This applies to either new or old subscribers, and the offer holds good until April 1st, only.

When you write, address, "Poultry Keeper Club Department,"

THE FRUIT-GROWER, St. Joseph, Mo.

Good Harness Cheap

We make the best harness goods in our own big factory and sell them direct to you. You don't pay a cent of profit, except to us. We have the largest retail factory in the world, so the small profit we ask SAVES YOU from 20% to 25% of Your Money. We make better harness, too—you will say so. We have built this enormous business by 30 years of honest dealings. We also sell the

Best Buggies *and* Wagons

At Wholesale Prices

Don't give away your money — Our Big 152 page illustrated catalog fully describes just what you want and quotes amazing low prices. Don't buy anything in Harness or Vehicle line 'till you see it. Send your name and address today for a Free Copy.

Dont Fail to get this Big Catalog-Free it's

ANISER HARNESS MFG. Co
DEPT. 61 ST. JOSEPH, MO.

Protection for Damaged Fruit and Shade Trees

Save those already damaged by rabbits, borers, pruning or other causes. Write for circular to

E. G. MENDENHALL, Fruit-Grower's Supply Depot
Box 300, Kinmundy, Illinois.

GOOSEBERRY SNIPPER

Removes all stems and blows from gooseberries. Write for circular. Wm. Urschel, 156 S. Napoleon St., Valparaiso, Indiana.

BLACKBERRY CULTURE

How to Set Out the Plants, Cultivate and Prune—The Best Market Varieties

As this is my first contribution to your valuable paper, I wish the readers to understand that I do not claim to know it all about my subject, nor do I lay down rules or express opinions that will apply everywhere. What I say is from personal experience, telling the best ways I have tried in planting, growing and in marketing blackberries; also giving my views on the best variety. I am located in the northwestern county of Arkansas, 217 miles south of Kansas City, in a section known as the Ozarks. Possibly for this section my experience and observations will be most valuable, but there are fundamental principles of success that apply everywhere.

I have been growing blackberries for thirteen years, having all the while from two to twenty-five acres, and still have my original field, and experienced the drouth of 1901 and dry spell of 1911. I have not only always marketed my own crop, but hundreds of crates for others, either by purchase or while acting as shippers' agent, amounting to two or three thousand crates annually.

The most successful horticulturist is he who studies his own plot of ground, climate and location, adapting himself to it and applying to it all the best methods of agriculture and horticulture, growing such crops as best suit his particular land and locality. I consider the growing of blackberries a safe and profitable business, being an important factor in diversified farming, of which I am an ardent exponent and a living example. I have never had a crop failure in growing blackberries. They have always paid annually for their care and left a fair margin. I have grown an average of over 125 twenty-four-quart Leslie crates per acre and have netted from $1.50 per crate to a much smaller amount. They are easily set, easily tended, the ripe fruit easily handled and marketed, and when unsalable, by reason of low market or wet weather, the berries may be easily canned.

Setting the Plants.

My story begins with my second setting of blackberries, in the spring of 1901, when I planned to add another acre to my blackberry field. Blackberries should be set as early in the spring as possible. My hands went to a neighbor's to dig the plants, and the ground being loose, in getting the plants they pulled up long roots, sometimes two feet or more in length. In preparing a blackberry plant we leave the cane about six inches long and cut off the roots about three inches from the stalk. We set these plants in checks, four by seven feet, the ground having been previously plowed and thoroughly harrowed. Having a pile of roots left, we cut them into pieces three inches long and dropped them in a furrow two feet apart and covered with a plow. This being the year of the drouth we found in the fall that where we set the plants there was about 15 per cent of a stand, and where we set the root cuttings we had about 90 per cent of a stand, and this has always been the better part of the field.

This led us in all subsequent setting to cut off the entire cane close to the roots, cutting this as a root also. Then the roots were cut into pieces three inches long and dropped into checks as one would drop corn, putting one plant or two roots in a hill. Planting in this way, they may be covered with a hoe or with a plow. We plant three by six feet or four by seven feet, as the strength of the land indicates. Sometimes it is better to put these roots in a drill and to transplant them the following year in check rows where they are wanted. This aids in early cultivation as one can see the plants earlier in the season and may be best in old ground, where weeds and grass are prevalent.

The same rules of good farming apply to blackberries as to other crops. Thorough preparation of the seedbed and clean and thorough cultivation are necessary. As soon as the young shoots make their appearance above ground so that the rows can be seen, begin to cultivate, continue as often as is necessary to keep down the grass and weeds and to keep the ground loose. If it is a dry season keep up a dust mulch. Cultivate as late in the season as grass and weeds form. The hoe should be used to keep down the sprouts and the weeds from the hill. Any tool used for the cultivation of corn will do. Corn or cowpeas may be planted in the wide rows the first year, the latter being much the better of the two. The cultivation the second year should be much the same as the first, excepting that they should be cultivated only one way. The best tool I have found is one section of a spring-tooth harrow, putting on a light team. In fact, the spring-tooth harrow is the best tool I have on the farm for all-around purposes.

Most of my blackberries have been planted on new ground, and I much prefer fresh ground for all kinds of berries. I do not take out the stumps, but plant between them. The richer the ground, the better for blackberries, and in this section the higher the better, but these two conditions are seldom found together. My blackberries are grown on high ground called "rocky" here, but should be called gravelly or stony. They are grown on every kind of soil here—prairie, valley, bottom, flat-woods and ridge. In the long run the latter location is best, as there is least danger of their being winter-killed or hurt by frosts in the spring. I often tell visitors in this country, that the poorest land is the best.

Pruning.

Pruning commences the second season, when the young canes are cut back when three feet high. We go through with a pair of hand pruners and cut off the tips of the new growth. This will cause the canes to grow more stocky and to send out more and longer laterals. After fruiting season the old canes are taken out by a pruning hook and hauled away. The next spring around blooming time the laterals are cut back, where they are too long, rest on the ground, or where the plants are top-heavy. Bear in mind that the more you cut back, the earlier the fruit and the larger the berries. Some grow orchards for brush and some for fruit. The same with berries—one can raise canes or raise berries, as he wishes. Pruning shortens the picking season, causing the berries to ripen more nearly at the same time. Soon after each fruiting season cut out the old canes.

Last Indefinitely.

How long will a berry field last? As

These Two Books FREE to Every Grower of Vegetables

Vegetable Gardening by Sam'l B. Green, the greatest practical book ever published on vegetable growing—it is crowded with valuable information. It contains everything of interest to the market gardener, the farm gardener or the small suburban gardener. It is indexed, that no time need be lost in finding the solution of any perplexing problem that may arise. Horticultural authorities in every state have endorsed it. There is not another book published today that compares with it in thoroughness. It is indispensable to every grower of vegetables. It contains **256 pages with 115 illustrations.**

The Rural New Yorker says: "We consider this the most useful and practical book on gardening that we have examined."

Popular Fruit Growing by Sam'l B. Green, is a thorough and practical guide for fruit growers, nurserymen and students. It treats and analyzes fruit growing problems in much the same manner that a business man analyzes his profits and losses. This book will help you and will pay anyone who raises fruit to read time and again. If you do not grow fruit now, you will after glancing through this book and you will gain so much general information, so much help, so much general good that you will make money growing fruit. It has **296 pages with 125 illustrations.**

You will find this book one of the most interesting ever brought to your attention. It is practical, it is thorough, it is complete. You read and forget many books, but this one will be consulted daily after others have been forgotten. Either of these two books given free mailed to your address with only one year's subscription to "The Vegetable Grower," the price being fifty cents.

THE VEGETABLE GROWER

a monthly magazine, is devoted to the growing of vegetables, fruits and flowers, edited in a clean, understandable way by authorities in their chosen fields. It advocates scientific with practical growing and should be of much help and interest to the market grower and farm gardener. It comes to you twelve times a year to assist in the hundred and one things that may perplex you. Besides the articles of various subjects relating to vegetable growing, the regular feature departments each month will be "Management of the Greenhouse," "The Experience Club," "Growing Flowers for the Market," "Review of the Experiment Stations," "The Farm Garden." Each issue will be worth what you pay for it for an entire year. To introduce this paper to the greatest number of interested readers, we are making this unheard-of offer of giving either of the above books free with one year's subscription, the price of fifty cents. If you want both books send one dollar and we will send the paper two years to you or send it one year to two different addresses. Here is your opportunity to secure this helpful paper at a reduced price. These books sell at $1.00 through any book store, but by special arrangement we are able to make this remarkable offer.

Don't delay, order today.

Write for either or both books today.

Address

The Vegetable Grower Publishing Company

324 Rand-McNally Bldg. *CHICAGO, ILL.*

How Do You Do It?

Cultivating under orchard trees is not an easy job. Where trees are low and spreading the task is more difficult. Many orchard men are using simple implements of their own construction that do this work very effectively.

How do you cultivate under your trees?

In the April Fruit-Grower we want to tell about simple, effective, time and labor-saving implements that help about the farm. Will you tell us about your machines? What implements do you find most useful? What do you do with your power sprayer when the spraying season is over? Do you use your sprayer engine for any other purpose? How do you plow your orchard? What implements do you use in cultivating hilly land? What has been your experience with tractors, automobiles, garden implements, seed drills, hand tools, nursery implements, transplanting machines, etc?

Prizes will be awarded for the best stories of personal experiences with various farm and orchard implements. Photographs should accompany the articles wherever possible. Address

The Editors, The Fruit-Grower

St. Joseph, Mo.

Warranted to Give Satisfaction.
Gombault's
Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

In writing advertisers please mention The Fruit-Grower.

Chance to Make Money

Don't ignore it. Write for exclusive agency in your county. Make $2.00 per hour selling our INDESTRUCTIBLE HAMELESS HORSE COLLARS

No pads or straps. Adjustable—fit any horse. Don't chafe, prevent galls, cure sores. Lighten draft. Save harness hills. Ask for liberal profit offer. Exclusive selling rights.

Johnston-Slocum Co., 838 State St., Caro, Mich.

Protect Your Trees

DON'T take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using

Hawkeye Tree Protectors

Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—¾ cent apiece. Special sizes made to order. Write for circular and samples.

We make Fruit Baskets — get our prices.

Burlington Basket Company
118 Main St., Burlington, Iowa

In writing advertisers please mention The Fruit-Grower.

Killed While Pruning

That has been the fate of many who climbed to do the work in the old way, saw and axe fashion.

NOW the up-to-date operator stands on terra firma where he is safe, where he can shape a tree correctly and without mutilating the bark with his shoes. This bark wringing process can't be seen at once, but the damage is done just the same.

WHAT has brought the change? The use of the any length handle, automatic, well made, up-to-date KANSAS PRUNING KNIFE improved. This knife does big work, doing it fast and easy. Really pruning with it is a pleasure.

We would like to tell you more about the KANSAS PRUNING KNIFE, also about its little companion, the HAPPY THOUGHT PRUNING KNIFE with its quick pump gun action. Now while the pruning season is on, for your good as well as ours, drop us a card for more information. The International Tool Co., 49 Porter St., Detroit, Mich.

Lange Stalk and Plant Cutter

for cutting out dead stalks of Blackberries, Raspberries, Currants, Gooseberries, Roses, etc.

Made of Solid Tool Steel, finely tempered and ground, with Wood Handle. Price $1.00, 3 for $2.50, express prepaid. Dealers write for special prices.

LANGE MFG. CO., Scotch Grove, Ia.

SIMPLEX SPRAYERS.

A New Patented Sprayer different from others. Only one keeping up a high pressure, liquid always agitated. No stopping to pump, done while you spray. Recommended by experiment stations. Once tried will use no other. Easiest to operate, durable, saves time, labor and money; non-clog. For trees, potatoes, gardens, whitewashing, painting, etc. Lowest prices. Send for Spraying Guide.

Simplex Mfg. Co. Bx 901, St. Peter, Minn.

Cheap as Wood.

We manufacture Lawn and Farm Fence. Sell direct shipping to users only, at manufacturers' prices. No agents. Our catalog is Free. Write for it today.

UP-TO-DATE MFG. CO. 976 10th St., Terre Haute, Ind.

long as you take care of it. Nearly all berry fields die of neglect. The man wears out, and not the berry plants. I have never as yet seen a clean field of berries plowed up. When they get so full of grass and weeds as to smother out the plants or the fertility of the soil has been exhausted, we say that our berry field is worn out, and we plow it up. If we would stop and analyze the situation we would see that they have run out by reason of our neglect. Blackberry fields will last indefinitely, if they are well cultivated, kept free from grass and weeds and the soil fertility maintained. The sowing of cowpeas between the rows late in the season is an excellent soil restorative.

If plants are set in the spring, a light crop of berries may be expected the next year. This crop is about 25 per cent of what may be expected in other years. If root cuttings are used, the first crop will be very light. Blackberries usually ripen here the first week in June, and continue to the last of July. The fertility of the soil, the rainfall and the amount of pruning largely governs the length of time blackberries last. For marketing the berries should be picked as soon as they turn black and should not be left until they are what is called "dead ripe." We use the Leslie quarts, and the pickers go to the field with handcarriers holding six quarts. Each picker is provided with a ticket representing a number of quarts, and at the packing shed credit is given on this card for the number of quarts picked, as they come in, by punching out the number. Before putting the boxes into crates each quart should be well shaken down and if not good, rounding full, refill it. Don't send slack quarts to market.

Early Harvest Best.

There are a good many varieties suitable for home use or for near markets, but to grow for commercial purposes on a large scale, to be shipped to distant markets, or for canning, the Early Harvest is so far ahead of all other varieties tried here that it is the only one worth considering.

I can already feel the storm of opposition that this statement will bring out by introducers of new varieties, yet nevertheless it stands as my uncompromising opinion, backed by such observation and experience as I have had. I have shipped as many as 700 twenty-four-quart crates in a single night, shipping to Colorado, Minnesota, Kansas, Nebraska, Iowa and nearer points, having them all go through in good shape. I do not always have such results, as rough handling and damp or wet weather alters results.

It Is a Good Canner.

The Early Harvest blackberry is the earliest variety we have, and it is also the latest, as it is five to eight weeks in maturing its crop, making a long shipping season. For canning it is far above all others. Fill a No. 2 can with Snyder blackberries and another with Early Harvest and after processing open and note the difference. The former is filled with juice and is almost worthless, the latter opens up with a can of solid berries. If all the canned blackberries put on the market were of the Early Harvest variety the demand would be greater and the price increased accordingly. For eating fresh there are better varieties, but for canning, for pies, and for shipping the Early Harvest is by far the best.

The marketing of fruit is perhaps the most important proposition of all. It is here that we get pay for our time and returns for our investment. Marketing of fruit is almost a business itself and requires business ability and experience. The best results are obtained by co-operation. In the marketing of most fruits and berries we are compelled to co-operate or combine in some way to load cars, and in marketing most fruits this is the only way. Where there is a shippers' association it is usually best to market one's berries through this organization. As blackberries do not carry under refrigeration and as shipping in carlots has rarely been a success, the berries from this section as a rule go by local express. There are a score or more of towns growing blackberries in this locality.

The Biggest Problem.

If all of the blackberries in this section could be marketed by one organization, the results would be far better for the grower. Under present conditions often one market is glutted and another bare. Right here is the biggest question that confronts the fruit grower, the distribution and selling of his products. This question is solved in this section by the Ozark Fruit Growers' Association, which sells for the local associations and carlot shippers, but they handle only car shipments. The greater portion of the blackberries grown in this section are sent on consignment to commission men in various cities in the Middle West.

When I commenced marketing fruit and berries I did not know a single buyer or commission man in the United States. From the advertising pages of The Fruit-Grower I selected two houses, one in St. Joseph, Mo., and one in Topeka, Kansas, and to them I made my first consignments. Later I learned of houses in Joplin, Pittsburg and Kansas City, nearer markets, and also shipped to them.

Let me say in this connection, as I am willing to "give the devil his due," that I have shipped thousands and tens of thousands of packages of fruit and berries to hundreds of commission men in scores of cities, and have found them as reliable as any set of men I ever dealt with. The commission man is a necessary evil and many unjust complaints are laid at his door. The system of sending fruit on consignment is wrong, for a farmer should sell what he grows, and he could always do so under proper organization.

Sold on Consignment.

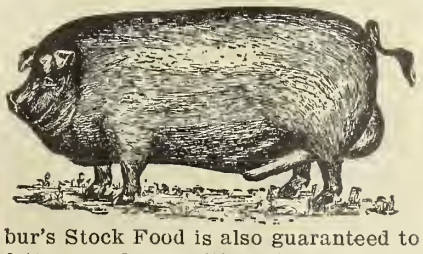
While I have marketed the greater portion of my blackberries by sending on consignment, it is not the best way. Markets are too often under or over supplied. A good market cannot be maintained on uneven and irregular supply and consigning is a one-sided proposition. In recent years I have improved conditions by sending out quotations a few days ahead, at a price in keeping with conditions, and have sold most of my output by filling these orders. When one fills these orders, keep close to the golden rule and the square deal. When berries are unmarketable, do not fill your orders, but can your output, or ship on consignment to a near-by market. If you use the latter method, don't cuss the commission man if your returns are low, but remember that if your berries are wet or over-ripe, others are in the same boat and are doing the same thing.

What a wonderful world this would be if one half knew what the other half was doing! E. N. PLANK.

Arkansas.

Stop Hog Cholera.

At this time when thousands of hogs are dying from cholera, every reader should send for the big free $1.00 package of Wilbur's Stock Food which this company offers to give you as a sample. They claim that this Stock Food fed to your hogs absolutely prevents cholera and removes all worms. Wilbur's Stock Food is also guaranteed to fatten and condition hogs, cattle, horses, sheep and poultry in much less time than without its use. It is a wonderful milk maker, body toner and feed saver.



Over one-half million farmers feed Wilbur's Stock Food and have bought it for almost a quarter of a century. See the big Free $1.00 box offer on back cover of this paper. The address is Wilbur Stock Food Co., 534 Huron Street, Milwaukee, Wis.—Adv.

Renew your subscription today.

20th Century Grader

LET our Free Book tell you all the remarkable money-saving, labor-saving, time-saving advantages of this Famous 20th Century Grader over any other tool intended for the purposes. None compare on any work of grading and leveling roads, building ditches, levees, borders, irrigation laterals, leveling land, cutting sage brush and weeds, scalping alfalfa, cleaning streets and sidewalks and its many other uses.

Does 40 Men's Work—
Pays Back Its Cost In 20 Days

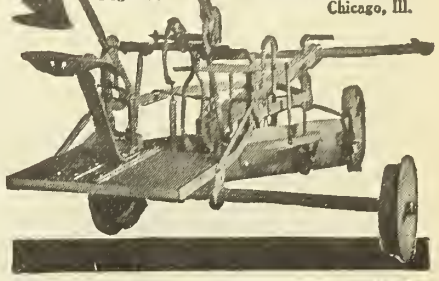
It's the original one-man machine. Thousands in use—all giving splendid service and satisfaction.

FREE BOOK

Tells All Facts and Figures

It is built of steel, lasts a lifetime. Send your name on postal for interesting free book of facts and figures—also letters and photo-illustrations from owners. Address

The Baker Mfg. Co.
530 Hunter Bldg., Chicago, Ill.



Electric

The Only Wagon for Fruit Growers

There's a handiness and convenience about it that's impossible in high-wheeled wagons.

Why lift filled boxes, barrels, baskets and crates high into the air, only to lift them down again?

Get the Handy Wagon Habit

The low down Electric Handy Wagon is great for small fruit growers, great in the orchard. You can drive under trees where limbs are low without knocking the fruit off. Drive around and into places you can't go with high wagons. Saves half the hard work at spraying time, at fertilizing, in hauling trash, etc.

Broad tires do not cut into and rut soft ground. Make draft light. Steel wheels carry any load. Never any drying apart or tire setting.

Let us send you a book free to show you why you should have an Electric Handy Wagon. Suited to all farm hauling; a labor saver everywhere. Address

ELECTRIC WHEEL COMPANY
Box 57, Quincy, Ill.

Rubber Stamps

You need Rubber Stamps for marking berry boxes, crates, stationery, etc. Send for free catalogue.

Gardner Office Supply Co. SPRINGFIELD MISSOURI

GOOD MONEY in Hay Handled Right. Kouns Steel Rakes and Stackers handle right. Let me show you.
W. KOUNS, SALINA, KANSAS

Please Mention The Fruit-Grower whenever you correspond with our advertisers

I Cured My Rupture

I Will Show You How To Cure Yours FREE!

I was helpless and bed-ridden for years from a double rupture. No truss could hold. Doctors said I would die if not operated on. I fooled them all and cured myself by a simple discovery. I will send the cure free by mail if you write for it. It cured me and has since cured thousands. It will cure you.

Fill out the coupon below and mail it to me today.

Free Rupture-Cure Coupon

CAPT. W. A. COLLINGS, Inc.
Box 28 Watertown, N. Y.

Dear Sir:—Please send me free of all cost your New Discovery for the Cure of Rupture.

Name.....

Address.....

.....

FLUMES FOR IRRIGATING

Cement Makes an Ideal Ditch, Is Cheaper in the Long Run and Conserves Water

Last April I built an irrigation flume 660 feet in length, on the ranch of T. C. Wilson in the Wenatchee Valley of Washington, using cement and sand in the proportion of one to six. This flume has a fall of one inch to each eighteen feet, and is always ready for use. The water can be changed without loss of either time or water, which is not always the case with a flume made of boards.

The cost of the materials which entered into this flume is no higher than the cost of a wooden flume, considering the prices of cement and lumber, yet this one will last a lifetime with little or no repair.

The inside measurement of this flume, which carries five inches of water, is five inches wide at the bottom, eight inches at the top, and with walls four inches high. The bottom is four inches thick, the sides are three inches thick at the bottom and one and one-half inches thick at the top. At intervals of four feet there extends through the wall of the flume sections of one-inch iron pipe three inches long, through which water is admitted to the laterals for watering the crop.

The way I built this flume was, first to level the ground, although this was easy, as the land had already been well graded. Then I made a form of 2x8 planks, set twelve inches apart and held in position by stakes on each side. Into this I then filled four inches of juicy mortar, which was tamped good and then leveled to the proper grade. On top of this I then placed my inside form, together with the three-inch sections of iron pipe which open into the laterals, and then filled around the form with more mortar of the same kind, tamping it as it was placed.

Both inside and outside forms were made in three sections eighteen feet long. These were advanced along the line of the flume as needed, and thus did not necessitate the use of any more lumber than was needed for all of the work that could be done in one day. I built this flume alone, without any assistance from start to finish.

I found it most convenient to mix the mortar in an iron wheelbarrow, while the sand was dumped in loads alongside the flume. In the irrigated sections I am sure that such a flume as this is the only kind to use in the future. It certainly has many advantages over the board flume in the orchard or truck garden. Anyone can build such a flume for himself and it is then so easy to manage the water that a boy can do it.

PETER HOVLAND BUILDING A CEMENT FLUME ON THE RANCH OF T. C. WILSON IN THE WENATCHEE VALLEY OF WASHINGTON.

Mr. Wilson is enthusiastic in praise of this cement flume, and the government and state officials tell me that this is the first cement flume of this sort has been built in the state of Washington. PETER HOVLAND.

Washington.

Practical Work for Agricultural College Boys.

Prof. S. A. Beach of the horticultural department of Iowa Agricultural College, Ames, Iowa, writes The Fruit-Grower that a number of the young men taking the horticultural course at that institution want to get practical experience on fruit farms during the summer vacation, and they desire to get in touch with men who need their services. Professor Beach writes that these young men range in age from eighteen to twenty-five years, and that they can work from about June 1 to September 1. Those who are interested and who can use one or more of these young men should write to Professor Beach, at address given above.

IRRIGATING FROM THE CEMENT FLUME.

Rills of water are flowing through the openings along the flume, and then into the corrugations between the tree rows.

Can't Afford to Miss The Fruit-Grower.

W. L. Grant, Pueblo, Colo., writes that he missed the January Fruit-Grower, and asks us to send him another copy, and he adds, "I wouldn't miss that January number for the price of a three-year subscription."

This man is a subscriber and knows he cannot afford to miss a single issue of The Fruit-Grower. Your neighbors, however, are likely not acquainted with The Fruit-Grower, and don't know what they are missing. Will you not help them and help us by telling them of The Fruit-Grower? Or, better, send us their subscriptions. If sent at once, they can start with January issue.

Orchard protection: Subscribe now.

SAVE $50 TO $300

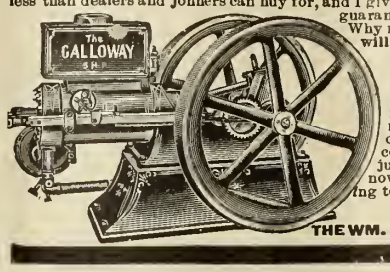
On a Gasoline Engine According To Size

Ranging From Our Famous 1 3-4 H. P. Pumping Engine up to 15 H. P.

Buy from a real engine factory—save dealer, jobber and catalog house profits. No such offer as I make on this high quality engine has ever been made before in all gasoline engine history.

I operate the largest factories of their kind in the world; manufacture engines in tremendous quantities and sell direct to the user with just one small profit added to cost of material and labor. No use paying big profits to a lot of middlemen. GALLOWAY WILL absolutely and positively save you from $50 to $300 on a gasoline engine that will exactly meet your requirements. Anyone can afford an engine at the prices I am charging. I *sell* for less than dealers and jobbers can buy for, and I give you besides, the best engine possible to build with a 5-year guarantee, and *30 day free trial.*

Why not sell your poorest horse and buy a Galloway 5 H. P.? You will be money ahead at the end of the year.



Get Galloway's Biggest and Best Free Gasoline Engine Book

fully illustrating and describing all Galloway engines. The most complete engine book ever written. Printed in four colors and containing hundreds of letters from men all over the country who have long been using Galloway engines and know just what they are. Don't wait—don't put off! Sit right down now and write me for this book, because it actually means a saving to you of from $50 to $300 on a Gasoline Engine. It will pay you.

WM. GALLOWAY, President

THE WM. GALLOWAY CO., 1035 A O Galloway Sta., Waterloo, Iowa.

Attractive Catalogs Produce Results

Sample of illustrations.

WHY not make your catalog one that will appeal to the buyer so strongly that he will not hesitate to send an order? Your nursery stock is the best that can be grown, make your catalog measure up to the standard of the stock. You know how to grow the best nursery stock; we know how to build a catalog that will help you sell it. Let us co-operate with you to produce results. We have every facility to handle the work, printing plant, illustrations and practical knowledge of nursery stock. We can build a catalog entire if you wish, furnish descriptive matter, compile and edit the work for you from start to finish.

Write us at once for information, suggestions and samples.

THE FRUIT-GROWER, St. Joseph, Mo.

FITZ Overalls

Are made to fit all from a three-year-old boy to a 500 pound man. The FITZ reserve stock is always complete—insist on FITZ

If your home dealer does not carry FITZ overalls write and we will see that you are supplied. Free FITZ book on request.

Burnham-Munger-Root D. G. Co., Kansas City, Missouri.

FRUIT TREES

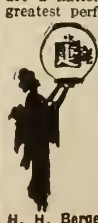
If you wish to plant the kind of trees that have made the Northwest apple districts famous, send for catalogue and price list at once. Our apple trees were never better and our special prices are right.

W. C. HOPSON, Nurseryman,
MILTON, - - OREGON

In writing advertisers please mention The Fruit-Grower.

THE JAPANESE

are a nation of vegetarians. They have attained the greatest perfection in the cultivation of vegetables and fruits. To introduce these we send for trial during March only, 1 packet Japan Musk Melon—so delicious the memory of it makes your mouth water. 1 packet Radish Sakura-Jima, the most tender and largest white radish known. 1 packet Shojoin Turnip—melts in your mouth and grows to a very large size. These three packets for ten cents with our 1912 Ideal Spring Garden Book, containing lists and full descriptions. Best Japan Vegetables, etc. Address



H. H. Berger & Co., 70 Warren St., New York, N. Y.

THE STRAWBERRY BED

Any soil that will grow a good crop of corn will grow good crops of strawberries; still, though the strawberry seems to be capable of adapting itself to almost any soil, there are soils which are preferable and on which good results can be more easily obtained.

If I could choose my strawberry soil I would choose a sandy loam containing all the clay possible without falling into the clay-loam class, and so full of humus that it would feel soft and springy under foot. I would have it level or with but a gentle slope, and always free from standing water; but with a water table from two to three feet below the surface to provide a large and constant supply of capillary moisture. Very few of us can have all these conditions, but we can take the best we have and by draining or adding humus or both, we can obtain conditions that will give us good rewards from a carefully tended strawberry bed.

We will have to take the best soil we have for this year's setting, and if we have a field that has been in a cleanly cultivated crop two or three years, we will choose that, for the reason that newly-plowed sod is apt to be infested with the worst insect enemy of the strawberry, the white grub. At the same time we prepare a place for next year's setting, and the next, and even for the patch we will set three years hence. We plow the land deeply if it is inclined to be heavy or shallower if light and sandy, and we plow it well.

We set the plow to turn a furrow only as wide as it can completely twist and pulverize, not a great wide furrow that will be torn and dragged loose and flopped over with but a small proportion of the soil particles moved at all. We then harrow and reharrow until we have our soil to the depth of the furrow as mellow as an onion bed and firm enough to make capillary action strong. If our soil is light a roller or floater helps in compacting it.

Buy Plants Early.

If we have to buy our plants, we order them early and if they arrive before the ground is ready we carefully heel them in, shortening the roots to a uniform length of from three to four inches and remove all but two or three of the youngest leaves, if this has not been done before shipment. We are very careful not to expose our plants to the air any longer than it is absolutely necessary, and we order enough so we can discard any weak, broken or inferior plants, as we want a perfect stand of thrifty plants to insure our chances for a maximum crop. A full crop can never be had from a broken or weak stand.

When the ground and plants are ready we commence setting and make our rows straight, both for the looks and the convenience and time saved in caring for them. We set by line or mark out our field, but if we mark out we make small, shallow marks, or they will interfere with the proper setting of the plants.

We set the plants with dibber, spade or plow with equally good results, if we keep the rows straight and are careful to observe two vital points in setting the plants. These two points are: First, that the crown of the plant bears its exact relation to the surface, and second, that the soil is thoroughly compacted about the well-spread roots of the plant over their entire length.

Just a word in regard to the depth of setting. Observe a strawberry plant carefully and you will see there is no stem between roots and crown, as in a cabbage plant, but that roots and crown are so closely connected that the range in depth for proper setting is practically nothing. Many good plants are lost each year by setting too shallow, which exposes the roots and dries out the plant, causing it either to die or struggle along in a half-hearted way; or by setting too deep, so the crowns are buried with soil from early cultivation or the first heavy rain. A perfect stand is doomed by either mistake. The distance for setting will depend entirely on what system we decide to adopt and though there are really fewer systems than many seem to suppose, the subject is in itself enough for a separate article. If the plants are to be grown in matted rows, plants should be set from twelve to thirty inches in the row, depending on the variety and whether we are to allow full matted rows or restrict them, and rows should be three and one-half or four feet apart. If they are to be grown in hills, each plant must have from twelve to eighteen and in some cases twenty-four inches in the row, and no matter what the row arrangement we settle on, picking paths should be provided that are two and one-half to three feet wide and the pickers will have to be very careful, even in these.

Care for Pollination.

If we are to grow varieties with pistillate or imperfect blossoms, we must be careful to get a row of a strongly staminate variety at least every fifth row, and every three or four is better. A smaller proportion of perfect flowers often gives good results, but we do not know what the weather will be at blooming time, and it is better to be on the safe side.

By the thorough fining and compacting of the soil we provide for strong and rapid capillary action, and we must now check that rising soil water and prevent its escape at the surface. This we do by starting the cultivator as soon as our plants are set or perhaps even before we finish setting and break the earth in the rows between the plants with rake or hoe. The straighter our rows the closer we can cultivate and the less hand work we will have to do. We keep the cultivator and hoe going until growth stops in the fall.

The blossoms that will appear as soon as growth gets fairly started on the young plants are picked off and is attended to when hoeing. Weeds that spring up close to the plant are pulled by hand, and it will pay to remove the first few runners that form, as this will strengthen the plant and the later runners will be stronger and better. Those who are accustomed to caring for general farm crops only, where cultivation is continued but for a short season and the crop then laid aside till harvest time, will no doubt find it hard to keep up the strawberry work through late summer and early fall, but it is here if anywhere that the old adage, "a stitch in time saves nine," will apply.

Attention in Placing Runners.

If thorough work is done up to the time that runners begin to get plentiful the work for the rest of the season will be much easier, and if we want to avoid a very disagreeable job we won't let a weed get four inches high. A little attention in placing the runners will assure a more uniform stand and will result in a bigger and and better crop. Then as soon as enough plants have set to give us one plant to every thirty-six square inches of row, we keep all additional runners off, as extra strawberry plants are the worst weeds we can have in our strawberry bed. To do all this reduces the number of our fishing excursions and may interfere with a picnic or two, and perhaps the county fair, but the results next June amply repay us for these sacrifices.

In fitting the soil we add a liberal application of fertilizer made of equal parts of acid phosphate, ground bone and muriate of potash, harrowing it in thoroughly. We also make an application of nitrate of soda after the newly set plants start to grow, using this at the rate of about 100 to 150 pounds per acre and repeat this application once or twice during the growing season. In applying the nitrate it is necessary to take care that none of it comes in direct contact with the plants.

As soon as the ground is frozen hard enough to bear a team and load we draw out some clean straw or strawy manure and cover our plants, not from the cold, but from the sun. It is not the freezing that does the harm, but the alternate freezing and thawing. When the frost is out and the plants begin to grow in spring, we draw this straw between the rows, leaving the finest of it between the plants and, in fact, quite a sprinkling in the row will prove beneficial. We are going to depend on this mulch to hold moisture, keep down weeds and keep the berries clean. It takes a good mulch to put the fine, waxy finish on the fruit and we must have this finish as well as size, if we are to get top prices.

Our main planting is made of varieties that have proven reliable in our neighborhood and that produce fruit that suits our market.

The Trial Bed.

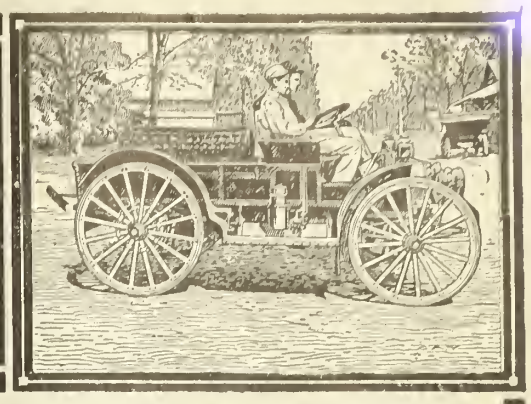
We get a few plants of several varieties that are generally well spoken of, to try out under our conditions and run chances on a couple of new, "highly puffed" varieties. A dozen plants of a variety is enough for our trial bed, as it will prove a losing proposition as far as berries go, when compared with the rest of our patch; but it pays well in showing us what varieties are adapted to our conditions. There is a great variation in the behavior of varieties under different conditions and a variety that is best in one place may prove entirely worthless somewhere else. We can even see a great difference between different fields on our own farm.

Therefore it is entirely useless to ask anyone what variety will do best. We must find that out for ourselves. Some varieties can be recommended to us as fairly certain to give good results, and among these varieties that seem to be capable of adapting themselves to conditions found over a wide area, I might mention Senator Dunlap, Sample, William Belt, Glen Mary, Brandywine, Bubach, Chesapeake, Haverland, Gandy, Michel's Early, Splendid, 3W, Saratoga, Warfield, Stevens Late and Bederwood. Still I have known every one of these to fall down under certain conditions. No variety is perfect anywhere, and none good everywhere.

G. R. S.

New York.

QUICKER TRIPS MEAN MORE TRIPS AND BIGGER PROFITS



WITH an International Auto Wagon you can make a trip in one-third the time that you can with a team. You can catch the early trains or boats and the early markets. You can go to whatever market pays you best—10, 15, or 20 miles is practically nothing for an International. And you can keep your horses working in the field. The

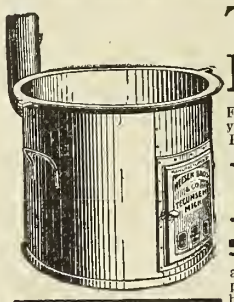
International Auto Wagon

is alwaysready,winter and summer,24 hours a day if necessary. Roads, hills, sand, or weather do not stall it—it never tires.

The wheels are sufficiently high to give abundant road clearance. The solid rubber tires eliminate tire troubles and expense. There are no delays or expense on account of punctures and blow-outs. The air-cooled engine does not freeze in winter. The International Auto Wagon will give you more service than you could secure in any other way for the amount invested. Whenever desired, it can be converted into a pleasure vehicle by adding an extra seat and top.

There are many International Auto Wagons in the hands of farmers and fruit-growers all over the country. Let us send you facts and figures showing what they are doing. Write for catalogue and full information.

International Harvester Company of America
117 Harvester Bldg (Incorporated) Chicago U S A



The Best Way to Cook Lime and Sulphur Solution

For spraying fruit trees, shrubs, etc., cook your lime and sulphur solution in a Heesen Kettle; it cooks quickest—uses less fuel, and costs least.

Heesen Kettles

are used by thousands of fruit farmers, who endorse them as the best and most practical device money can buy—not only best for cooking spraying solution, but handy for a hundred other uses. Splendid for feed cookers for stock. Burn any fuel—set on the ground anywhere—no foundation required. Sizes 15, 20, 30, 40, 55, 65 and 75 gallon. Write at once for full information and low price, or send order for size wanted.

HEESEN BROS. & COMPANY, Box 81, TECUMSEH, MICH.

Strawberry PLANTS A SPECIALTY

This is the last chance that you will have to ask for a copy of our two colored catalogue, so if you are thinking of buying plants, don't do it till you ask us to mail you a copy of this book, as it will be the means of you saving money. A postal will bring a copy to you, so do not delay, but write today.

O. C. WALLER
Box 8 Judsonia, Ark.

ROSES of NEW CASTLE

is the greatest book on the culture of Roses and other plants ever published. 86 pages, exqnisitely illustrated in natural colors. Gives lifetime experience. Tells everything about rose culture. Describes wonderful Hoosier Roses, hardy plants, bulbs, seeds, etc., world s best for home planting. It's FREE. Write today.
HELLER BROS. CO., Box 227 New Castle, Ind.

OUR HOME FOLKS

Conducted by MRS. RUTH MOTHERBY. Address all Communications to Home Editor The Fruit-Grower

Behind Time.

Is there anything more annoying than lack of punctuality? It has wrecked fortunes, lost important battles, changed the fate of nations, brought death to the helpless, and strangled domestic happiness. It is the most common of bad habits, and the one which receives least attention from mothers.

What is the use in being everlastingly behind time? Such a habit not only interrupts the plans of others, but it rasps the temper and induces inharmony. To a punctual person there are few things so exasperating as lack of punctuality in others. Everyone hates to be kept waiting; it is a pity that everyone does not feel the same about keeping others waiting. I believe that, if the celestial gates were to be closed at a certain time, and due notice were given, a great many people would not start in time to get there, and many of them would be men! Now, I know this is likely to arouse protest among the masculine readers of this paper; nevertheless, I shall stick to the proposition. I am a housewife. I know what it is to live with a man who always finds something that must be done just as he is called to breakfast! This same man never seems to enjoy a chat on the street corner as he does when my nice dinner is spoiling; and he'll come hurrying in, a half hour late, with the information that he couldn't possibly get away a minute before he did, and look grieved if I fail to accept that statement at his valuation. I've seen him run for a train until he nearly had apoplexy, and he will look really hurt when I make fun of his appearance as he pranced down the street. I always laugh at him, even when he loses his train, for he has no business being late. He wouldn't have such a habit had he been properly trained when he was a boy; but he is too old, now, to reform. It is a pity, for it is the one source of trouble between us. If ever I have children to train, I shall begin in time to make them punctual. If all mothers would do this, how much happier everyone would be.

It is not the great troubles of life that wear us out, but the little rasping, disagreeable happenings, the delays and vexations. I love my husband, but I can't forgive his mother for having been so careless in her method of training. MRS. A. S. SOLLY.

The Old-Fashioned Nurse.—3.

Scarlet fever is one of the most treacherous of diseases, as many mothers can testify to their sorrow. It is well, when possible, to put the little patient under the care of a physician, as soon as the nature of the disease is discovered or suspected, even though he may not appear to be very sick. But it isn't always possible to call a physician, and so it is wise to know what can be done without medical assistance.

There is a disease called scarlet rash that is often mistaken for scarlet fever by those who do not know that the eruption from scarlet fever can not be felt when you pass your hand over it, while a slight roughness is always felt when the trouble is scarlet rash. I've known mothers to allow their children to be exposed to scarlet fever, believing they had already had it and were immune; and then when the children were taken sick, they wondered how it could be that they should have scarlet fever twice! The fact was that they had scarlet rash the first time. I believe that is the case in every instance where they tell of a second attack of scarlet fever.

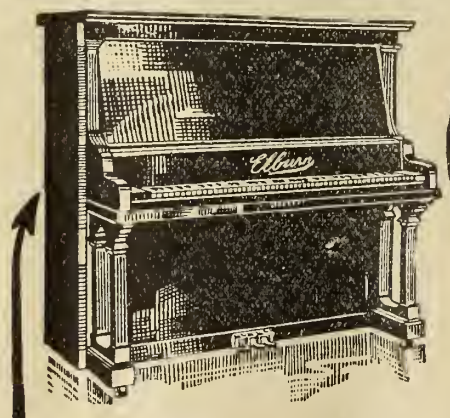
You'll find the same thing in the so-called second attacks of measles—or would if you could only get at the facts. Scarlet rash is quite apt to be going the rounds in company either with measles or scarlet fever, and some children have only scarlet rash, while others have measles or scarlet fever. But scarlet rash does not prevent these children from having either measles or scarlet fever at some later day. Bear this in mind when there is an epidemic of either disease, and so guard against mistakes when a later epidemic arrives.

Scarlet rash is uncomfortable, but not dangerous. It is usually preceded by some of the symptoms of both of the other diseases — chilliness alternated with heat, headache, the appearance of a heavy cold, irritability, deranged stomach, loss of appetite. But there is no indication of sore throat as in scarlet fever. For scarlet rash see that the bowels are kept open, give hot baths, and induce a mild perspiration, also deprive the patient of solid food for two days. That is really all the treatment necessary for scarlet rash, and if that does not suffice, be sure that you have something more difficult to contend with.

Scarlet fever is a serious proposition. Get a doctor, if you can, but if not, do not think the case is hopeless. I've taken many scarlet fever cases through without any trouble then or thereafter. On the first day the symptoms are much like scarlet rash, with the sore throat added. On the second day, if the disease is progressing naturally, the rash will begin to appear on the face and neck. By the third day, it should cover the body. Now don't worry because you treated the patient for scarlet rash, the first day; for if you were careful to guard against catching cold, that treatment was all right. Bathe the patient twice a day in warm water, under cover, and then rub a piece of warm suet, or of bacon if the suet is not at hand, over the entire body. Do this after every bath. When the skin begins to peel off, give a bath only once a day, in the evening, and apply the suet in the morning. The greatest danger from scarlet fever comes during convalescence, for then the nurse is apt to be careless and the patient takes cold, and cold at such time is likely to result in the appearance of dangerous and difficult troubles.

I begin giving the Homeopathic preparation of Belladonna as soon as I suspect scarlet fever. If it is in the neighborhood, I advise giving a dose of four pellets three times a day, even when the child does not complain, for it does no real harm, while it does make the attack lighter when the child is attacked. I also watch the throats of well children very carefully, and put on cold compresses with the first appearance of inflammation. I always use the cold compress in even the hardest cases of scarlet fever, for I have found nothing better for sore throat. In severe cases, I change the compress every fifteen minutes. When the rash suddenly disappears, as sometimes happens, wrap the patient in a wet sheet and give him all the cold water he can be coaxed to drink.

I give my little patients fruit juices to drink almost exclusively at first. I never give milk until the fever is gone, and the patient is well on the road to recovery. Neither do I give gruels made of corn meal, or any kind



This is the ELBURN H-2, the BEST PIANO Value Ever Known, for only..... $225

$6 Monthly.

Herington, Kas., May 18.

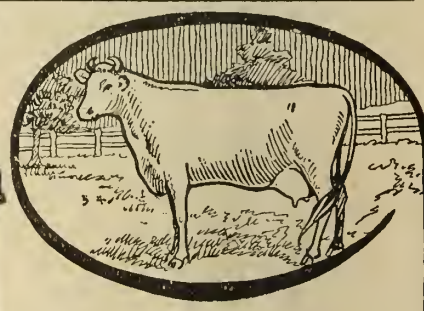
Gentlemen: Enclosed please find money order to finish paying for piano.

We are entirely satisfied with piano and with dealings with you. The piano looks and sounds as well as when we bought it and has not been tuned in the meantime.

Hoping you continued success in your business, I am, ALONZO FROST,

209 North D St., Herington, Kas.

not measure up to what we say about it, send it back; the cost to you will be nothing. We also have many bargains in Used Upright Pianos of famous makes. Write today.



Any Ordinary Cow Can Earn $6 a Month, the Amount It Would Take to Buy This Magnificent Piano

Just think, only one of your cows would furnish the small sum required to buy an Elburn. Practically no sacrifice at all. And the pleasure the piano would bring into your home would be worth twenty times this insignificant sum. Let us send you an Elburn on free trial. You won't need to pay a cent unless you are entirely satisfied with it. If all of your friends don't say it is one of the handsomest pianos they ever saw and is worth every cent we ask, you can send it back. We'll stand all of the expense.

We have hundreds of letters like the one quoted in this advertisement. Piano experts all over the country have congratulated us on being able to sell such a piano for so little.

REMEMBER OUR OFFER—We will send you an Elburn H-2, freight prepaid, for trial. You can thoroughly test it; you can have all the musicians in your neighborhood test it. And if it does

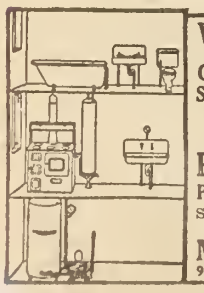
J. W. JENKINS' SONS MUSIC CO., St. Joseph, Missouri

S. S. OAKFORD, Manager

Raney Home Canner

Practical, successful, profitable for housekeepers, farmers, fruit and truck growers. Goods put up with Raney Canners have a quality and flavor secured in no other way. Complete outfits from $5.00 up, with daily capacities from 200 to 10,000 cans. The best, lowest priced and longest lasting canner on the market. Write for illustrated catalog and detailed information. We have a full line of canner's supplies at right prices.

THE RANEY CANNER CO.
Dept. 10 Chattanooga, Tenn.



Water Works FOR Country Homes $37.80
Sold Direct at Manufacturer's Prices
Also Full Line of
PLUMBING GOODS
Pumps, Windmills, Etc.
Send for Our Valuable Book. IT IS FREE.
Mo. W. & S. Supply Co.
925 S. 6th St., St. Joseph, Mo.

STILLWELL CALIFORNIA BUNGALOW BOOKS

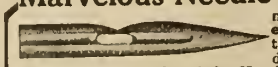
PACIFIC COAST HOMES combine individuality of design with artistic and economical construction. Western Homes are of absorbing interest in exteriors and plans. Genuine Bungalows especially appeal to everyone, and are a popular and profitable form of investment. Our two books contain plans, descriptions and cost estimates of low-cost houses, suitable for any climate.

"Representative California Homes."—Price, 50 cts. A book of 50 Bungalows, Cottages and two-story residences of 5 to 10 rooms, costing $1500 to $6000.

"West Coast Bungalows."—Price, 50 cents. A book of 50 one-story, very artistic, inexpensive Bungalows of 4 to 6 rooms, costing $500 to $2,000.

BUILDER'S SUPPLEMENT NO. 1, Price 10 cents. Free with Orders for two books. Remittances of coin or money orders preferred. Sample pages free.
E. W. STILLWELL & CO., Archts., 2170 Henne Bldg., 122 Third St., LOS ANGELES, CALIFORNIA

Marvelous Needle New eye sewing machine needles, Thread-easy, guaranteed; thread it in the dark, saves work.



Send 10c for 2 samples, 6 for 25c. (stamps or silver). Give size thread and name of machine and dealer's name.
Dep't 3033
Northwestern Needle Co., Minneapolis, Minn.

Advertisers like to know what paper is giving the best service for money expended. You can aid them materially if when writing, you mention **The Fruit-Grower**

Trinidad Lake asphalt
Asphalt-saturated wool felt
Trinidad Lake asphalt

Genasco
THE TRINIDAD-LAKE-ASPHALT
Ready Roofing

Trinidad Lake asphalt is what makes roofing last.

Man has never been able to produce its equal any more than he has succeeded in making a real diamond.

This *natural* asphalt contains natural oils which stay in the roofing, and give it life to resist rain, sun, wind, heat, and cold—and it does not crack or leak.

Genasco is the roofing for every building on the farm. It has different surfaces—mineral or smooth. Comes in rolls. Ready and easy for anyone to lay. Ask your dealer for Genasco. Write for samples and the valuable Good Roof Guide Book—free.

The Kant-leak Kleet, for smooth-surface roofings, prevents nail-leaks and securely waterproofs the seams without cement.

The Barber Asphalt Paving Company
Largest producers of asphalt, and largest manufacturers of ready roofing in the world.
Philadelphia
New York San Francisco Chicago

Allcock's PLASTERS

For *Coughs and Colds* put one on chest and another between shoulder blades. It breaks up the congestion (the cause of colds) before it can reach the lungs.

Constipation, Biliousness, Indigestion, etc.
Brandreth's Pills
Entirely Vegetable.

SUNSHINE LAMP FREE

to try in your home 15 days. Incandescent 300 Candle Power. Gives better light than gas, electricity, acetylene, or 15 ordinary lamps at one-tenth the cost. For homes, stores, halls and churches. Burns common gasoline. Absolutely safe.
COSTS 1 CENT PER NIGHT
Guaranteed 5 years. No wick. No chimney. No mantle trouble. No dirt. No smoke. No odor. A perfect light for every purpose. Take advantage of our 15 day free trial offer. Write today **FACTORY PRICE**
Sunshine Lamp Co., 87 Factory Bld., Kansas City, Mo.

of cereal, for I think they tend to increase the fever; but fruit juices allay fever, keep the bowels open, and are usually taken when nothing else tastes good. I find that tomato juice is really the best of drinks, for a small quantity will cool a parched mouth. It should be carefully strained before given, to eliminate all seeds or solids. Even the patients who have never liked tomatoes soon learn to call for tomato juice when parched with fever.

AUNT KETURAH.

SOME GOOD FISH RECIPES.

Baked Fish.

Clean the fish, removing head, fins and backbone; wash it thoroughly, lay it flat in a well-greased dripping pan, skin side down, and add salt sufficient to season, and a few spoonfuls of water. Let it bake until well done, when it should be nicely browned. Remove it carefully to a platter and serve with or without sauce, as preferred. If sauce is liked, add butter and sweet cream and set it in the oven a few minutes before serving. We think this much nicer than the elaborate sauces so frequently served with fish in the fine hotels.

Roast Fish.

Rinse the fish in hot soda water, and fill it with dressing made from stale bread moistened with egg and melted butter; add a pinch of sage and a spoonful of thick sweet cream. Place strips of salt pork in the roasting pan, under the fish, also over it, and baste the fish frequently while it bakes.

Broiled Spanish Mackerel.

Select a large fresh Spanish mackerel, draw by the gills, trim off the head and fins, slit open down the back and remove the spine; season with salt and pepper, baste with oil, put in a double heated gridiron and brown slowly until a nice color. Slide on a dish, the inside uppermost; spread a little melted butter over, surround with quartered lemons and serve with the following sauce: Steep in cold water, slit open, pare and remove the bones of eight anchovies, wipe dry and pound to a pulp in a mortar; add two egg yolks, dilute slowly and carefully with two gills of sweet oil and two tablespoonfuls of vinegar; add white pepper, nutmeg and chopped parsley; mix well and serve cold.

Fish Cakes.

Boil together one quart of potatoes cut in small pieces, one coffee cupful codfish flaked, drain well, mash and add small piece butter, two tablespoonfuls milk, one beaten egg; pepper to taste. Form into balls with spoon against side of dish, roll in beaten egg and fry in deep fat.

Salmon Souffle.

Remove all the bones, skin and oil from a can of salmon, then beat it with a fork until it is light. Now add three well-beaten eggs, and pepper and salt to taste. Stir cracker crumbs into half a cupful of milk, and spread over the top. Stick bits of butter over all, and bake about twenty minutes in a hot oven. If liked, add a few cracker crumbs to the fish, but if you do this roll them fine and stir a little baking powder into them before adding them to the fish.

To Boil Fish.

Clean the fish, let it lie in cold salt and water for a few minutes to make the flesh firm, then wrap it closely in cheese-cloth and place it in a kettle of nearly cold water. If it is of medium size it should cook for twenty minutes after it begins to boil. If it is not very tender, add a wineglass of good vinegar to the water in which it is boiled.

MRS. ANTHONY HASCALL.

A Cure for the Drink Habit.

We all know there are good men who drink more than they should, and who would be very glad to get rid of the habit, if only they knew how. My husband was one of that class. He is the best man that ever lived, but when the craving for drink came over him, he could not resist, even though he knew it nearly broke my heart. When it was over, and he was himself again, he was plunged into the depths of remorse, and he was always so ill that he could not understand how he could ever again be tempted.

One day an old doctor advised the following remedy, and we began it while he was still sick from his indulgence. Take two pounds of bayberry bark, one pound of ginger root, and two ounces each, of cloves and cayenne pepper; pulverize all, mix well, and it is ready. When it is to be served, put one-third of a teaspoonful of this powder and a teaspoonful of sugar into a teacup, fill the cup half full of boiling water, and let it stand until the strength has been drawn from the powder. That only requires a few minutes. Now fill the cup with hot milk—not boiled, and serve hot. A warm, healthy glow spreads from the stomach over the entire system, accompanied by a desire for food, instead of liquor. This can be taken several times a day, and will probably be called for as often as that at first; but the dose should be gradually lessened as the patient becomes stronger and the craving for drink less intense. I believe that anyone who really wants to break himself of the habit of taking strong drink can do so by means of this tea. My husband has been completely cured for several years, and other friends have tried it with the same happy results.

NO NAME.

The Folly of Overworking.

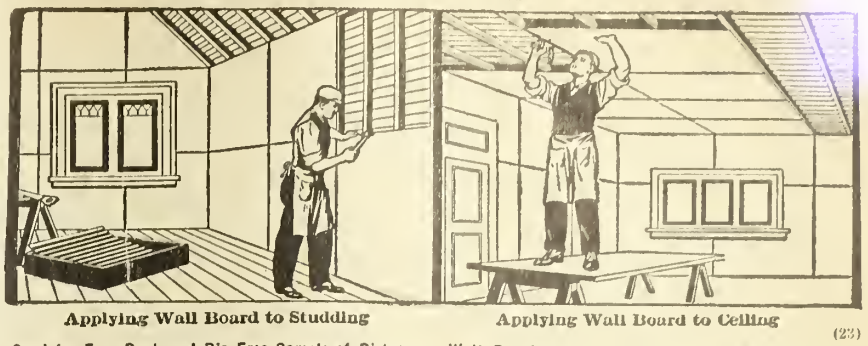
I have neighbors who are actually working themselves to death, and they seem to take a mournful pleasure in so doing. They look old for their years, and act like their grandparents. They are always tired, and always complaining because they are tired, yet in the next breath boasting of the great amount of work they have accomplished. They have little time for reading, or amusements, and less inclination because they are so worn out that nothing seems really desirable but sleep; yet they complain because their lives are so monotonous.

Now I think it is wrong to overwork, unless one is absolutely obliged to, and in nine cases out of ten that is not the case. In a majority of instances, at least one-third of the work done by the habitually overworked might be left undone without anyone suffering, or might be delegated to some one else who hasn't enough to do.

I believe it is wrong for anyone to do work that some needier worker might be paid for doing. Anyone who can possibly hire his work done, is in a class where it is his duty to think of those less fortunate than himself.

I have no patience with women who will work themselves sick to save a little money for a missionary box, as

This Beats Plastering—Costs Less!



Applying Wall Board to Studding — Applying Wall Board to Ceiling

(23)

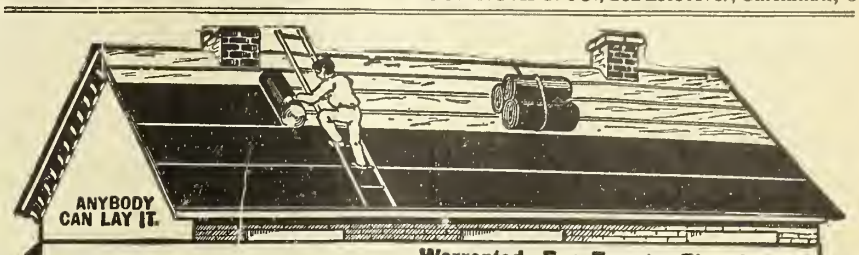
Send for Free Book and Big Free Sample of Bishopric Wall Board. Comes to you in sheets 4x4 feet, all ready to nail on studs. Any man who can drive nails can put on Bishopric Wall Board.

Build right through the winter and save a month's time on your house. Bishopric Wall Board is ready at once for paper, paint or burlap. Makes handsomest walls, ceilings and partitions in residences or cottages. Ceil attic or cellar. Make any room in any farm building proof against cold, wind, dampness, rats or other vermin. Rats positively cannot go through Bishopric Wall Board. The No-Warping, No-Swelling, No-Cracking Wall Board. Bishopric Wall Board is toughened asphalt mastic in which kiln-dried dressed lath are imbedded. It is surfaced with strong, well-sized cardboard. Lath is the only thing that makes Wall Board rigid and keeps it flat. Bishopric Wall Board is the only wall board made with lath.

BISHOPRIC WALL BOARD
Better Than Plaster—Costs Far Less to Put On

Price $2.50 per 100 square feet, $6.40 per crate of 16 sheets, 256 square feet, f. o. b. Cincinnati. Write for our Book of House and Home Plans, showing Bishopric Wall Board construction. Send 6 cents in stamps to cover cost of wrapping, mailing, etc. With the Book we will send you a FREE Sample of the Bishopric Mastic Wall Board.

Address, THE MASTIC WALL BOARD AND ROOFING MFG. CO., 282 Este Ave., Cincinnati, O.



Rubber Roofing

Warranted For Twenty-Five Years.
FREIGHT PAID To Any Station East of Rocky Mountains, except Texas, Okla., Colo., N. D., S. D., Wyo., Mont., N. M., La., Ga., Ala., Miss. and Fla., on all orders of three rolls or more. Special Prices to these States on request.

ONE-PLY - - - - Weighs 35 lbs., 108 Square Feet, $1.10 per roll.
TWO-PLY - - - Weighs 45 lbs., 108 Square Feet, $1.30 per roll.
THREE-PLY - Weighs 55 lbs., 108 Square Feet, $1.50 per roll.

TERMS CASH: We save you the wholesalers' and retailers' profit. These special prices only hold good for immediate shipment.

Indestructible by Heat, Cold, Sun or Rain.

Write for FREE SAMPLES or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to Southern Illinois National Bank.
CENTURY MANUFACTURING COMPANY, Dept. 261 East St. Louis, Ills.

$584.00 Buys All Lumber, Lath

Shingles, Doors, Windows, Mill Work, Hardware and Nails needed to build this Modern Four-Room Bungalow, including Architect's Blue Print Plans and Complete Specifications.

Size—24x28, 4 Rooms and Bath

Get Our Book of Designs Our Design Book contains more than 50 Designs of Houses, Bungalows, Barns, etc., for which we furnish all Brand New Guaranteed Material.

Mailed on receipt of 10c Postage.
Read Our Free Building Plan Offer
GET OUR WHOLESALE PRICES ON LUMBER, MILLWORK, ROOFING, PLUMBING AND HEATING PLANTS
FREIGHT PREPAID
CHICAGO WRECKING COMPANY
4100 Gravois Ave., St. Louis, Mo.
Mention The Fruit-Grower.

Make Your Own Gas

The Detroit Combination Gas Machine provides the Home with a **Satisfactory Gas Supply.**

Gas to Light with.
Gas to Cook with.
Gas to Heat Water for the bath, laundry and other uses common to city coal gas, at no greater cost.

On the market over forty years. More than 15,000 in daily use.
Our catalog will interest you. Write today for copy, and names of users in your vicinity.
DETROIT HEATING & LIGHTING CO.
472 Wight Street, Detroit, Mich.

many do. The poor we have always with us, and our duty begins at home. We do best when we give work to those who need it and thus help them to keep a self-respect that is killed, sooner or later, in those who must accept charity. If I can save money by greater simplicity in dress, or by dispensing with unwholesome dainties on our tables, and hire someone to help me about my work, I feel that I am doing good, not only to that someone who needs the work, but to my family who need the best there is in me, and to myself, who must have a certain amount of time for study and recreation, in order to give that best. EMILY MAYHEW.

Uncommon Recipes.

Pin these recipes where you can find them when you're tired of cooking the same old thing! I've tried them all, and pronounce them good. If you don't agree with me, then send some of your favorites, and let me try them.

Rice Pilaff.

Wash one cupful of rice, and brown it in hot butter; then add two cupfuls of cold meat, cut in dice; half a pint of stewed tomatoes, and half a pint of water. Season to taste, and stew until the rice is thoroughly cooked.

Potato Scones.

Take a pint of well-risen bread sponge, add a spoonful of melted butter, two well-beaten eggs, a pinch of salt and enough warm, mashed potato to make a dough stiff enough to roll out Roll to one-half inch in thickness, then cut into cakes and bake.

Spanish Salad.

Mix together one cupful cold chicken, diced; two cupfuls chopped celery; one-half cupful chopped green peppers; one cupful cucumbers, cut in cubes; one cupful English walnuts, broken into small pieces; one cupful canned French peas, and one cupful mayonaise salad dressing. Serve, very cold, on crisp lettuce leaves, garnished with Spanish peppers.

Pork and Barley.

Put a shoulder of fresh pork on to boil in salted water. When it is very tender, pick the meat from the bone, chop it fine, and return it to the liquor in which it was boiled, with ten cents worth of pearl barley, and a pinch of sage. Set it on the back of the range where it will cook slowly and not burn and allow it to simmer until the barley is tender.

Chicken Boudins.

To one pint of cold minced chicken, allow one tablespoonful each of butter and chopped parsley, half a cupful each, of dry bread crumbs and water, the whites of two eggs, a quarter of a grated nutmeg, a pinch of sage, and salt and pepper to taste. Heat the butter, add the bread crumbs and stir over a hot fire until they begin to brown, then remove them from the fire and add the water, then the chicken and seasoning, and lastly the egg beaten to a stiff froth. Mix well, then pour into a shallow dish and bake in a moderate oven for half an hour. Serve with cream sauce, or chicken gravy. Or it may be served cold with salad dressing. It is delicious any way it is served.

AUNT RHODA.

The Social Hour.

The average parent is very careless in the matter of the home vocabulary; yet nothing better illustrates the status of the home life than the speech of the children. Parents say that they pay teachers to instruct their children, but it is a fact that no amount of teaching will serve entirely to eradicate the careless speech of the home. I know men who are holding important positions in life, college graduates, too, who never become greatly interested in a topic under discussion without relapsing into the illiterate speech of their early home life. Early impressions are so lasting! It does seem to me that parents who are ambitious for their children should remember this, and do all they can to improve the home vocabulary. — Teacher, Kansas City, Kansas.

Nothing makes so great a difference in a woman's looks as the way her hair is dressed. So many women do not know what is the most becoming way to dress their hair; and others do not seem to care so long as they can dress it in the prevailing style. If one has found a pretty and becoming way to dress the hair, it is a mistake to adopt some other method. Cling to that which suits your face no matter how old fashioned it may be; but if it doesn't suit your face as well as some other style would, then don't be afraid to change simply because "you've always worn your hair one way." As a rule the simplest styles are the most becoming—more especially if you have a well-shaped head. If it is not well-shaped, consider its deficiencies carefully, and try to so arrange the hair as to conceal them. Rules for hair-dressing can never be successfully given. Every woman should be a law unto herself in this respect; but there are a few general rules that may help. For instance, a high, narrow head requires puffs at the sides and loose curls on the temples; a low forehead requires a pompadour, not stiff and precise, but made to appear as if the hair, slightly waved, were carelessly drawn back from the face. When the back of the head is unusually full, arrange the hair in a knot above or below the fullness; if it is too flat, cover with puffs and braids. If the top of the head is too flat, wear a high pompadour; if the head is too short from forehead to crown, piece it out by doing the hair high at the back, and allowing the pompadour to project a little over the forehead. An oval face nearly always looks well with the hair parted in the middle, waved, and brought down over the ears. A round face seldom looks well with parted hair but if it has a piquant expression the hair may be parted on one side to advantage. You see, it all resolves itself into a puzzle, especially when one has no one of really good taste to help in choosing a style, but it pays to keep at it until the right one has been found.—Marie Sias.

When wondering how you can beautify that spare room, why not consider applique work. It is really quite fascinating, and about the most comfortable kind of fancy work I know of. It gives such an elaborate effect for a comparatively small outlay of time and money. While care and attention to details are required, a good needlewoman will only need a little practice to do it beautifully. At present, I am making window draperies, a table cover, bureau scarf, etc., out of white pique upon which I am putting borders showing quite an elaborate green vine. I hunted some time before I found striped cretonne showing the patterns I wanted. Some workers buttonhole the edges of the applique work; but I am concealing mine under a narrow white embroidery braid. I cut the pattern out first, then baste it in place; but where the pattern to be appliqued is cut from goods inclined to ravel, it should be buttonholed down and then cut. I am going to have a very lovely green and white room when this is finished. The spread and pillow shams are of very heavy white duck, finished with flounces edged with the applique work. —Mrs. Tom Snider.

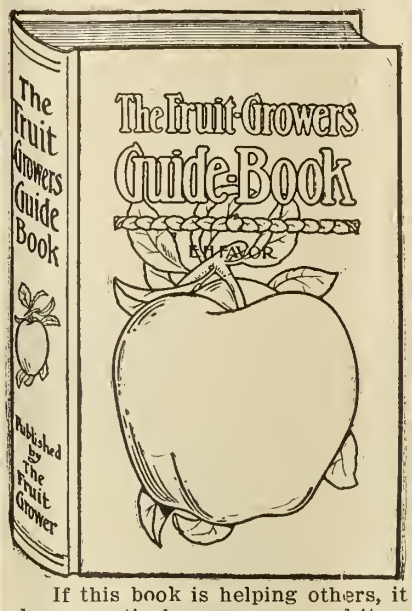
When building your new home, insist that the lower joints, and all places where water is apt to collect, shall be covered with water-proof glue. It is a great help in preserving lumber, and it is not very expensive. It is made by dissolving one pound of white glue in two quarts of new milk. You must not use milk that will not keep sweet at least twenty-four hours. Let the glue soak over night in the milk, and the next morning bring it to a boil by setting the dish of milk in a pan of boiling water. No matter how thin it may look to you, do not add more glue. I have used this glue very successfully in mending rubber goods, also in patching men's wear. Apply it to the edges of both patch and garment and press it with a moderately hot iron. For woodwork apply it with a brush before painting. Don't neglect to put this on your porch, if you don't use it anywhere else. It will save its cost a dozen times in the added length of time your boards will wear.—Sarepta Langdon.

Last fall, I found some extra good stockings for sale at a very low price. They were in light shades to match

Every Fruit Grower Should Have This Great Book

Don't waste your time trying to solve problems which others have already figured out. You can learn very quickly what are the most approved methods of handling your orchard, fighting bugs, cultivating, pruning, packing and marketing your fruit, in The Fruit-Growers Guide-Book.

This handy reference book has already had a remarkably heavy sale, and is well recommended by all who have seen it. Here is what a few practical fruit men have to say about it.



Contains Many Useful Hints—I find The Fruit-Growers Guide-Book very valuable, as there are a great many useful hints and suggestions in it.—A. McAuley, Mgr. H. R. Edwards Fruit Farm, Ohio.

The Book He Needed—I am just in receipt of The Fruit-Growers Guide-Book. I have read a portion of it and find that it is exactly the book I have been in need of for a long time.—Leon D. Munger, "Munger's Star Orchard," Wash.

Gets Right to the Point—I think the Guide-Book gets right down to the point every time, and explains things so clearly that even a novice in fruit-growing can understand. The Guide-Book has made a lot of things clear to me that I have failed to find in the writings of other learned men.—Geo. W. Campbell, Texas.

What One of the Authors of "Fruit-Growing in Arid Regions" says—I have gone over this pretty thoroughly, and feel safe in saying it is one of the most reliable books that I have seen, written especially for the practical fruit grower.—O. B. Whipple, Horticulturist, Montana Exp. Sta.

If this book is helping others, it will surely help you, and when the above practical men recommend it, you may be assured that this book will be a good thing for you.

It contains nearly 300 pages of reading matter, which tells you what to do and how and when to do it. It is handsomely illustrated and printed on a good quality of book paper.

The price of this book, handsomely bound in golden-brown cloth, is $1.00, postpaid.

We can also furnish this book printed from same plates, but on a lighter paper and with paper binding, at 50c, postpaid.

Send in your remittance at once and secure a copy of The Fruit-Growers Guide-Book. Address

The Fruit-Grower, St. Joseph, Mo.

Read Farm Journal

Here is an opportunity for Fruit-Grower readers to secure, free of charge, a two-year subscription to Farm Journal, published at Philadelphia, Pa., and one of the best general farm papers in existence. Here is what we offer you:

If you will send $1.00 only for a year's subscription to The Fruit-Grower, and ask for the "Farm Journal Club," we will send both papers, as specified above. This offer holds good until April 1st only. When you write, address Farm Journal Club Department,

The Fruit-Grower, one year.....$1.00
Farm Journal, two years..... .35
$1.35

Both for $1.00

THE FRUIT-GROWER, St. Joseph, Mo

Townsend & Wyatt Dry Goods Company

Our Piano Department has been a success from the day we opened. We find that the public likes to save money when they make a purchase for as large an amount as this.

On account of the small expense in operating this department in connection with the rest of our store we can save you from fifty to one hundred and fifty dollars on a piano.

New Pianos are Fully Guaranteed from one-hundred and nineteen dollars up

"Style 'F' Hillsdale."

The above cut represents the popular Style "F" Hillsdale. This piano bears our own name on the metal plate. It is manufactured especially for us.

The reputation that we have established after being in business forty-four years, is behind these instruments. The sweet round, full-toned Hillsdale will satisfy you, no matter how critical you are. Its plain, square lines will please the eye.

It is useless to pay $375 for a piano no better, when you can have this piano **Direct from the Factory to You**, no matter where you live, freight prepaid, new scarf and stool furnished, for $225 cash, or payments, if desired, 6 per cent on deferred payments. **Write Us Today.**

Townsend & Wyatt D. G. Co.
ST. JOSEPH, MISSOURI

FREE WATCH RING & CHAIN

We positively give to BOYS and GIRLS a BEAUTIFUL American-Made stem-wind, stem-set watch with handsomely designed case, proper size. GUARANTEED 5 YRS. Also dainty ring, set with three sparkling stones, for selling 20 jewelry articles at 10c each. Order jewelry today. When sold send $2 and we will send watch, ring and chain. We Guarantee Satisfaction.
Dale Watch Co., Dept. 48 Chicago

the prevailing colors of a year ago, and were no longer in demand; so they were put on the counter for sale at less than one-third their value. I bought all I could afford, and colored them black, using a prepared dye recommended for cotton. I had fine success. They are a lovely blue-black and do not "crock" a particle.—Katharine.

Here is a suggestion that I have not chanced to see in our department. When making cuttings from house-plants take them from the lower part of the plant. They will not rot as easily as slips taken from the upper part. Cut the slip off close to the main stalk and stick it into damp sand. The sand should be just damp, not wet, or the slip will rot. Cuttings cannot stand much water, either in sand or soil, but neither can they live if the ground is dry. A teaspoonful of camphor added to a quart of warm water will kill earth worms in your flower pots, and will benefit the plants. The soil should be quite dry when the camphor is applied.—Aida Fontaine.

Stomach Trouble.

When I offered to give my castor-oil remedy for stomach trouble to any who might inquire, I little dreamed that I'd get so many letters as to give our post office rating quite a boost! Does all the world have stomach trouble? It looks that way; but all varieties of stomach trouble won't yield to the castor-oil treatment. I see I've got to write quite a long letter on this subject. It's a good joke on Mrs. Motherby, for she so carefully limited me to just so many letters and so many words in each! And I was born garrulous, so my friends say!

Now about that castor-oil treatment. It is very simple. Begin by taking a tablespoonful of castor-oil before going to bed. If that does not move the bowels freely, take two tablespoonfuls the next night. If necessary take three the next night. Keep on, until you are sure the body has had a good cleaning out. Then begin taking one teaspoonful every night, keeping it up for at least six months. This does not act as a physic, but it heals. The bowels gradually become normal, and the stomach is made well. The old doctor—long since dead—who told me about this, said there was nothing so healing to the digestive tract as castor-oil. When stomach and bowels become inflamed, this will cure if persisted in long enough. No matter if you do think it has made you well in less time than that, don't stop taking it. You will feel better, but it takes a long time to heal perfectly.

I have been asked if olive-oil was not as good. I have not found it so. I believe, with my old friend, that nothing is as healing as castor-oil. Remember, one teaspoonful each night, after the first; no more, no less. A good way to take it is to squeeze a little lemon juice into a tablespoon, then put in the oil, and squeeze on a little more of the lemon juice. Now put the spoon as far back on the tongue as you can, and pour out the contents. You'll never know from the taste, that you've taken castor-oil.

This remedy is most efficacious in cases of stomach trouble that are accompanied by a tendency to constipation.

As you doubtless have been told, most cases of stomach trouble are caused by overeating. You may doubt that, because you are a light eater, and suffer, when other members of your family eat twice as much and do not suffer at all. But remember that no two stomachs are exactly alike. You probably do not need half as much as you eat. It is also likely that what you eat is not at all what your body requires. To work a cure you must study your own stomach. No one else can do it—not even a doctor who calls himself a specialist on stomach troubles. He has to take your word for it, you know. I do not believe in much medicine for stomach troubles. I was born with that trouble, inherited it from both sides of the house, and I've had experience enough to fill a book. I've patronized doctors, and bought patent remedies, and done all the other foolish things. I simply couldn't believe that I was overeating, because I ate less than anyone I knew. All the same, I was giving my stomach more than it could do. When you reach that decision, do as I did, and give your stomach a rest.

Buttermilk Diet.

For six weeks I took nothing but buttermilk. Yes, I did allow myself a cup of coffee in the morning and a cupful of hot soup at night, because I have a cold stomach and it requires something hot. But I did not take even a bite of cracker during that time—nothing solid whatever. I drank all the buttermilk I could hold. I found that the churned buttermilk was not as good for me as that I made every morning by putting a buttermilk tablet into a quart of fresh milk. These buttermilk tablets are found at drug stores. They have another name, but I don't recall it. Ask for buttermilk tablets, and you'll get them. Directions for making the buttermilk come with them. This "made" buttermilk is better because it contains no lumps of butter, and does not become bitter after standing, as churned buttermilk does. It is more like sour milk. Beat it well with an egg beater before taking it and it will taste better and feel lighter in your stomach. It is very soothing to inflamed stomachs. It will give your stomach a chance to get well. It will give it a much needed rest. And you will not starve—take my word for that. I worked every day while taking this treatment and never felt better in my life. At first I was dreadfully hungry—felt as if I could eat old leather—but that wore away, and I could sit at the table with the family and sip my buttermilk while they ate all manner of good things, and never once be tempted. At the end of the six weeks I had lost fifteen pounds of superfluous flesh and had the finest complexion of my whole life. I felt young. But I went back to food because I had lost as much flesh as I wanted to lose—not because I was weak, for I was not. At first, I could drink four quarts of buttermilk in a day, but gradually I took less and less until at last I was taking only five or six glasses a day. You see, I took the large quantity at first not so much because I needed it as because I was afraid I'd get hungry if I didn't. That is the trouble with most people, I find. They are afraid they'll get hungry if they miss a meal! And they keep thinking about it until they are nearly starved. Now the way to do is to work. Get interested in something else and forget that you have had nothing but buttermilk for several days. After the first week you won't even think about it.

You will probably notice a queer, white—very white—coating on your tongue, in about a week; but don't let that worry you. It will go off when your stomach begins to heal.

Drink Hot Water.

I found that it was best to drink hot water instead of cold while taking the buttermilk treatment to keep my stomach warm. You might find it that way, also. I also found that I had to take a tiny pinch of soda in the hot water, occasionally, to counteract the acid of the buttermilk. I took no other medicine; didn't need it; but a friend of mine took phosphate of soda every morning.

When one is suffering from any kind of stomach trouble, there is nothing better than a rest. That is what your stomach needs. And the best way to get it is to live on a liquid diet for a time. Some can take milk; others can live on coffee made from toasted bread, and poured over cream. The various kinds of prepared foods for invalids and babies are good. I find that hot malted milk agrees with almost everyone. Now if you are absolutely sure that you have to eat in order to live suppose you try taking malted milk for breakfast and nothing else. After awhile take it for luncheon, or supper, also. You will discover that you can get along nicely on one meal a day. Perhaps you will realize that you are feeling better; if so, drop all the solid food for one day, next time for two days, and so coax yourself along. As for me, I tried that, and then got disgusted with myself and went at it in earnest.

What most people who are looking for cures for stomach trouble really want is some remedy that will allow them to eat whatever they may happen to fancy, at any old time, and as much of it as they can hold. If you can't fill that bill, you are no good as a doctor or nurse. Well, it can't be done. You can take something that will paralyze your stomach so it won't cry out when you abuse it, but you'll pay for it later on. You've simply got to let it rest once in a while. You've got to discover what sort of fuel it can use to advantage, and how small an amount it can get along with. And when you have learned that, you've got to act accord-

Victor-Victrola

With the Victor-Victrola IV at $15 and others gradually ranging up to the magnificent Victor-Victrola XVI at $200, why should you longer deny yourself the pleasure that comes from their possession?

These wonderful instruments bring right into your home all of the world's best music, sung and played by the world's greatest artists.

All the beautiful sacred hymns such as "Nearer My God to Thee", "Onward Christian Soldiers", "Lead Kindly Light", sung by noted soloists and famous choirs—sung as you have probably never heard them sung before.

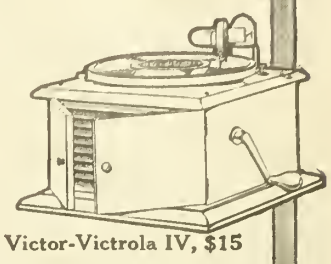
All the entrancing music of such celebrated organizations as Sousa's Band, Pryor's Band, Victor Herbert's Orchestra.

All the gems of song from the sparkling musical comedies that are captivating thousands in the theatres along Broadway.

All the superb art of such eminent instrumentalists as Paderewski, Kubelik, Mischa Elman.

All the great operatic arias sung by such famous grand opera stars as Caruso, Melba, Tetrazzini, Schumann-Heink, and a host of others.

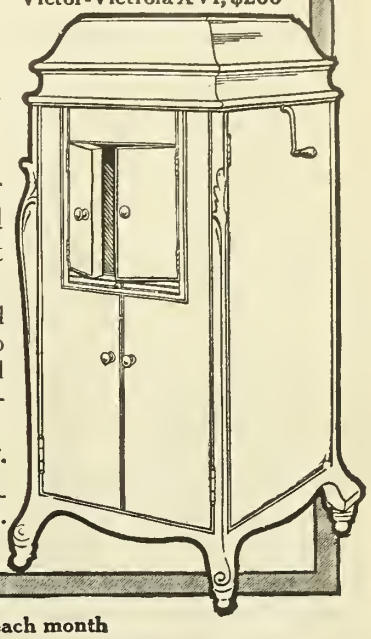
Whether the home actually feels the need of music, or whether it is already gay with melody, no home can afford to be without the exquisite music produced by this greatest of all musical instruments.



Victor-Victrola IV, $15

Victor-Victrola VI, $25
Victor-Victrola VIII, $40
Victor-Victrola IX, $50
Victor-Victrola X, $75
Victor-Victrola XI, $100
Victor-Victrola XIV, $150
Victors $10 to $100

Victor-Victrola XVI, $200



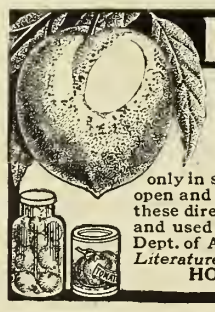
Any Victor dealer in any city in the world will gladly play any Victor music you wish to hear and demonstrate to you the wonderful Victor-Victrola. Write for the handsome illustrated Victor catalogs.

Victor Talking Machine Co. 23rd and Cooper Streets, Camden, N. J.
Berliner Gramophone Co., Montreal, Canadian Distributors

Always use Victor Records played with Victor Needles—there is no other way to get the unequaled Victor tone.

Victor Steel Needles, 6 cents per 100. Victor Fibre Needles, 50 cents per 100 (can be repointed and used eight times)

New Victor Records are on sale at all dealers on the 28th of each month



HOME CANNING

MAKE YOUR SURPLUS FRUITS AND VEGETABLES EARN HANDSOME PROFITS

Great demand for goods canned at home. We can furnish you with a complete canning outfit just like those used in the largest canning factories, only in smaller sizes—even Kitchen Outfits. Operated both open and under pressure. Evaporaters and cookers. Order these direct from us and save middleman's profit. Adopted and used by the Girls Tomato Clubs, Members in the U. S. Dept. of Agriculture. *Send us a Card for Free Descriptive Literature and Price List.* Good agents wanted.

HOME CANNER COMPANY, Hickory, N. C.

ingly, no matter what you may prefer, or what someone else can do with his internal machinery. If you don't you will die of stomach trouble, or of some disease that takes advantage of your weak stomach.

After a course of liquid diet don't drop it all of a sudden and go back to your former menus. Begin with one very light meal a day—choosing the foods that you know agree with you. In a week, take two meals—then three if you must. But it is my belief that most people really thrive best on only two meals a day. I like my breakfast between ten and eleven o'clock, and my dinner at six.

There is one form of dyspepsia that simply won't tolerate any liquids at mealtime. I think one of my correspondents is troubled in that way. Try going without anything to drink at mealtime. Take a glass of water either hot or cold, on arising; two glasses in the middle of the forenoon; two in the middle of the afternoon, and two on going to bed—if you do not go until at least two hours after eating. I have known this simple remedy to cure many cases of dyspepsia, even without dieting. Those having this form of dyspepsia should avoid soups, fruit ices, ice cream, lemonade and soda water.

Where there is much gas on the stomach, avoid all starchy foods. I have found that to make one meal on some of the breakfast foods for sale, any of them that can be eaten dry, is helpful in such cases. Dry toasted corn-flakes, puffed rice, puffed wheat, etc., taken without cream or sugar, and chewed well, make a healthful meal. You are not likely to overeat and that is another point in favor of such foods. Popcorn is excellent.

One correspondent complains that she can't take anything with vinegar on it or in it without suffering great pain. Well, then, let vinegar alone. Your stomach is telling you plainly enough that it was not made to digest vinegar, and there is food enough in the world without making it take what is poison to it. Use lemon juice instead of vinegar, and avoid the foods that call for vinegar and allow of no substitute. You'll have to come to it, sooner or later; so why not bow to the inevitable before you've made such a wreck of your stomach that nothing will agree with you. I'm simply crazy for eggs, and I crave bread and milk—could eat it every day and be happy, but my stomach won't allow me to do it. If I eat eggs once in a fortnight, and milk once a week, I can get along all right, but oftener than that brings a peculiar cumulative effect that spells sick headache every time. It is easier to go without milk and eggs than to have sick headaches or take medicine. It is safer, too. Yet, while sweet milk disagrees with me, I can live on buttermilk and never realize that I have a stomach.

You see, it is very difficult to prescribe a diet for anyone. Most doctors would declare that anyone could take eggs and milk, yet I know that isn't so. And if I were to try to outline a diet for those who have written asking me to do so, I should have to mention the things that are usually prescribed, and that might not suit your individual case at all. Your doctor would be likely to do the same thing unless he had an opportunity to make a careful study of your case, and, as I have said before, you can do that for yourself.

Now if I can help you any more, and Mrs. Motherby doesn't get after me with a broom, why, I'll do my best. AUNT KETURAH.

A Fruit and Egg Farm.

When my father started his business about thirty years ago he kept fancy stock—fowls, peacocks, turkeys, ducks, pigeons, etc., which he took to the various fairs in Maine, New Hampshire, Massachusetts and further south. He won many cups, silver medals, etc. This was found too much labor for the small profit, so he gradually worked into the poultry business, at that time carrying Plymouth Rock strain entirely. For several years the young birds were raised here, and from time to time young apple trees were set among the henhouses. The oldest of these trees are now about thirty years of age. After a time it was found unprofitable to rear the young birds here, owing to their various enemies and the number of cockerels, so that about twelve years ago another method was adopted. This brings up to the present time.

We now carry from 4,000 to 8,000 birds each season, this year having 4,500. These are mixed, standard and pure bred. Our agents understand that we accept no cockerels or inferior stock and such are always returned. Our pullets are purchased in Maine, New Hampshire and Vermont, and we have one agent in Canada. No pullets are taken from the southern states, as we find they do not become acclimated. We buy these by the pound, at prices which average about eighteen cents, and the pullets weigh from one to four pounds. All of these are placed in houses in October where they are to remain until the following October, and after the yearlings are sold the houses are thoroughly cleaned and made ready for the new stock, although in addition the houses are cleaned also in spring and summer. As we are in the business for eggs exclusively, we find it unprofitable to let the hens run, as they not only steal their nests but foxes, hawks and other pests carry away a large number. For one year the hens do just as well in the houses, but we do not find it profitable, or recommend that they be kept for a second season.

The Houses.

Each of our houses are eight feet square and eight feet high, with a double floor, and with open fronts the year around. These houses are large enough for ten or twelve birds, and all of them face the south and are about a foot off the groud on corner foundations. Each house is provided with a sand box in which fresh sand is placed every two of three weeks, two nest boxes, a shell box, feed box and setting crate. The floor is covered with a litter of sand and sawdust. Fresh water is given each day, placed in a pan on a shelf outside each house. In the winter snow is given, as the water freezes too quickly. The shell mixture is made of charcoal, ground bone, grit and oyster shell, and is kept before them all of the time.

The pullets are fed twice each day. In the morning a quart of dry mash is placed in each house. This mash consists of four parts of mixed feed, two parts of stock feed, one part of "HO" or poultry feed, one of animal meal, three of meal, two of scraps, one of clover and ten pounds of salt. At night cracked corn is given on warm days, but in cold weather we find whole corn to be more beneficial. Eggs are gathered each day at the afternoon feeding.

The best laying season is from February to June when we obtain an average of 3,000 eggs each day, and we always receive a price higher than that of the regular market on account of our guarantee.

The yearling hens are sold during the last of September or first of October during the Jewish holidays, and are disposed of by live weight. The purchaser comes to our place and weighs the poultry at the station, thus giving satisfaction to both parties. We place the crates in the afternoon, and in the evening a force of eight men lift the hens from the roosts and place them in the crates where they are left until morning. Then, bright and early, they are piled high on the trams and taken to the station where a car is waiting. It takes about four hours to weigh two thousand birds.

We have found this a very profitable way of handling poultry.

In our orchard we have about 10,000 apple trees, mostly Baldwin, ranging in age from five to thirty years and one half of which are in bearing. These trees are kept carefully sprayed, pruned and fertilized. Formerly we fertilized with hen manure twice a year, fall and spring, but we have found that this method tends to produce too much wood growth, so during the past two years we have made but one application. The land is heavy, moist and rich, so that very little fertilizer is really needed. Three years ago we began spraying and during that time have noted a vast improvement in the color and quality of the fruit. Three sprayings are made, one in March, the second before the buds open, and the third one just after the petals fall. We have never cultivated our orchard although we have been advised to do so.

Our apples won several prizes in the New England fruit exhibit in Boston, Massachusetts, in 1911, bringing us first prize on Baldwins; first on the best exhibit, which consisted of two barrels, two boxes, two baskets, and ten plates; first on the best five apples, and this latter among ninety-five competitors. We also had ten barrels in the New Hampshire state exhibit and the judges said that if it had not been for these the state would not have won the prize.

For nearly twenty years we have shipped our fruit to England where it has been sold at auction, but last season we sold the fruit on the trees and it proved to be such a good experiment that we expect to try it again. All of the barrels used in packing our apples are number one western stock, and in making them up we employ from two to five coopers. We believe that the package has considerable to do with the sale of the fruit.

ELIZABETH M. HAWYARD.
New Hampshire.

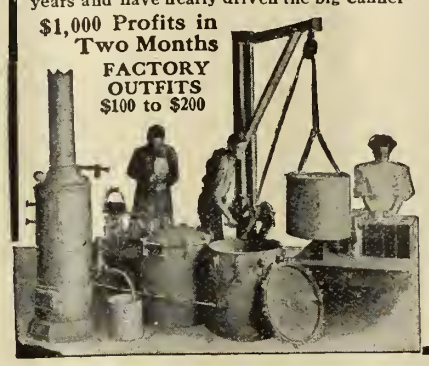
Do Your Canning at Home

Farmers, don't buy any more canned goods! Put up what you can use and sell the rest to your neighbors or grocery stores. Fruit Growers and Market Gardeners—no more vegetables or fruit need go to waste. Ship as long as the markets are good—then can the rest and sell in the winter at top prices.

Can Your Own Vegetables, Fruits, Fresh Meats, Fish, Etc.

in Steam Pressure Boilers

The same regulation steam pressure boilers that are used in the large canning factories, only made on a smaller scale and adapted for the home or small factory use. Anyone with ordinary intelligence and our simple instructions can put up corn, peas, string beans, tomatoes, pumpkins, fruits and berries of all kinds, fresh meats, fish, etc., just as easily as boiling potatoes. These outfits will pay for themselves many times over the first year and will last a lifetime. In Europe these small canning factories have been in evidence 20 years and have nearly driven the big canneries out of existence. In America they are fast becoming popular and will soon be to the vegetable and fruit districts what the cream separator is to the dairying sections.



Wanted! Agents and Dealers Big Profits For You.

A tremendous business is developing on these outfits and we are offering merchants, hardware dealers, nurserymen, fruit tree salesmen (as side line), farmer agents and others, big inducements to sell these outfits in their localities. They are *money makers* and every fruit grower and farmer's wife wants one.

"Secrets of the Canning Business" and our 1912 Catalog. Both Free

Send for them today. Our Catalog describes our entire line and tells just how to figure the profits yourself. Where we have no agent or dealer we will allow you agent's discount as an introductory price for the first outfit in each neighborhood. Write now.

Northwestern Steel & Iron Works
641 Spring St. Eau Claire, Wis.

$1000.00 PER ACRE

You Can Be Independent on Five Acres of Land If You Grow Berries

With a hundred berry plants you can find health and enjoyment. With five acres you can be independent; with twice that you can become rich. High cost of living, health, enjoyment, recreation, independence—these are the problems berry growing solves.

The Giant Himalaya Berry

is like a blackberry, but not a blackberry. Vine grows 40 feet a year, unless trimmed. Will stand the winters anywhere in the United States. Bears enormous crops of berries. Berries ripen early and continue late; are nearly an inch long, sweet and melting; delicious as dessert; superior to other berries for jams or preserves.

6 months old plants—$2.00 a dozen—postpaid
12 months old plants— .25 each—postpaid
18 months old plants— .50 each—express not paid
24 months old plants— 1.00 each—express not paid
The 18 and 24 month plants will fruit this year

GET MY INVALUABLE BERRY BOOK

I've studied living conditions for a good many years, while I produced berries of all kinds. The results are summed up in the one book of its kind published in America. The book is free. Send your address now, before you lose my address. A. MITTING, Manager

Berrydale Experiment Gardens, Fruit Ave., Holland, Michigan

Elkhart Vehicles and Harness

have a world-wide reputation for high quality and our prices have made them famous.

THIRTY-NINE YEARS'

experience selling to the consumer means success. We ship for examination, guaranteeing safe delivery, satisfaction and to save you money. Catalog shows all styles of pleasure vehicles and harness, pony vehicles and harness, spring wagons, delivery wagons and harness.

May we send you large catalog?

We also make the "Pratt-Forty" Automobile.

Save $25

Elkhart Carriage & Harness Mfg. Company
Elkhart, Indiana

"Rex" SPRAYS SPRAY PUMPS ORCHARD HEATERS
LIME and SULPHUR, ARSENATE of LEAD
WRITE FOR OUR OFFER We Have Sales Agency for Bolton Heaters
Don't Delay. Write Today. Time is Important Now. THE REX CO., OMAHA, NEBR.

FIRST COST OF BIG ORCHARD

This 1,000-acre orchard is located on Clarkston Heights, adjoining the City of Clarkston in Asotin County, Washington. The elevation is from 1,200 to 2,000 feet above sea level, and about 500 to 600 feet above the valley. The ground is mostly rolling, none is perfectly level, and some is quite steep. The soil is what is commonly termed volcanic ash. It is light, fertile, easily cultivated, and very retentive of moisture.

This land was practically all wheat stubble, and only needed to be broken. It was plowed in the fall and winter ten inches deep. This was done by contract at $4 per acre. We had inspectors on horseback continually with the plowmen to measure the depth of the plowing. The soil was left rough, not harrowed that fall. We started planting the first of December and finished about the first of April, planting whenever the weather would permit.

This land is surveyed into blocks and the blocks cut into lots of from two to ten acres each. Each of these lots is planted as a unit or individual orchard.

The planting method is a permanent apple orchard thirty feet square. The land was staked off before planting, putting a stake where each tree was to stand. All base lines were established by a surveyor with a transit. The cost of staking was 83 cents per acre, including the cost of stakes. These were lath cut in two. The planting cost on an average of $2.44 per acre, although on some tracts toward the last, on exceptionally good ground, the cost was as low as $1.65 per acre. However, I am convinced it is poor economy to try to do planting too cheaply, believing it better to do that work well and economize somewhere else if necessary. We planted on an average forty-eight apple, ten pear, twenty peach, ten plum or prune trees per acre. They cost each: Apple, 10c; pear, 20c; peach, 12c; plum, 12c; prune, 12c.

Right here I might add that the time of transplanting appeared to make quite a difference in the growth the trees made this season. The ones first planted made at least twice the growth that those set out last did, with a gradual gradation between. Many of the earlier planted ones made a growth of four feet in length and some even more.

The trees were headed eighteen to twenty inches from the ground, or knee high, at a cost of 10 cents per acre. If there were any side branches they were cut off, leaving only one or two buds. This is all the pruning they received this season; all the limbs that formed were allowed to grow in order to make the trunk more stocky and also protect it from the sun.

Cultivation was begun as soon as the ground was in condition in the spring. The entire orchard was gone over first with an ordinary peg-tooth harrow. The few soddy places were thoroughly disked, and the entire orchard spring-toothed once. It was then gone over again with the peg-tooth harrow; this left the soil in fine condition for the Kimball cultivator. The drivers of these implements were instructed to keep from two and one-half to three feet away from the tree row, so that we were not troubled with many skinned or barked trees. To get close to the tree an ordinary corn cultivator was used; straddling the tree row as one would a row of corn. In this manner every particle of soil was stirred, and yet the tree was not touched. Of course, this required careful driving, but as these were the only riding implements used and the drivers were made to understand that their continuance with them depended on their care, we had little trouble on this score. We tried to get over the entire orchard with some of these implements once every two to three weeks.

I stated before that the orchard was planted thirty feet square, with a filler in the center of each square. This makes rows only fifteen feet wide, but by running the rows diagonally to the planting we get the greatest width about twenty-one feet. This is the direction we cultivated.

The disking cost from 80 cents to $1 per acre. An ordinary two-horse disc harrow, having eight sixteen-inch discs was used. The work with the spring-tooth cost 60 to 65 cents per acre; the implement used was a seventeen-tooth harrow five feet wide. The peg-tooth harrow was a two-horse ten-foot harrow and the cost of cultivating with it was from 30 to 35 cents per acre. This implement covered the space between the rows at one round and then lapped a little in the center.

Two sizes of Kimballs were used, a seven-foot and nine-foot. One of each was used and exactly covered the space between the tree rows, with the exception of the two and one-half to three feet next to the trees. This was the most economical instrument we used; the cost of each cultivation being only 25 to 30 cents per acre. It was more economical than the peg-tooth harrow, because of the lighter draft, a team could walk along all day and not be dead tired at night. When the ground is in proper condition the Kimball cultivator is the best thing I have found to kill small weeds and preserve a dust mulch.

The balance of the ground next to the tree row was covered with the corn cultivator; with a cost of from 14 to 15 cents per acre for each cultivation. This was a six-shovel riding cultivator. For the first three cultivations we used the three ordinary shovels that came with it, such as one uses in cultivating corn. Then the two outside shovels on each side were replaced with sweeps; these acted about the same as the blades on the Kimball, killing all the weeds and leaving the ground smooth and preserving the dust mulch.

Our idea was to keep the soil entirely free from weeds, but this was not possible without some hand labor, so in August the entire tract was gone over and any weeds not killed by the cultivator were cut out with hoes. This cost 20 cents per acre.

On Clarkston Heights we had a central camp, consisting of an office with phone connection with the Clarkston office; cook and dining tent, sleeping quarters for the men and barns for the horses; also on the south end of the tract was another barn where the teams were fed at the noon hour so the least amount of time was consumed on the road.

A summary of the cost of cultivation is as follows: Disking 200 acres three times, at $1 per acre each time, $600; spring-tooth 1,000 acres at 65c per acre, $650; peg-tooth 1,000 acres twice at 40c per acre each time, $800; Kimball cultivating 1,000 acrds seven times, each cultivating at 30c, $2,100; corn cultivating ten times, 15c each time, $1,500; hand cultivating 1,000 acres at 20c, $200; making a total of $5,850, or a cost of $5.85 per acre.

Leaving the soil rough as we did, to catch the winter rains, and then putting on a cap consisting of a dust mulch, as soon as the soil could be worked in the spring conserved enough moisture to last the season, so a general irrigation was unnecessary, although the average yearly rainfall is only thirteen inches.

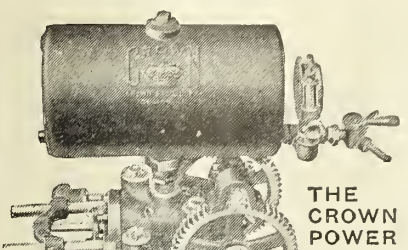
Early in the season we had two pests, one small and one not so small. The smaller was the ordinary pear slug. We got rid of him with a dust spray. We simply picked up a handful of dust and dashed it forcibly over the tree. There was no further trouble from the slug. This was as effective as any spray, and I know of none cheaper. Certainly there was no expense for machinery. The other trouble was the pocket gopher. They not only ate the roots, but even pulled the young tree under the ground and ate it. Poison was the only remedy we tried. The bait used was corn soaked in water in which strychnine had been dissolved, and raisins and pieces of carrots with a crystal of the poison in them. The method was to make a hole with a sharp stick in the burrow, drop a piece of poison bait in and cover the hole, taking care not to fill the burrow. We found the carrot and raisin much the more effective bait. The expense of combatting these pests was 10 cents per acre.

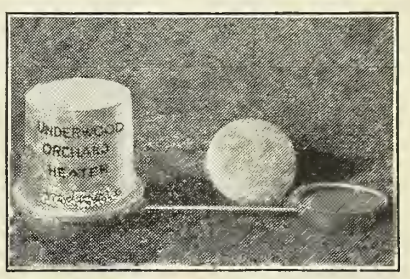
Along in August we made an estimate of the trees that had failed to grow, and it was about 3½ per cent. There were wheat fields almost surrounding the orchards, and after the grain was harvested the rabbits barked some of the trees and increased the percentage somewhat. We tried three methods of protection from the rabbits. First, Yucca palm tree protectors were placed around the trees. The protector itself cost 1½ cents per tree, and the labor of putting them on increased the cost to 1¾ cents per tree. Second, tar building paper was used, cut up into pieces about the size of the wooden tree protector, and fastened with ordinary paper clips, such as you use in the office. The cost of this, including labor, was 1.1 cent per tree. Third, whitewash, consisting of lime, soap and crude carbolic acid, was applied. This, with the cost of application, was only ¼ cent per tree. The best brush I found for applying this was to take about eighteen inches of one-inch or one and one-fourth-inch grass rope, wrap all except about three inches of this with wire and ravel out this three inches for the brush, using the wrapped part as a handle.

A summary of the entire expenses, including preparation of soil, and cost of trees, would be as follows:

	Per acre
Plowing	$ 4.00
Staking	.83
Planting	2.44
48 Apple, at 10c	4.80
20 Peach, at 12c	2.40
10 Plum or prune, at 12c	1.20
10 Pear, at 20c	2.00
Cultivation ten times	5.85
Pest control	.10
Heading trees	.10
Horticultural supervision	4.00
Office or overhead expenses, 10 per cent	2.77
Total	$30.49

Washington. W. B. LANHAM.

WE HAVE SOLD SO FAR THIS SEASON THREE TIMES AS MANY
Crown Spraying Specialties
AS WE SOLD DURING ALL OF THE LAST SEASON AND THIS SEASON IS JUST WELL STARTED
WHY? Because we are specialists in all matters of spraying and every article we put on the market is the result of a careful, scientific study of your actual needs.
"If You All Knew 'Crown Goods,' No Other Could Be Sold"
Look back at the January and February numbers of The Fruit-Grower and see our ads. It would cost us $500.00 to $1,000.00 to begin to tell you here about the Crown Line of Spraying Specialties, but you can get full description by sending a 1-cent postal card.
If you are not already spraying, you soon will be, and when the old spray pump, which you thought would last through the season, breaks down, just remember the Crown Power Spray Pump for $45.00. (See page 35, January number for full description.) You ought to have some Mass-O-Spray Nozzles, too. (See description and Free Trial Offer on page 120, Feb. issue.)

THE CROWN POWER SPRAY PUMP
And here's another thing. When that cussed relief valve starts to act up and won't shut tight and you can't hold your pressure, just remember that the Crown Relief Valve is designed on entirely new principles, so that it can't be clogged and there is no possibility of the grit cutting the seat away and making it leak. It always shuts tight. It outlasts four of the old type and costs no more. (See page 35, Jan. issue for cut.)
Your Dealer Can Get CROWN GOODS FOR YOU. We Want Dealer Agents.
CROWN SPECIALTY CO.
All Mail to P. O. Box 297, Chicago. All Telegrams to 1555 Fulton St., Chicago.

"The Kind That Works While You Sleep"
No refilling or adjusting during the night. There are many more good reasons why you should use the
UNDERWOOD ORCHARD HEATERS


WE CAN'T TELL YOU ALL ABOUT THEM IN THIS SPACE. ASK US
Underwood & Viles Cold Storage Co., Hutchison, Kansas

STRAWBERRY PLANTS
that are first class and best varieties for the South. L. Thompson, Klondyke, Aroma and Gandy, $1.75 per 1000. Order from this ad, please. D. GITHENS, THE BERRY MAN, SPRING CITY, RHEA COUNTY, TENNESSEE

POMEROY HARDY ENGLISH WALNUT
Write for prices on TREES
Norman Pomeroy
Lockport, N. Y.

Poultry Money For Every Woman

A chance to engage in a most profitable and fascinating business — small investment required, but safe and sure. *This is our generous offer:*

Shorewood Incubator, Shorewood Brooder, 50 Eggs (40 BREEDS to Select From) **$15**

The Shorewood Incubator is a guaranteed success. Used on Shorewood Farm. We commend it to you as the best and most reliable incubator to be had at any price.

The Shorewood Fireless Brooder is a sure winner from every view-point and will take care of the chicks just as the mother hen would—hover them as nature intended they should be.

The eggs we furnish are from standard bred stock, handled with great care, properly packed and shipped. We give special attention to health and vigor and you have the choice of 40 varieties.

The price we quote on this complete outfit is less than you would have to pay for the average incubator alone, and then you might not get the results you will from the Shorewood. Then, too, 50 eggs from good, healthy, thoroughbred poultry such as we furnish are worth as much. It's a bargain any way you view it.

Every man, woman, boy or girl who has a store-room, cellar or attic should take advantage of this offer and start a business for themselves which will flourish, with little attention, beyond their fondest hopes. A lot of our people operate the incubator in their living-rooms, and find pleasure and profit in doing so.

Send in your order now and we will ship the Incubator and Brooder at once. When you get them, read instructions carefully, acquaint yourself with both Incubator and Brooder. Then, when you are ready and weather permits, we will ship your eggs. Put the eggs in the Incubator, and you will have made your start in the poultry business, and a right start, too. Keep us posted and follow our advice. It is free, and you will make an independent income and find a lot of pleasure in a business that is sure to make you one of our many friends.

Write now. This offer stands good as long as the supply holds out. It will make poultry money for you.

Address

Shorewood Farms Co.
Box A 6
Saugatuck, Mich.

In writing advertisers please mention The Fruit-Grower.

Your Name Will Get $2 Eggs
For 50 Cents Per Sitting

The White and Brown Leghorns are the greatest layers in the world. I keep 2000 of the celebrated Chamberlain laying strains on my Experimental Farms, and to increase the sale of my Perfect Chick Feed, I will send to any one who will send me their name so I can send them my Perfect Chick Feed Catalogue, 2 sittings of Single Comb Brown or White Leghorn Eggs for $1 for the 2 sittings. Not less than 2 sittings sold. White or Barred Plymouth Rock or Rhode Island Reds or Silver or White Wyandotte or Rose Comb Brown Leghorn or Single Comb Black Minorca Eggs, $1 per sitting. W. Orpington Eggs, $2 per sitting, 13 to a sitting. Large white Pekin Duck Eggs, $1 for 10 Eggs. Indian Runner Duck Eggs, $2 for 10 Eggs. This is a rare chance to get a start of extra fine stock. Send Post Office order on St. Louis and have your orders booked early. Get our prices on Old Trusty Incubators, freight prepaid.

W. F. CHAMBERLAIN, (*The Perfect Chick Feed Man*)
KIRKWOOD, St. Louis County, MO.

Indian Runner DUCKS

All varieties. Best blood lines obtainable. Pens mated by an expert poultry judge. Excellent layers. Money makers. Eggs $1 to $8 per 13. Mating list free.

Mrs. D. O. TEASLEY, Anderson, Ind.

PERFECTION SANITARY CIRCULAR METAL BROOD COOP

made entirely of galvanized iron which will last a life time. They are properly ventilated, and are Rat, Mink, Weasel and Skunk proof. Just the coop you are looking for. Write for circular & special introductory prices.

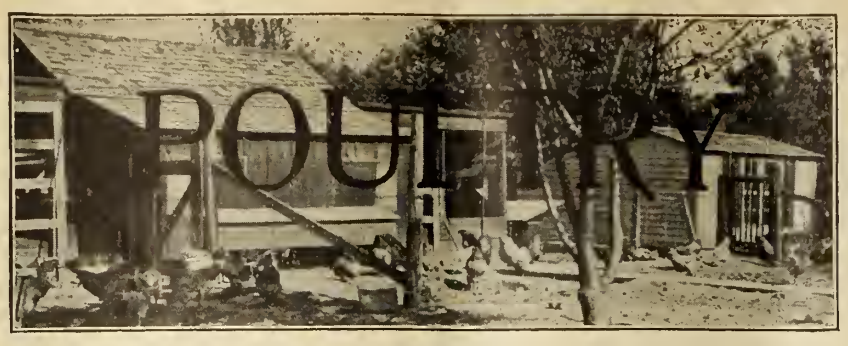
Perfection Metal Brood Coop Co., Warsaw, Ill.

MAKE YOUR HENS PAY

Our two BIG FREE BOOKS tell YOU how. OUR New 1912 Hatcher and Brooders will give you stronger chickens and will save half the cost. Write for FREE BOOKS today and we will tell you how to MAKE your poultry pay better than the rest of the farm.

Cycle Hatcher Company, 7 Lehigh Ave., Elmira, N. Y.

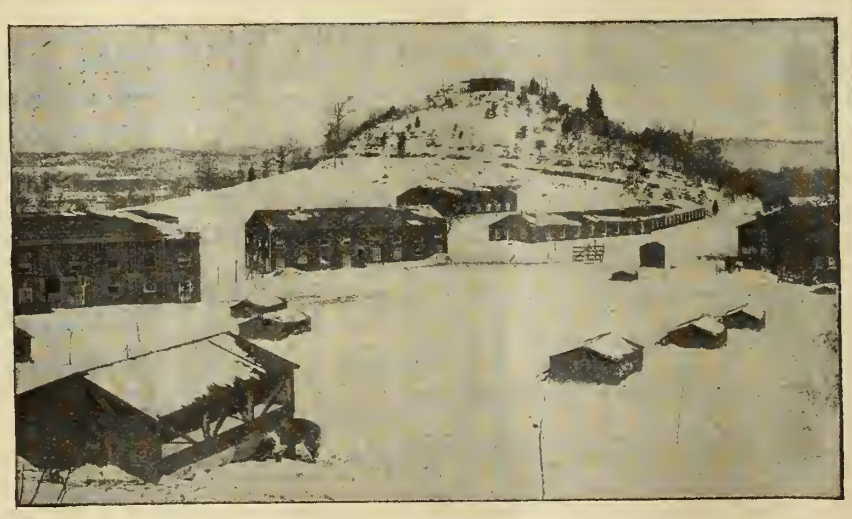
Latest Book "Profitable Poultry," finest published, 120 pages of practical facts, 160 beautiful half tones. Tells how to breed, hatch, feed and market to make big money. Tells about big poultry farm, 45 pure-bred varieties. Beautiful, hardy and money makers. We start you right. Lowest prices on fowls, eggs, incubators, etc., sent for 5c. Berry's Poultry Farm, Box 106, Clarinda, Iowa.



Yesterlaid Egg Farm.

Gathering from 500 to 600 eggs per day and selling them at 50 to 60 cents per dozen at the railroad station is being done this winter by the Yesterlaid Egg Farms Co., located along the lines of the Frisco and Missouri Pacific railroads, about thirty miles from St. Louis, Mo. When The Fruit-Grower man called at the farm he found 3,000 hens and pullets on the job of turning out snow-white eggs for the New York markets. Unusual as it may seem, the eggs from this Missouri farm pass through the city of St. Louis and find their way to the tables of the wealthy in New York City. New Yorkers pay better prices than St. Louisans, and so anxious are they for these white Leghorn eggs of the Yesterlaid brand that they willingly pay a handsome premium above the price of common eggs.

This farm is conducted solely for eggs and breeders rather than for broilers. It is run on the factory principle, and the 3,000 laying birds that are housed within the "Hendwels" are forced to the limit of egg production. In fact this company advertises the fact that the leading lady of their flocks, "Lady Laymany" by name, has on two different occasions laid two eggs a day. Her mate, "Lusty Tom," is an aristocrat of the first water, and eggs from this pair have been sold for $2.50 each, and not more than twenty-five eggs going to any one purchaser.



BUILDINGS OF THE YESTERLAID EGG FARM.

Waste Land Utilized.

This farm is located on the rugged hills on the upper end of the Ozarks. The land is too rocky and rough for the cultivation of crops, but is well watered and covered with virgin oak and cedar. It is an ideal location for a poultry farm, as it affords shelter from the north winds of winter, and affords an ideal range for the birds during the summer. The management takes advantage of these natural features by having located the "Hendwels," incubator and brooder houses at the base of a high hill, and facing the south. The laying houses, which the company terms "Hendwels" are two-story affairs, with rooms thirty by thirty feet, in the lower portion of which the hens and roosters spend their daylight hours, while the upper portion is given over to the roosting quarters. Five hundred birds are placed in each section of these "Hendwels," with the mating arrangement of seventeen hens to a cockerel, and the same number of pullets to a cock. These birds are all bred for business, and every one must pass a rigid score-card examination before it is eligible to serve. All that fail to pass this test are eliminated, being passed out as culls and sold as such.

"Hendwels" Well Constructed.

These houses are all built with a cement floor, and every precaution is taken to avoid corners which would harbor mice or rats. The rooms are large and airy, the ceiling being nine feet above the floor, and the windows of ample size to give an abundance of light and ventilation.

The floor of each compartment or room in the "Hendwels" is kept covered with a thick layer of straw, in which grain is scattered, and in which the birds may take their daily exercise at scratching. Fifty nests are provided in each room, placed at three feet from the floor, with the opening towards the walls. There is likewise a "jail" in each room, where a hen may be quartered should she go on an egg-laying strike and become broody.

There is also a long trough at one side of the room, in which the dry mash is automatically supplied, likewise the crushed limestone and shell grit, and a hydrant is in one corner of the room from which the supply of water is obtained.

Admission of the fowls to the roosting quarters on the second floor is gained by means of a ladder. This is kept pulled up to the ceiling during the day, and is lowered in the afternoon at the time the evening meal of grain is scattered in the litter. The roosting quarters are roomy, well ventilated, and scrupulously clean. The roosts are scantlings laid across sawhorses, and can be removed easily and cleaned. The second floor is also the place where the feed is mixed, and supplied to large bins, where it gradually passes to the troughs on the lower floor, where it is constantly before the birds. This is a dry mash consisting of middlings, cornmeal, bran, meat scrap, ground alfalfa and bone. At 10 o'clock in the morning, this same sort of mash is fed hot, being mixed with buttermilk and cooked.

LUSTY TOM.

In visiting this egg farm I was impressed with the care observed by the attendants in going among the birds. The Leghorns are nervous birds, and do not like to have people

There Are 325,000 Reasons Why You Should Choose The Old Trusty Incubator

THERE are 325,000 people now using them successfully—making big money with them raising poultry every season. Every one of these successes is *proof* to you that the *Old Trusty* is the machine you ought to *buy*. No other machine has had such a tremendous sale—no other machine is giving such satisfaction—no *other* machine of same *quality* sells for such a *low price*.

Old Trusty
On 30 to 90 Days' Free Trial

Read the proof in the description: Triple-cased throughout—inner case of high-grade ½-inch powder dry California redwood—middle case of highest grade asbestos—fireproof insulation—outer case, legs and all, of galvanized metal, handsome mottled finish—equipped with guaranteed-not-to-leak cold-rolled copper tank and heater—indestructible—can't burn, can't warp, swell or open at the seams—crack or decay—guaranteed ten years—twenty if you say so—shipped complete with best thermometer, egg-tester trays, and instructions—ready to run with sure results by anybody—no trouble, worry, or experimenting. Safety lamp and regulator fitted on at side—top clear for use as table in egg-testing.

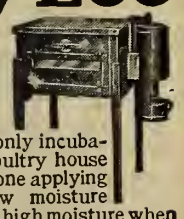
Be sure to send for the big, free book—it shows over 300 photographs of machines in actual operation—of poultry yards—and of successful poultry hatches—also photographs of some of the people who are making successes with my machines. The book is written by *Johnson himself*, who has the experience of the largest incubator family the world has ever known. With the book Johnson will tell you for how much less than $10.00 he will sell you an *Old Trusty*. Address

M. M. JOHNSON
The Incubator Man,
With a Score of 325,000 Satisfied Customers,
Clay Center, Nebr.

Freight Prepaid Anywhere Except Beyond The Rockies
Less Than $10

In writing advertisers please mention The Fruit-Grower.

Mandy Lee
The Incubator of Certainty



Operated by rule. The novice gets the same excellent results as the experienced operator. The only incubator with the open-front poultry house plan of ventilation. Only one applying the vital principle of low moisture with high temperature and high moisture when heat runs low. All regulated automatically. Send for latest book, describing the new features—plain, practical, helpful.

Write us for mating list and prices on S. C. White Leghorn stock and eggs from the Mandy Lee farm.

GEO. H. LEE CO., 1122 Harney St., Omaha, Neb.

I'll Start You and Keep You Going *Right* in the POULTRY Business

My World-famous high-quality incubators and brooders, and my Free Poultry Lessons make success **easy** and **sure for you!**

SUCCESSFUL INCUBATORS AND BROODERS

are made right and with the free advice and lessons I give my customers no one can possibly fail to make biggest hatches of strongest chicks. Write me. A postal brings all facts, hook, prices and proposition. "*Proper Care and Feeding of Chicks, Ducks and Turkeys*"—sent for 10c. J. S. Gilbreat, Pres.

Des Moines Incubator Co.
184 Second St., Des Moines, Iowa

YOUR HENS YOUR FARM YOUR MONEY

The Story of 25 Years with Poultry and Farmers and Fanciers will help many Farmers get more eggs—better prices; make more and save more money; tells things few folks know on making money with hens. Find out about **America's Largest Line of Incubators and Brooders,** and get six poultry chapters written by Robert Essex himself—It's all in our Free Catalog—Write today. Address

Robert Essex Incubator Co., 71 Henry St., Buffalo, N. Y.

In writing advertisers please mention The Fruit-Grower.

140 EGG INCUBATOR and 140 CHICK BROODER

The incubator is California Redwood, covered with asbestos and galvanized iron; has triple walls, copper tank; nursery; egg tester, thermometer, ready to use. 30 Days' Trial — money back if not O. K. Write for Free Catalog today.

Both For $10

Ironclad Incubator Co., Dept. 12 Racine, Wis.

GREIDER'S FINE CATALOGUE

Book and calendar for 1912 contains 200 pages. 72 varieties pure bred, 62 colored plates. Many other illustrations, descriptions. Incubators and brooders. Low prices on all stock and eggs. How to raise and make hens lay. Get my plans. All say it's great—this book—only 15c. Price list free.

B. H. GREIDER, Box 414, Rheems, Pa.

PFILE'S 65 Varieties

LAND and Water Fowls. Farm-raised stock, with eggs in season. Send 2c for my valuable illustrated descriptive Poultry Book for 1912. Write Henry Pfile, Box 617 Freeport, Ill.

moving among them, as a rule. But on this farm, at the entrance of each room was a conspicuous sign to "Knock and whistle before entering." I asked why this was done. "It is to keep from frightening the birds," was the reply. "Laying birds must not be frightened, and we take every precaution to not scare them in the least." When I was finally admitted to the great living room of one of the "Hendwels," after the necessary alarm had been given at the door, I found that the birds had certainly never been

LADY LAYMANY.

frightened. They gathered about us and looked up as though expecting a bite of something good, or a caress. This they got, for my conductor, Mr. Kimball, picked up and caressed a number of the beautiful little biddies, and each of them seemed to enjoy the treatment. They had surely never been mistreated in the least, and did not know what it was to be frightened. I also observed that the movement of Mr. Kimball, and an attendant who was cleaning out the litter was very slow and easy, and done so as not to scare the birds. This is one of the secrets of the place in bettor enabling the birds to turn out the large quantity of premium-bringing eggs.

Crates and Cartons.

All of the birds on the Yesterlaid Farm are hatched on the place. There is a special incubator house which contains a mammoth incubator, with a capacity of 6,000 eggs. This incubatory is not filled all at once, but in sections. Eggs go into it once a week, in compartments made for this very purpose, then the hatches come off in the same manner, so that there is a continual procession of young chicks coming from the machine. As soon as a section has come off, the chicks are taken to a long brooder house heated with steam, and here they are nursed until large and strong enough to go on the open range. Over nineteen thousand birds were hatched in this incubator last season. The cockerels were all fattened and sold at eight or nine weeks, except those which showed special merit as breeders. A few of the pullets were sold, and some of the newly hatched sold as day-old chicks. But the cream of the flock was retained for their own use, to lay the pure-white eggs for the New York markets.

The eggs are shipped daily during the summer and three times a week during the winter to both St. Louis and New York markets, although the larger portion go to the latter city. Here they bring a better price than does the market located only thirty miles from the farm, and yet the price at each city is f. o. b. the shipping station.

The eggs are packed in crates and in cartons. St. Louis customers demand the cartons, while New York takes them in the standard egg cases. They are sold in lots of fifty-five dozen to a customer, the New York customers being regular dealers, while the St. Louis trade is strictly among the consumers. But in spite of the large number of laying birds, the farm cannot supply the demand that is placed with them for eggs, both among the consumers as well as among breeders.

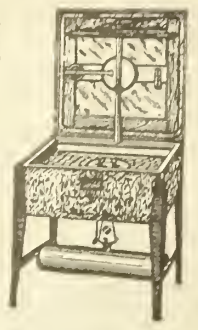
PRIZE-WINNING BIRDS.

1. Plymouth Rock, Oscar Smith, Plainfield, Iowa.
2. R. C. White Minorca, Thos. Brogden, Rush Lake, Wis.
3. Plymouth Rock, Leslie H. McCue, Greenwood Depot, Va.
4. R. C. Rhode Island Red, J. Alleshouse, Trenton, Mo.
5. White Wyandotte, R. S. LaRue, Bellefontaine, Ohio.
6. Black Langshan, John P. Lorenoz, Perryville, Mo.
7. White Orpington, A. J. Bullis, Brook, Ind.
8. S. C. Rhode Island Red, Mrs. T. A. Jackson, Yates Center, Kan.
9. White Wyandotte, B. L. Bavey, Bunker Hill, Ind.
10. S. C. Buff Orpington, J. B. Joseph, Sears, Ill.
11. White Orpington, M. A. Clark & Son, Redlands, Cal.

RAYO INCUBATOR

The Most Wonderful Hatching Machine in the World

The **RAYO** isn't the best because we say it is, but because it has been **Proved** best in the hands of thousands of thoroughly pleased users. The Rayo has **More Actual Improvements** than any other machine made.



ONLY ONE GALLON OF OIL FILLING OF TANK ENTIRE HATCH

Eggs turned and cooled without removing egg tray. Lamp cleaned without removing tank or chimney. Hinged lid, double glass panels, making eggs, thermometer and chicks always in plain view. Wonderful automatic regulator which raises and lowers flame as required. Write today for our **Free Poultry Book, "Eggs To Money."** It thoroughly describes this wonderful hatching machine, and gives prices. Write for **Your** copy today.

RAYO INCUBATOR CO. Fig. St. **Blair, Neb.**

"TWO OF A KIND"

TWO **OPEN AIR** HOVERS

Nature and Close-to-Nature

Bird Life Demands Open Air—Close-To-Nature Brooders Give It

Contact Warmth Like the Old Hen—Plenty of Fresh Air—No Over-Crowding:—Give these three things and you can raise every chick in flocks of 100 to 300. Close-To-Nature Brooders and Hovers keep the chicks close to nature and they live and thrive. Free catalogue on chick brooding.

CLOSE-TO-NATURE CO. 79 Front Street, Colfax, Iowa

Why Incubator Chicks Die

The book entitled, "The History of White Diarrhoea, or Why Incubator Chicks Die," will be sent absolutely free by return mail to anyone sending us the names of 5 to 8 of their friends that use incubators. This book can save you $100.00 this summer, it describes White Diarrhoea, or bowel trouble, the cause, and tells of a cure. Book absolutely free for the names.

RAISALL REMEDY COMPANY, BLACKWELL, OKLAHOMA

HACKETT'S GAPE CURE

KILLS THE WORM AS WELL AS THE GERM

THE WAY MOTHER USED TO DO

T.C. HACKETT REGISTERED HILLSBORO, MD.

THE NEW WAY.

REFUND YOUR MONEY IF IT FAILS

It's a powder. The chicks inhale it. Whole brood treated in 5 minutes. Ask your dealer for it or send 35c for full sized package, postpaid. Address Hackett's Gape Cure Co., Hillsboro, Md., Dept. F.

"Ringlet" Farm

McCue's "Ringlet" Barred Plymouth Rocks have led the South in the show room for six years. Foremost in size and great egg production. High class stock and eggs. Satisfaction Guaranteed.

Leslie H. McCue, Prop., Box 20, Greenwood, Va.
State Vice-President American Barred Plymouth Rock Club. Life Member American Poultry Ass'n. Send for descriptive catalogue.

INCUBATORS, BROODERS, CHICK, CHICKEN FEEDS AND POULTRY SUPPLIES

Write me for catalogue. My prices are right. I guarantee satisfaction. Also breeder of the Wm. Cook strain S. C. Buff and Black Orpingtons. Stock and eggs in season.

CARL J. HEDBERG. BOXHOLM, IOWA

WE PAY $80 A MONTH SALARY

and furnish rig and all expenses to introduce our guaranteed stock and poultry powders; money-back guarantee; outfit free; new plan; steady work. Address BIGLER CO., X 323, SPRINGFIELD, ILLINOIS

CHOICE STANDARD BRED

Rouen, Pekin and Indian Runner Ducks; Buff, White, Golden, Silver, Partridge and Columbian Wyandottes. Barred, Buff and Barred Rocks, $2.50 each, $6.00 trios, $9.50 pens. Toulouse Geese, $4.00 each. Satisfaction guaranteed. Geo. Hartman, Freeport, Ill.

1912 CATALOG FREE

Illustrates and gives prices of 45 varieties land and water fowls and eggs. This book should be in the hands of every person interested in poultry for profit. Address S. A. HUMMEL, Box 18, FREEPORT, ILL.

24c A ROD 10 BAR FENCE 48 in.

Best high carbon, rust-resisting, coiled steel wire. Easy to stretch over hills and hollows.

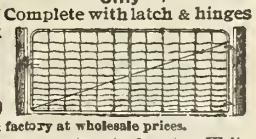
Steel Farm Gate

4x10 Ft. each only $2.95

Complete with latch & hinges

Barbed Wire

80 Rod Spool $1.40



Buy direct from factory at wholesale prices.

FREE Catalog of fences, gates, tools, etc. Write today to box 84 Mason Fence Co., Leesburg, O.

Continuous No Break

Advance 18 YRS. THE SAME

Before You Buy

get our direct from factory prices on the old, reliable Advance Fence—18 years a leader. You save all the middlemen's profits—

Save Money—12 Cents a Rod

and up. Hog, sheep, poultry, fruit and farm fence. Endless stay wires—no cut ends—no rust. Sold on money back guarantee. Write for "freight prepaid to you" catalog today. (6)

NO KINKS NO KNOTS

Advance Fence Co. Box 532 Elgin, Ill.

Their flocks, while young, have already established a splendid reputation, and a number of large egg farms have obtained their stock from the Yesterlaid Egg Farm and several experiment stations have obtained birds and eggs from this company with which to improve their own flocks.

While this farm is expensively equipped, and the cost of its maintenance is heavy, yet the returns from the salable produce is greater than from the general run of egg farms. It

A YOUNG ENGLISH-BRED INDIAN RUNNER DUCK.
Owned by C. K. Vanderbilt, Lyons, N. Y.

is financed by St. Louis capitalists, prominent business men, who have established the farm and are conducting it on the same strong, sound business principles that they have already worked out with success in their manufacturing and mercantile establishments in the city. Yet it affords lessons that can be applied over thousands of acres of the rocky hillsides of the Ozark region and should make hundreds of prosperous poultry farms within the borders of Missouri.

Pennsylvania's Greatest Poultryman On Winter Egg Production.

W. Theodore Wittman, who is the superintendent of the poultry department of the great Allentown Fair, and who as a poultry judge is known from Maine to Texas, and from Philadelphia to Chicago, as a poultry breeder, has probably no superior in the Keystone State, was the "star speaker" at the Pennsylvania Farm School, held at Allentown, Pennsylvania, for three days during the early part of January. Mr. Wittman took for his topic, "Winter Egg Production." He made some broad statements, though his audience, many of whom have known his ability as a poultry breeder and judge, realized that what he said was nothing but simply truths, based on the careful study he has given the subject during the last twenty years. This is what he told his audience:

"In the last ten years, the chicken people have evolved a system that will give them eggs all winter long. Yet the farmers of our country have not begun to get eggs out of their chickens in wintertime. The South is developing rapidly. At the Augusta State Fair, I found the poultry end the biggest thing at the fair. Canada is stepping to the front and her people are making great strides because people have to study and understand in order to produce eggs up in that cold country. The South is rapidly jumping into our markets, right here at our doors.

Greater Profits Coming.

"I hope we will wake up to the money that can be made out of eggs. In this section there are a good many people who say that there is no profit in cows. There, of course, is profit in nothing, if handled wrong. It might be assumed that if you can make $2.00 profit out of a $1.00 hen, you ought to be able to make $100 profit out of a $50 cow. But, who will say that this is possible hereabouts? Yet it is possible to keep this proportion and even higher, and it is the reason why the chicken people go into the business with so much energy and enthusiasm. Profits are going to be even bigger from now on. From all over the country information comes that shows that the outlook for the poultry business has never been better. Next year is going to be a big one, with a big volume of business, and there will be no end to it for some time.

"Why is all this? Well it started with a man named Silberstein, who advertised a trap nest and was the first to exploit it. Then chicken owners for the first time were able to tell which chickens were laying and

AN ARISTOCRATIC BARRED PLYMOUTH ROCK COCKEREL.
Owned by Leslie H. McCue, Greenwood Depot, Va.

which were not. That started investigation into the merits of chickens and to discover how it would be possible to get birds whose mothers and grandmothers were good layers. That led to the selection of birds and the improvement of breeds with respect to egg-laying. Lots of chickens on farms were never made to lay. Their ancestors did not lay well and it is not to be expected of them that they can do what their ancestors could not do. It is largely a matter of heredity. You would not think of planting a seedling peach tree and expect to get fine fruit from it. So you should not think of keeping mongrel, dunghill chickens and of getting eggs out of them. The improvement in the strain is going all over the world. A farm in New Jersey has 1,700 trap nests. The State of Missouri is spending $20,000 on an egg-laying contest, and other states are doing good work. In Belgium, the government buys pedigreed male fowls from laying stock and gives them to farmers for the raising of the standard of their flocks.

Begin With a Cock.

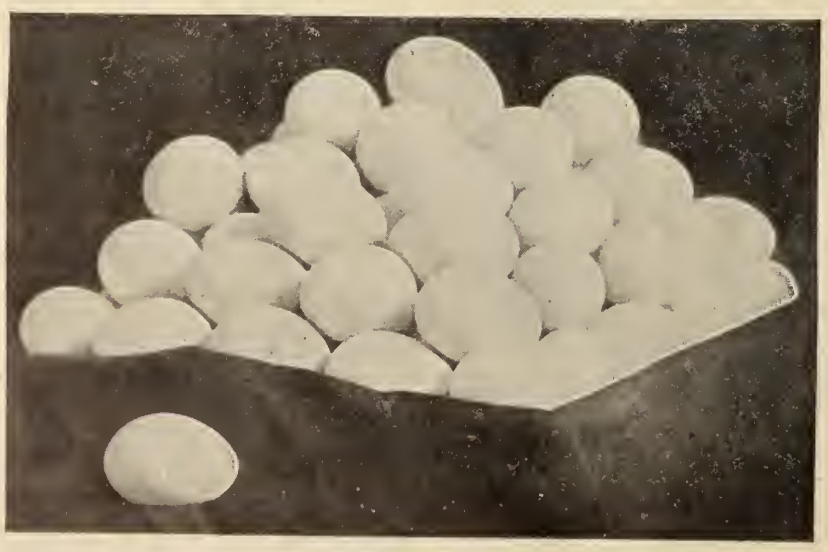
"The way to start a flock is with the male bird. Now, suppose you want to start a flock. Get a good male of good laying ancestry. It would cost only a few dollars and next year you would have pullets half as good as their parents. Breed until the flock has but a small percentage of mongrel blood. People do things because they can't help it, and so you want to get birds whose breeding makes it impossible for them not to lay. Install trap nests. Inspect the birds and study them. Know when they go to roost and when they get up. If we were to do this, we would be surprised to know what differences

ROSE-COMB WHITE WYANDOTTE COCKEREL.
Scored 94¾ by Hamlin & Tucker. Owned by Hiram Long, Edgerton, Ohio.

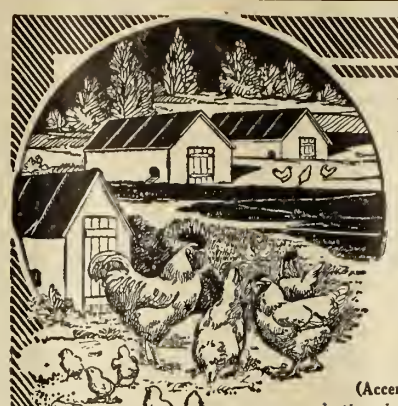
there are in chickens and what these differences mean in the quality of the bird.

"Let us try to determine some of these points. Demand these: a large comb, wide spreading legs, eye full, body in the shape of a wedge. First, of course, get good stock and then select for the best layers out of the laying stock. I cannot tell you what to do to feed a chicken and make her lay. There are too many other conditions, and feed is only one.

"There must be, first of all, a good house. I pity the poor chickens that are setting out on snow banks today and do not want to go into their disagreeable houses. Chickens do not like to have cold feet. It is the fault of the house. An awful lot of money has been spent in this state on the wrong kind of houses. We have always believed a chicken house had to be warm. We have learned differently. Much of the success of the commercial poultry farmer is due to the bettered chicken houses. A warm



PURE WHITE EGGS OF THE ENGLISH-BRED INDIAN RUNNER DUCKS, FROM THE YARDS OF C. K. VANDERBILT, LYONS, N. Y.



Protect Your Poultry

from all kinds of weather—rain and snow, heat and cold. To do so, you need a roofing for your poultry buildings that is rain-proof, snow-proof, heat-proof, cold-proof, time-proof and fire-resisting. RU-BER-OID is all of these. It lasts longer than metal or shingles, is easier to apply and costs less.

RU-BER-OID

(Accent on the "RU" and always spelled with one "B")
is the cheapest roofing known, considered from the standpoint of 10 or 20 years' service. It is the original smooth surface, ready-to-lay roofing. It is made of wool fabric, saturated and coated with RU-BER-OID Gum.

When buying roofing always demand RU-BER-OID and remember, unless the RU-BER-OID Man is shown on the outside wrapper, the roofing is not the genuine RU-BER-OID. The RU-BER-OID Man is your protection. Look for him.

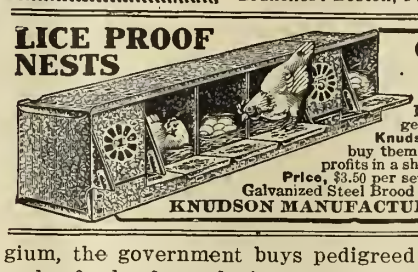
KA-LOR-OID is the only permanently colored prepared roofing—(Colored Ruberoid) THREE COLORS: RED, GREEN, BROWN.

Trade Mark Reg.

We want every reader of this excellent publication to send at once for book, "Around the World," containing illustrations from every nook and corner of the globe, and FREE samples.

THE STANDARD PAINT CO.
100 WILLIAM STREET NEW YORK
Branches: Boston, Philadelphia, Chicago, Kansas City, St. Paul, Denver

LICE PROOF NESTS



GALVANIZED STEEL KNUDSON PATENT

Get Rid of Lice and Mites by equipping your Poultry Houses with these wonderful sanitary nests. They cannot get out of order and will last a lifetime. You really pay for Knudson Nests whether you buy them or not; if you don't buy them the lice and mites will take the price of them out of your profits in a short time. Regular price $3.90 per set of 6 nests. Special Price, $3.50 per set, 3 sets (18 nests) for $10.00. Send for free catalog of Galvanized Steel Brood Coops with Runs, Chickfeeders, etc. Address
KNUDSON MANUFACTURING COMPANY, Box 304 St. Joseph, Mo.

Take Dollars From My Low Factory Price For Ten Minutes of Your Time—QUICK!

Hurry a postal to me. Get my magnificent offer before you buy any incubator. I am doing wonders to get my **Improved**

New Jewel Hatcher

introduced. Splitting the price for 10 minutes of your time at home. Giving $25.00 poultry course to insure your success. Big incubator book free. Sixty days' free trial. Record-breaking, high-grade Hatcher at lower price than you can secure a cheap, ordinary machine. Greatest offer of the age. Write me personally.
M. W. SAVAGE, Pres.
M. W. SAVAGE FACTORIES, Inc., Dept. 134 Minneapolis, Minn.

DIVINIA'S BARRED ROCKS

The Reproducing, Prize Winning, Pedigreed Line. Chicago Winners, Boston Winners, and their sons and daughters fill my yards. Eggs—Ten Grand Pens. Eyes, Shape, Size, Style—Standard Color—Modern, Distinct, Snappy. Barring—straight, narrow, even, deep. Catalog Free. Full to the roof of actual pictures of the birds worth $s to you.
S. T. DIVINIA, Sta. B, St. Joseph, Mo.
Bell Phone, Rural 108N3

MONEY IN THE BAG

PEARL GRIT "THROW PEARL TO POULTRY AND WATCH RESULTS" T.O.M.CO.

Pearl Grit is an extra egg producer. Extra eggs increase egg money. The extra money more than pays for Pearl Grit. Users say so, and keep a supply on hand. The reason is, IT PAYS. We want you to write us today for free detail information.
OHIO MARBLE COMPANY
757 S. Cleveland St., Piqua, Ohio

SAY! Do you know you can add $20.00 to $50.00 a month to your income by raising thoro-bred poultry? Do you know that we sell thoro-bred poultry and complete poultry outfits on the easy payment plan of $1.00 down and 50c a week? Send 10c for our beautiful colored chick picture and catalog.
WESTERN POULTRY FARM
770 SCOTT ST. WINONA, MINNESOTA

"Bred-to-Lay" Poultry Pays. 31 Varieties. Stock, Eggs, Baby Chicks, Incubators, Brooders, Poultry Supplies, Ginseng. Big Catalogue, 2c.
HARRY E. RUBLE, Box 88, ALBERT LEA, MINN.

KITSELMAN FENCE

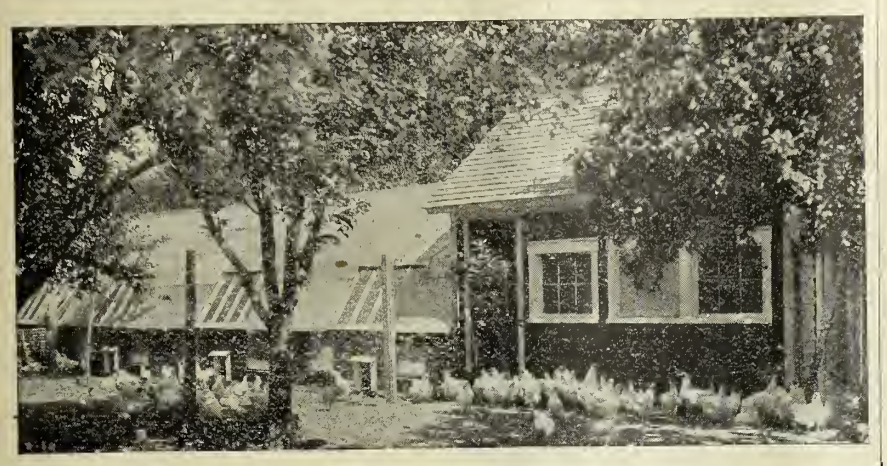
FOR THE ORCHARD
You want three things in a wire fence: 1, a fence that will give years of satisfactory service; 2, the style and height best suited to your purpose; 3, and at a reasonable price. Our prices

11½ CTS. A ROD UP

Save the DEALERS PROFIT and get a better fence. Kitselman Fence Lasts for Years. 100 styles and heights. Catalogue FREE.
KITSELMAN BROS. Box 103 Muncie, Ind.

house means pale combs, pale blood, and no eggs at all. You want fresh red, scarlet combs which means strength, vitality and eggs. Chickens want fresh air. They will sleep out-of-doors if given half a chance, because it is their nature. They need fresh air to keep up the heat at which their food is digested. They have no pores in their body to rid them of wastes. All their supply of air has to come through the lungs. Chickens are crazy for fresh air and they will not catch cold, so give them lots of air.

"As to the importance of different elements in the breeding of chickens, feeding comes last. The other principles of selection of breed are the most important and come first. This feeding of powders is all foolish. Of course, food is most of all, an apparent contradiction to what I just said. A chicken may lay 200 eggs a year and eggs are not made out of air. And remember this, that an egg really means a new chicken. To make a chicken lay 200 eggs a year she must be a bird of good digestion.



One of the low type poultry houses with glass on the roof and cloth windows at the bottom. This gives perfect ventilation without direct draft on the birds. Cedardahl Poultry Farm, Owatonna, Minn.

The Problem of Feeding.

"As important as what to feed, is how to feed. On Pennsylvania farms there are thousands of chickens that are standing around with a look in their eyes that means only one thing: "I wish I were dead." Do you think this kind are going to lay? No, they are longing for the time when the snows are gone and they can get out into the fields for a balanced ration. Now how can we get a summer ration in the winter? Have a clean floor, for it is the hens' dining table. Put litter on the floor to keep them at work. More litter for the heavy than the light birds. Send birds to bed with a full crop. You can get more eggs out of a certain bunch of chickens than otherwise if you feed right. You can make them eat more. The more a chicken eats, the more she will lay, provided it is the right balance and combination. I am a chicken crank and I visit every chicken farm I can. The past year I have seen over a hundred big successful farms. I never stay long at the rest. I find that gradually the successful men are getting together on problems and agreeing as to their solution.

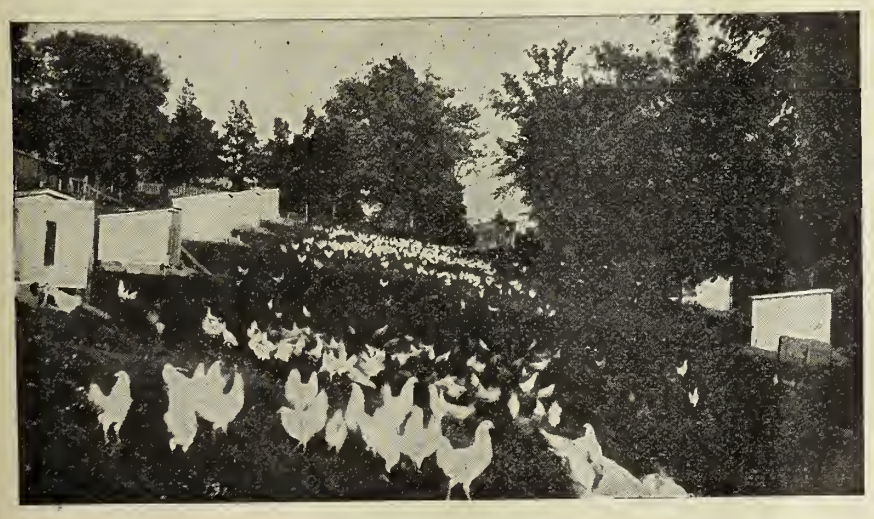
"Summed up we can say the three necessities for "winter egg production," are: better chickens; better chicken houses, or entirely different kind of houses; the right kind of food.

Cold Storage.

"It has always been known that there is a fearful waste of eggs. Last year in Chicago at one stroke over six cars of eggs were condemned. During this last summer the government experts toured the country and they discovered that $45,000,000 worth of eggs are wasted annually in the country. Lots of people blame cold storage, but in fact cold storage never did and never will spoil eggs. Cold storage is down to scientific principles. The one big reason these experts found for the waste of eggs, was, because we persist in having the old rooster run around. He ought to have his head chopped off and his carcass sent to market. Then, we could produce non-fertile eggs that will keep long and remain solid. Just consider that a nice fertile egg may be laid tbis morning. Now the temperature for incubation is 110 degrees. Well, before the egg has been taken from the nest, another hen comes along, sits on the egg and warms it. Then the egg may be gathered and put in a hot kitchen near a stove. The experts found temperatures surrounding the transportation of eggs often as high as 110 degrees. Natural incubator conditions often prevail. No wonder the eggs start to germinate, and then when chilled, begin to spoil.

"Quit having roosters around the farm. Otherwise the government and state will soon be sending inspectors around and they will require that the roosters be cooped up. The hens will lay more eggs, live longer and get along better without the rooster. There is no reason for keeping roosters, except in the breeding season. We ought to keep breeding cocks isolated, and then when the breeding season comes keep them isolated with selected egg-laying birds. I visited a woman who had about 200 chickens and eight nests. I asked her very bluntly, whether she would send milk to market in a milk can lined with dung. She was shocked. I wanted her to be. I had seen the filthy nests in which the eggs were laid, and I told her of the filthiness of having eggs laid in dirty nests.

"The washing of eggs ought to be stopped. There is a glue on an egg when laid which covers the pores and is its sole protection. Keep surroundings of eggs clean, always. Even handle them with clean hands. The egg is easily infected, even if it has a shell. So let us exercise common sense. Keep the egg right and see to it that it is turned over to the consumer right. There is only one thing about an egg that is affected by cold storage, and that is, it seems that cold breaks up the texture of the white of an egg and slightly affects the yolk in the same way. Some grocer gets cold storage eggs and keeps them in a warm grocery for a few days, and then some woman will get a dozen of these eggs and keep them near the stove. That is what makes cold storage eggs bad. The cold storage man has two problems to solve. To educate the dealer in handling them and the farmer in producing them. It seems a hard lesson to teach, though. It seems that the old fellows will have to die off. The new crop will have to grow up before these innovations can be fully established." H. WINSLOW FEGLEY.



PULLET AVENUE ON THE POULTRY FARM OF DR. J. D. HORTON, PAOLI, IND.

Our Experience with Poultry on a Fruit Farm.

We took possession of our farm in southern Illinois in the spring of 1904, with a view of developing it into a fruit farm. There was already an apple orchard of about twelve acres. We planted a peach orchard that spring, and a new apple orchard, principally Jonathans, the following year. Between the trees of the young orchards we have found a rotation of melons, corn and cowpeas to be very satisfactory. The thorough cultivation and hand-hoeing demanded by the melons in the newly planted orchard insures a full stand and normal growth of the young trees. The corn protects them from the wind and enables them to grow straight the second season, and does not deprive them of moisture or plant food if the precaution is taken to leave plenty of space between the tree row and the first row of corn. The cowpeas keep up the supply of nitrogen in the soil, and furnish an excellent feed for all kinds of farm animals, including poultry. We have practiced this same rotation with slight modifications on the part of the farm not occupied by orchards. The chief modification is the introduction of wheat to supply feed for our poultry. A melon crop leaves the land in ideal condition for winter wheat, since the continuous tillage we give our melons amounts to almost the same thing as a summer fallow, and a seedbed for wheat is easily prepared after the melons are harvested. We have also found it possible to grow a crop of cowpeas for hay following the wheat, thus securing three crops—melons, wheat, cowpeas—from the same land in two years, and leaving it in good condition for corn the following year. In addition to these crops we often grow a small patch of sunflowers and kaffir corn to add variety to the poultry feed, and have found these crops so satisfactory that we will probably grow them in larger quantities in the future.

I will have to tell you how we came to get into the poultry business. When we moved to this farm we planned to keep only a few hens to supply the table with eggs, but found the region so well adapted to poultry that we decided to enlarge our flock and make poultry one of the features of our farm. We realized that pure-bred poultry is more satisfactory than mongrels, that no ordinary farmer has any business trying to keep more than one breed of fowls on the same farm, and that frequent changing of breeds leads only to confusion. So we decided that we would get a start in pure-breds as soon as possible, that we would select a breed that seemed best to suit our needs, and then stick to that one breed. We wanted a fair-sized breed that would mature early and lay heavily in winter, when eggs are high. We also wanted a plump-bodied bird, that would be well feathered at broiler size. Since we had no incubator, we wanted a breed that would hatch their own eggs and rear their own chicks. About this time we met Mr. T. E. Orr, then secretary of the American Poultry Association, and talked with him about breeds and varieties of poultry. The outcome of this conversation was that we decided to adopt the Silver-Laced Wyandottes as our breed; and we have never regretted the decision.

The following spring (1905) we bought four sittings of the Wyandotte eggs. When the chicks hatched we kept them near the house and under special care. Under these conditions they grew like weeds. We raised sixteen pullets and a number of cockerels. After a careful study of the American Standard of Perfection we retained thirteen of the pullets and the best two cockerels for breeding.

Up to this time we had kept our poultry in the old henhouse that was on the place; but after we had marketed the melon crop in 1905 we bought lumber for a new house and built it ourselves, following some of the ideas suggested by a bulletin from the Maine Experiment Station. This house was 12 by 48 feet, framed with 2x4s throughout, covered with drop siding on the outside and ceiled with matched flooring behind and above

Strongest FENCE Made

Made of DOUBLE STRENGTH Coiled Spring Wire. Requires fewer posts. Always tight. Is heavily Galvanized with PURE ZINC.

Will outlast all others. Sixty different styles and heights to choose from. A FENCE for every purpose.

WE SELL DIRECT TO THE FARMER AT DEALER'S PRICES.

Be your own merchant and put the Dealer's Profit in your own pocket where it belongs. Prices the lowest ever quoted for a first-class fence.

26-inch Hog Fence, - - 15c. per rod.
47-inch Farm Fence, - - 23-5/10c. per rod.
48-inch Poultry Fence, - 26-9/10c. per rod.

Special Barbed Wire, $1.40 per 80-rod spool.

Biggest values ever offered and sold under our 30-DAYS-FREE-TRIAL-MONEY-BACK GUARANTEE-CONTRACT. Our big Catalogue contains information you ought to know. Write for it today. It's FREE.

COILED SPRING FENCE CO.
Box 125 Winchester, Indiana.

BROWN FENCE

WE PAY THE FREIGHT

Heaviest Fence Made
Heaviest Galvanizing

We make 160 styles. Horse cattle, sheep, hog, and bull proof fences made of No. 9 double galvanized wires and absolutely rust proof

Bargain Prices:
13 cents per Rod Up

Poultry and Rabbit Proof Fences, Lawn Fences and Gates. Send for Catalog and Free sample for test.

The Brown Fence & Wire Co.
Dept. 14 Cleveland, Ohio

SAMPLE FREE

The TIGER FENCE

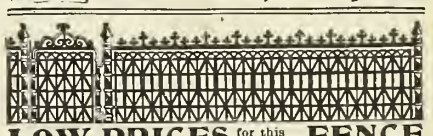
Made of Open Hearth High Carbon Coiled Spring (double strength) Steel thoroughly galvanized wire. May be returned at our expense if not satisfactory. Shipped direct from factory Field Fence, 49-in., 22¾c; Hog Fence, 27-in., 15½c; Strong Poultry Fence, 48-in., 27c; 60-in., 30c. Special price on Glidden Barb Wire. Catalogue FREE.

The TIGER FENCE CO., Clarksville, Tenn.

FARM FENCE

11½ cts. a rod for a 26 in. high hog fence; 16 1-2c. a rod for 47 inch high stock fence; 28c a rod for a 50-inch heavy poultry fence. Sold direct to the farmer on 30 Days Free Trial. Special barb wire, 80 rod spool, $1.40. Catalog free.

INTERLOCKING FENCE CO.
BOX 50 MORTON, ILLINOIS.



LOW PRICES for this handsome **FENCE**

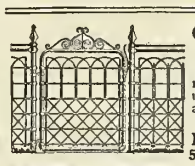
100 other styles. Many cheaper than wood—all better. For Lawns, Churches, Parks, etc. Write for Pattern Book and special offer.

THE WARD FENCE CO., Box 925 DECATUR, IND.

11½ CENTS A ROD

For 18 inch Hog Fence, 14¼c for 24-in. 26c for 48-in. Poultry. 78 styles. Bottom prices. Catalog Free.

OTTAWA MFG CO. 608 KING ST. OTTAWA, KANS.



ORNAMENTAL FENCE
25 Designs—All Steel

Handsome, cost less than wood, more durable. Don't buy a fence until you get our Free Catalogue and Special Prices.

We can save you money.

Kokomo Fence Machine Co.
501 North St., Kokomo, Ind.

LAWN FENCE

Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Churches and Cemeteries.

Coiled Spring Fence Co.
Box 413 Winchester, Ind.

the dropping board which was also of matched flooring. The open-front type of construction was used, with muslin curtains to close the house in severe weather. The roof was shingled and the house painted one coat with Venetian red and oil. The cost of the material for this house was approximately $80. The work of building was done at odd times between the harvesting of the farm crops.

The house was completed before cold weather, and the entire flock, consisting of about 175 yearling hens and pullets, including the sixteen Wyandotte pullets, put into winter quarters. The Wyandottes were given one of the four compartments of the house and a yard by themselves, so that their eggs could be kept separate. They started laying in December, and during the month of January the sixteen pullets laid 300 eggs. The three pullets we did not wish to use as breeders were then taken out and the breeding season started.

We alternated the two cockerels, allowing one of them to run with the hens one day and the other the next day, keeping the extra cockerel in an exhibition coop on a shelf, so that the two cockerels could not fight through the slats. We have often practiced this method of mating two males with from twelve to sixteen hens, and find that it results in securing a very high percentage of fertile eggs. For this kind of mating we prefer to use two male birds that are full brothers.

From this original pen we raised in 1906 over 100 fine pullets and a number of choice cockerels. The next year we sold off our mongrel hens and since that time have kept a flock of straight Wyandottes on the place.

Since we were making market eggs the main feature of our poultry business, we began to look around for a market that would pay better than selling to our local buyer, who shipped eggs by the carload to the general market in New York. We knew the difference between "eggs" and fresh eggs, and knew that there were people in the cities who would be willing to pay an extra price for the sake of being sure that the eggs they purchased were fresh. We also knew that physicians often prescribe raw eggs for invalids and convalescents, and that for such use it is imperative that the eggs be fresh. The problem was to make connection with a trade of this character. We thought of various ways, and finally wrote to two or three parties we knew in Chicago, one of whom was connected with a hospital, for it was here that we expected to find a demand for the class of eggs we had to market. We learned that the hospital was fully supplied from another source, but finally made arrangements with a retail dealer in fancy table supplies to handle our eggs. We ship him eggs twice a week and send a bill with each shipment, and he mails back the check. It is a very satisfactory way of doing business.

In feeding for eggs we keep a dry mash before the fowls all the time. This mash is composed of 100 pounds wheat bran, 100 pounds wheat middlings, 200 pounds corn and oat chop, 40 pounds beef scrap. When the fowls are moulting we add a little oilmeal. In addition to the dry mash we feed a mixture of wheat, oats and kaffir corn in the morning and corn or cracked corn at noon. All the grain is scattered in litter. Sunflower seed is fed in small quantities as long as it lasts, beginning as soon as it is ripe. It helps wonderfully during the moulting period. Beef scrap, cut bone, grit and oyster shells are accessible to the fowls all the time.

We have solved the problem of green feed for the fowls during the winter. We sow a small patch of rye or wheat close to the henhouse for the fowls to forage on in fall and spring; and also bury what loose cabbage we may have. Sometimes we grow kale and feed that till late in December, but the green feed we depend upon to carry the fowls through the winter is carefully cured cowpea hay. This is cut into half-inch lengths with a straw cutter, and placed in hoppers The fowls eat it readily and thrive upon it.

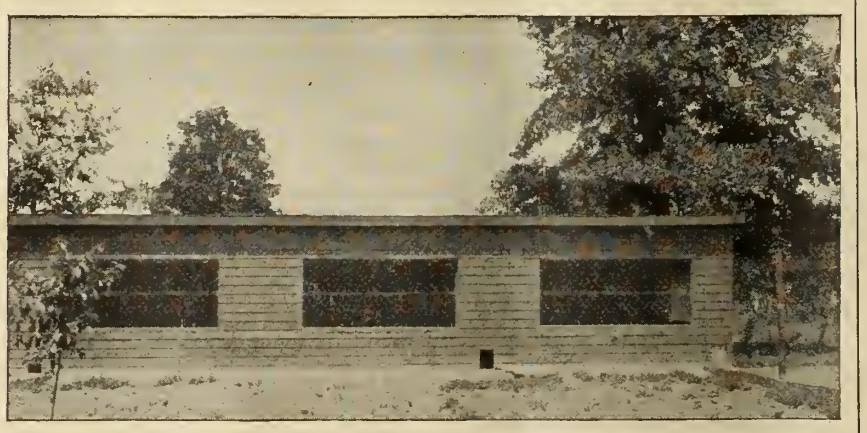
About the time we started breeding Wyandottes, a poultry association was organized in our locality and held a show. We took a few of our birds to have them scored. Although we secured only two ribbons—a second and a third—we learned considerable about selecting birds for exhibition, and when we showed the next year we had four pullets that scored within one-half point of each other and, together with our best cockerel, made a pen that out-scored all the Silver Wyandotte pens of other breeders. The year following that we took practically all the ribbons offered on Silver Laced Wyandottes at our local show.

On account of the disbanding of the local poultry association, we did not show again till the season of 1910-11. Then we exhibited at only one show, and were pleased to find that the judge appreciated our selection of exhibition birds. This season we have exhibited at one fair and two shows. In each case our birds have been prominent in the winnings, the climax being reached when one of our birds was awarded a championship ribbon at the Illinois State Show. Thus from a small beginning we have developed a line of birds that are able to command respect even in a big show.

Three years ago we began to sell eggs for hatching, and have been surprised to find the distance from which people will order eggs. We expected to have calls mainly from people within our own state, but have shipped eggs to Colorado, Pennsylvania, Michigan and Georgia, as well as Iowa, Indiana and Missouri.

GLENOAK POULTRY YARDS.
Illinois.

COLONY HOUSES FOR YOUNG CHICKS IN OAK GROVE, AT GLENOAK POULTRY YARDS, KINMUNDY, ILL



PARTIAL VIEW OF AN OPEN FRONT POULTRY HOUSE AT GLENOAK

Order Your Seeds Now.

If you have not already ordered your garden and field seeds, by all means order them now. There is great scarcity in some lines of garden seeds, and good seed corn is also said to be in rather limited supply, much of the corn saved for seed being worthless for that purpose.

Don't look for the cheapest seeds you can find, for really good seeds are not cheap this year. If you find what seems like a bargain, because price is low, you can look with more or less suspicion on the seeds, for they are likely to be of poor quality.

Another point: Don't plant any corn this spring without testing your seed, so you can know just what to depend on. There is a lot of worthless seed corn on the market, and the man who plants any of it is storing up trouble. It is an easy matter to test your seed corn, to learn whether or not it will germinate, and it is the safe thing to do always, and especially this year. Don't take any chances. You cannot afford to do so.

Who Has the Mele Strawberry?

Recently the Mele strawberry was recommended in The Fruit-Grower, and now we are getting letters from subscribers wanting to know where they can get plants of this variety. One man writes that he has tried a number of plant growers, but has not been able to find one who has this variety. Can anyone advise him where plants of this variety can be had? If so, write to Albin Smercheck, Blue Rapids, Kan.

Get your neighbors to subscribe.

"LION BRAND" TRADE MARK SPRAYING MATERIALS

Millions of Dollars Are Lost Annually by Fruit-Growers, Because They Do Not Spray Persistently With Properly Made Sprays

BLANCHARD'S
LION BRAND
INSECTICIDES & FUNGICIDES

ARE THE STANDARD OF THE WORLD
Strongest—Purest—Most Effective—Safest to Use
Destroy Every Known Insect Pest and Fungus Disease of Fruit Trees; Save the Trees and Insure Larger Crops of First Quality Fruit

"LION BRAND" LIME-SULPHUR SOLUTION
for San Jose Scale particularly, and the only Spray that destroys Scale and does not injure Trees. Ready for use, and more economical than home-made.

"LION BRAND" BORDEAUX MIXTURE
prevents Blight, Mildew, Rot, etc., from destroying Potatoes, Beans, Peas and Melons; keeps spots and specks off Apples, Peaches and other fruit, and makes crops surer and far larger. One gallon to 49 of water.

"LION BRAND" PURE PARIS GREEN
contains absolutely not a particle of filler or adulterant of any sort. Accepted the world over as the standard.

"LION BRAND" ARSENATE OF LEAD
The stickiest arsenate made. Preferable for Codling Moth, Curculio, Elm Leaf Beetle and Chewing Insects of all sorts, on trees, shrubs, vines, bushes and vegetables, where it is desirable that the poison remain longer on the foliage than is possible with other insecticides. Does not burn the most delicate foliage.

We Also Make Many Other Specialties
Something to destroy every injurious insect, and protect trees and plants from all fungus disease.
We are the largest and oldest manufacturers of Insecticides and Fungicides in the World—In this business exclusively 23 years. We publish a
FREE SPRAYING BOOKLET
a copy of which we shall be glad to send you
Write for It to Nearest Office
Blanchard's Products are sold by dealers and agents everywhere, or direct if your dealer cannot supply you.

THE JAMES A. BLANCHARD CO.
566 Hudson Terminal, NEW YORK — 567 Broad Street, ST. JOSEPH, MICH.
Factories—New York and St. Joseph

ANSBACHER'S

"Triangle" Brand
SAFE — "TRIANGLE" BRAND ANSBACHER'S ARSENATE OF LEAD — FINE — PURE

Arsenate of Lead Paste

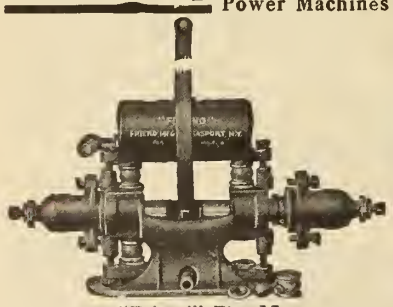
Test it against all others for Purity, Fineness and Killing-speed. Pure materials and care in making give "TRIANGLE" BRAND perfection. You can't paint with sand, so don't "poison-paint" your foliage and fruit with coarse poison. Fineness and Purity are equally important; also Killing-speed and SAFETY

Dealers in all Districts

Write us at once for free copies "Scientific Spraying."

A. B. Ansbacher & Company
255 Broadway New York

A Good High Pressure Hand Pump Is Better than a carload of poor Power Machines



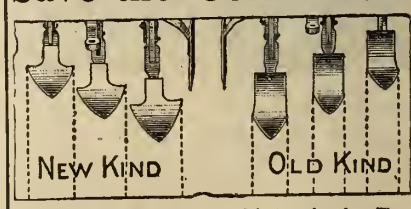
"Friend" Fig. 15

The Strongest, Simplest, Easiest Working, Most Durable Hand Pump on Earth. No Exceptions

Has "FRIEND" Power Sprayer features—QUICK DETACHABLE Valve Seats, QUICK ADJUSTABLE and ACCESSIBLE Packing. A HIGH, EVEN PRESSURE EASILY MAINTAINED.

Manufacturers of the
World's Best Hand and Power Sprayers
Our New Catalog is now ready.
Agents wanted for Hand Pumps and Accessories.
Power Sprayer orders to date beat all previous records. Not too late now, but don't wait. See our January and February ad.
"Friend" Mfg. Co., Gasport, N. Y

Save the Corn Roots



with my surface and deep cultivator shovels. They scour where others won't, leave the ground smooth, handle and run very easy for boys and horses. Your money will be returned if shovels don't please. Send for booklet.

CHAS. BURMEISTER
SUTHERLAND, IOWA

FORTIN

A Label Paste that holds fast to tin cans. Not the kind that peels off. Sample gallon can, 75 cents.

PERLESCO PRODUCTS CO.,
83 Fulton Street New York

Uncle Sam's Work for the American Housewife.

No branch of the general government comes so near the life of the people as the United States Department of Agriculture, which deals with the cotton and other fibers of which our clothes are made, the flocks and herds we raise, the crops we produce, the food we eat, and the timber of which our houses are built.

The closeness of the relation between the department and the people is in great measure due to the fact that the use which is made of agricultural products receives as much attention as their production, and the great bulk of these products are used in the home. Commenting on this phase of the department's work, Secretary Wilson says: "Commercial industries were long ago studied by scientific methods, since it was found that gaining knowledge by experience was much more costly than gaining it by systematic study. It is only lately that we have come to realize that it is equally profitable to study the housekeeper's problems. Fifty years ago few such questions had been taken to the laboratory and few schools gave instruction in such subjects. Today very many men and women of scientific training have taken the home problem to the laboratory and are finding ways of helping the housekeeper to solve her problems satisfactorily.

More than one hundred agricultural and other colleges in the United States now offer courses in "home economics," as this general subject of the study of home problems is called, and cooking or some other branch of the subject is taught in hundreds of high schools in the United States. The Department of Agriculture has studied many questions which relate to the use of agricultural products on the farm and in the home, but perhaps none of them has a closer relation to the household than the nutrition investigations of the office of experiment stations, which have to do with the use of agricultural products as human foods, and whose object is to help the housewife in her efforts to provide good living at reasonable cost, without undue labor."

The results of the work have been summarized in farmers' bulletins, twenty-four in number, on a great variety of topics, such as the food value of milk, sugar, bread, meats, fruits and vegetables; methods of preparing food for the table, and the care of food in the home. That the information presented has been appreciated is shown by the fact that a total of 9,968,000 copies of farmers' bulletins on food topics has been required up to date to meet the demand, or one bulletin to every ten persons of the ninety-odd millions making up the population of the United States.

In the case of every one of these bulletins over 100,000 copies have been needed to meet the request for them, and in the majority of cases three or four times this number, the demand, apparently, having a direct relation to the subject matter, the bulletins dealing with the commonest food materials being the most popular. Thus, over 700,000 copies have been published of the bulletins on bread making. Of Farmers' Bulletin 128, "Eggs and Their Uses as Food," 555,000 copies have been distributed, and of Farmers' Bulletin 121, "Beans, Peas and Other Legumes as Food," 420,000 copies.

The publications which deal with the preparation of food have been particularly sought after, 762,000 copies having been issued of Farmers' Bulletin 203, "Canned Fruit, Preserves and Jellies; Household Methods of Preparation," and 740,000 copies of Farmers' Bulletin 256, "Preparation of Vegetables for the Table." The bulletin which heads the list in the demands which have been made for it is Farmers' Bulletin 391, "Economical Use of Meat in the Home," which discusses the preparation of this staple food material with reference to economy as well as palatability. In the two years since this bulletin was published, eighteen regular editions, aggregating 1,420,000 copies have been issued by the Department of Agriculture, and, in addition a special reprint of 500,000 copies ordered by Congress, making a total of 1,920,000 copies.

In so far as its resources permit, the Department of Agriculture sends farmers' bulletins to all citizens of the United States who request them, but the most wide-reaching distribution is that made by members of Congress. As a whole, the farmers' bulletins, which reach every state and county, and almost every village and farm, have had a wonderful influence on farming, as shown by improved methods of cultivation, better crops and better utilization of the crops after they are grown.

The figures quoted with respect to nutrition problems show clearly that the housewife appreciates the farmers' bulletins, which deal with her problems as fully as does the farmer those which pertain to his work. The widespread distribution of information pertaining to home problems means a relative increase in the available food supply since it makes possible a better and more economical use of available resources and shows how unnecessary waste and loss may be avoided.

The Department of Agriculture not only helps to make two blades of grass grow where one grew before, but also helps the housekeeper in her efforts to make one dollar do the work of two in providing for the family table to meet the daily requirements for food, the tastes of the family, and the family income.

Breaking Up Broody Hens

If close observation is given the fowls, breaking up the broody hen is not difficult. The main thing to bear in mind is not to permit her to sit for two or three days before attempting to break her from sitting, otherwise it will be a much harder task to accomplish.

I do not find it necessary to keep her in a small coop to accomplish this result. When a number of fowls are kept, these coops add considerable to the general work. I consider the best plan is to give the hen a change of surroundings and thus divert her attention from the desire to sit. To accomplish this she is confined to a pen in a separate building. The new surroundings and lack of a nest soon causes her to take to the roost at night and in a day or two more she can be returned to the other fowls with all desire to sit gone.

While this plan will answer with the majority of the fowls and requires only three to four days confinement to break them from the desire to sit, there are now and then exceptions which may require a longer time.

I have a hen which after a week's confinement will still want to return to the nest, but as she makes a fine mother, rearing almost all her chicks when she does sit, I keep her on that account. There will be also, at times, a hen that will become broody and be very hard to break from the desire to sit, yet will show no special merits as a mother. Such a hen should be disposed of.

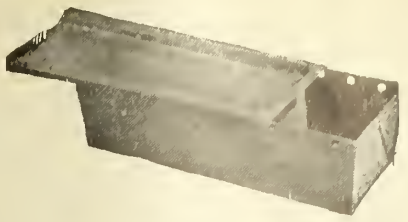
While I do not believe in confining a broody hen in a small coop, I do believe in confining her to a pen in the building and giving her no outdoor range, thus keeping her with the other broody hens until the desire to sit is gone. It does not always follow that because a hen will take to the roost at night and show no disposition to sit during the day when confined, that she is entirely free of the desire to sit. Sometimes on allowing her to return to the other fowls she will be found sitting again on the old nest. This is extremely aggravating, but her immediate return to the separate pen and a day or two more of confinement will serve to answer the purpose.

While many keep a separate cockerel to put with the hens wanting to sit, thinking it is an aid in breaking them up, I prefer the plan of confinement in different surroundings and find it to answer the purpose fully as well. When I have a large number of fowls and several hens want to sit at the same time, I change these hens at once to the separate pen; then, as still others show a disposition to sit, I add these. After a certain time all are released. If one or two of these fowls return to the nests when released, I take them back to the other building at once and with them the hens that are just beginning to sit.

While in following this method it is almost the same as keeping an added pen to the other yards of fowls kept, still in the end, it will be found a gain in that it saves the labor and care of looking after a large number of small coops.

H. E. HAYDOCK.

New York.



MILLIONS OF DOLLARS

were lost by the Orange and Lemon Growers of California last Christmas night, because they were not equipped with proper heating devices. In some districts temperatures of 18 above were recorded, and a 14-hour burn was necessary. Every user of

The Hamilton Reservoir HEATER

made good against these terrific conditions and the valuable lesson was learned at a tremendous cost that none but a large heater with **Reservoir Capacity** and with the **REGULATED FIRE** provides full protection for such conditions.

The growers of California no longer want inefficient, small heaters, as they will not do for a 14-hour burn against 12 to 14 degrees of frost.

Mr. Fruit-Grower, you had better profit by their experiences when buying your heaters, and get the most powerful equipment and one that holds several gallons of oil. Write us for the facts about this great Frost Fight and the only heater that gave every user full satisfaction. The big six-gallon heater proved the big winning factor. Write us for information.

The Hamilton Orchard Heater Co.

Grand Junction, Colorado

Paper for Gardeners

The Market Growers' Journal is a publication intended primarily for commercial gardeners, and yet every issue contains matter which is very helpful to those who have only home gardens. As a matter of fact, the average gardener has much to learn about proper preparation of the soil, selection of seeds, varieties to plant, how to cultivate and harvest, and especially about how to handle crops so that there is something growing on the tract all the time. The Market Growers' Journal furnishes this information and as they are prepared from the standpoint of the men who must make money from their gardening work, the articles are reliable and can be depended on.

Fruit-Grower readers who are interested in gardening should write to Market Growers' Journal, Louisville, Ky., for a sample copy. It will be sent free, and will show you what a helpful paper for gardeners it is. In writing for sample copies please say you do so at the suggestion of The Fruit-Grower.

Apple Market.

There has been a general stiffening of prices for really good apples, the increase being due chiefly to the fact that there has been considerable fruit lost by freezing weather. The freezing of great quantities of oranges has increased the demand for apples, and this, too, has helped to advance prices.

In Eastern markets there is much complaint of apples having scalded badly in cold storage, this being particularly true of poorly colored York Imperials and of Greenings.

Quality of apples varies greatly, and there is a wide range of prices. Good boxed apples are in demand, fancy Colorado Winesaps bringing top prices.

The Rochester (N. Y.) Chamber of Commerce is co-operating with the fruit-growers of Western New York in an effort to force the railway companies to furnish more cars during fruit season. This action on the part of a strictly commercial organization is the kind of co-operation that helps.

Delta County, Colo., shipped 2,134 carloads of fruit last year, as against 2,041 from Mesa County, Colo. Delta is the county that issued a challenge open to any county in the United States, predicting that more fruit would be shipped from that county than from any other in the country. Did any other county beat this record in 1911?

Nine hundred orchards in Pennsylvania will be used as demonstration orchards by the state board of agriculture, the work being under the direct supervision of Prof. H. A. Surface. Some of these days Pennsylvania will produce an apple crop that will startle the country. Improved methods are being adopted there, as a result of this work on the part of the state.

It is said there is prospect of a union of the Grand Junction Fruit-Growers' Association and the Grand Valley Fruit and Produce Company, both operating in the Grand Junction district. This would make a very strong combination, controlling a great quantity of fruit.

Stockton, Calif., claims to be the potato center of the world, and George Shima, the Japanese "potato king," is said to have cleand up $250,000 on the 1911 crop.

Our Classified Advertising Department

For advertisements in this department, of not less than twenty words each, in which no display type is used, we make a special rate of FIVE CENTS PER WORD, EACH INSERTION. If several different advertisements are inserted in the same issue, the charge will be $1.00 for each ad, no matter how small. The first four words of each ad will be set in black type. Every initial and number to count as one word. This department is for the benefit of our subscribers who have anything to sell, including farm lands, fruit farms, dogs, ponies, poultry and eggs, live stock, plants, shrubs, vines, etc. All advertisements for this department must be PAID FOR IN ADVANCE. Count the number of words you send, and remit at rate of 5 cents per word, stamps, currency or money order. This is considerably less than our display rate, and offers a splendid opportunity to reach our readers at a low figure. Send a trial advertisement with remittance at rate of 5c a word. THE FRUIT-GROWER, St. Joseph, Mo.

POULTRY DEPARTMENT

Anconas

Sheppard's Famous Anconas. The world's best. First at world's greatest shows, including London, England, Madison Square and Cleveland. Greatest egg record. Catalogue free. Cecil Sheppard, President International Ancona Club, Berea, Ohio.

Anconas. American Beauty Strain. Biggest money makers. Real hustlers. World's best layers. Will produce four eggs on same feed Orpingtons require for one. Outweigh Plymouth at 10 weeks. I win at all shows. Send for catalog. C. A. Niebur, Dept. 2, Lindsay, Neb.

Anconas—Both Combs. Large dark birds, evenly mottled, black tails and wings, winners Buffalo, Rochester, Cleveland, Williamsport, Madison Square, World's best. Eggs a specialty. W. A. Ellison, Elkland, Pa.

Anconas—Stock, eggs. Three pens. Show, trapnested egg strain and utility. Reasonable prices on application. Honest complaints made right. M. E. Wells Brewster, Ohio.

Prize Winning Mottled Anconas. Famous winter layers. Eggs, $1.50 to $3.00. Baby chicks $2.50 per dozen up. Write for Circular. W. H. Haudman, Frankfort, Kansas.

Anconas exclusively. Eggs from exhibition matings, $2.00 and $3.00 per 15. Thoroughbred utility matings, $1.00 per 15. Fred Crosby, 3251 Gillum Road, Kansas City, Mo.

Rose's Anconas and Indian Runners. Prize winners and great layers. Eggs, $1.00, $2.00, $3.00 per 15. Write for circular. Mrs. Daisy Rose, Bois D'Arc, Mo.

Ferncliff Farm Anconas are the kind you like. Bred to show and lay. Quality and prices will suit you. Circular free. C. Kriebbaum, Youngstown, Ohio.

Get Anconas, the greatest layers known today. Stop last, begin first; lay when others rest. Pure, dark, grand birds, the best. L. Evitts, Falls, Pa.

Ancona Cockerels of Quality—Have a choice lot. Write me stating kind of bird wanted. J. B. Firestone, Spencer, Ohio.

Andalusians

Blue Andalusian Eggs, $2.00 pen; setting 45 eggs, $3.00; 100 eggs, $6.00. Prompt shipment, fertile eggs. Satisfaction with every sale. William C. Foote, Wellington, Ohio.

Blue Andalusians. Winners at the leading shows for fifteen years. Great layers—and the prettiest of fowls. Stock and Eggs. F. L. Garnett, Nottingham, Ohio.

Bantams

Partridge Cochin Bantams with and without score cards. Stock and eggs. Also eggs from fine Single Comb Brown Leghorns. L. Beechler, Springfield, Ill.

Bantams, Eggs, 34 varieties, Sebrights, Cochins, Games, Polish, Rose Combs, Brahmas, Japanese. Send 2c stamp for circular. A. A. Fenn, Box 10, Delavan, Wisconsin.

Brahmas

Do you want to better your flock? Write for pictorial price list. I have nothing but the best 1911 Kansas State Show Brahmas; against 46, won me 10 premiums in 1912 show; 14 won 15 premiums. Mrs. J. R. Kenworthy, Wichita, Kan.

Light Brahmas exclusively; high grade, vigorous, good layers, good lookers, good prize winners. Stock and Eggs for sale. Harold E. Davis, Sleepy Eye, Minn.

Light Brahmas, scored to 95½; never been defeated in show room, Felch strain; best layers; $1.50 per 15. J. H. Willis, Jeweler, Norris City, Ill.

Buckeyes

Buckeyes—Dark red, small "pea" combs, small wattles, long backs, broad shoulders—ideal winter layers. Eggs and baby chicks; silver cup winners, Missouri State Show. Highland Poultry Farm, Box F, Nevada, Missouri.

Buckeyes, the great utility and fancy red, keep winter egg basket filled; eleventh year, state fair, Cincinnati and Columbus firsts. S G. Dunning, Logan, Ohio.

Cornish

Forest City Cornish Yards, Shawnee, Okla. Home of World Beater Dark Cornish and White Indian Runner Ducks. Stock and eggs for sale. Mating list free.

Cornish Indians—Thoroughbred exhibition stock. Fine laying strain. 15 eggs, $1.50; 30, $2.50. Baby chicks, $12.00 per 100. S. A. White, Box G, Timberville, Va.

Dominiques

The American Dominique is the only hen that will lay prolificly for fourteen years. Eggs 14 for $2. Mrs. A. L. Carson, 1425 Main St., Evanston, Ill.

Dorkings

Silver Gray Dorkings. Try these grand English fowls for excellence and profit. Hens at $1.25; eggs at $2.00 per setting. D. W. Seibert, Somerset, Pa.

English Red Caps

English Red Caps—Z. T. Turner, Eleroy, Ill., importers and breeders of America's best Red Caps. Catalogue free. Five other breeds. Exhibition quality.

Faverolles

French Salmon Faverolles are fastest growers; best winter layers, and are unequalled for broilers and market fowls. A. Essig, 2460 East 9th street, Cleveland, Ohio. Circular free.

Hamburgs

Silver Spangled Hamburgs, Black Orpingtons scoring to 95½, winners of silver cups and blue ribbons at Blue Island, Chicago, Missouri State, Kansas City. Eggs, $1.50 to $3.00 per 15. D. Van Rennen, 6440 So. May St., Chicago, Ill. Square Deal.

Silver-Spangled Hamburgs — Winners at leading shows. Many fine utility and exhibition cockerels. Stock and eggs for sale. Satisfaction guaranteed. Frank Heilman, North Judson, Ind.

Silver Spangled Hamburgs, real good ones, spangled all over, winners at 18 shows and fairs, guaranteed eggs $2.00 for 15; $3.50, 30. Descriptive circular free. Charley Laughlin, Bloomfield, Ind.

Silver Spangled Hamburgs, bred from egg record and prize winning stock from $1.50 up. Eggs, 15 for $1.00, 56 for $2.50; 100 for $4.50. Henry Bartig, Augusta, Wisconsin.

Houdans

Houdans—Dependable exhibition and utility cockerels for sale. Eggs from selected matings after March 1st; $2.00, 15; $3.50, 30. Satisfaction assured. Elm Park Place, Lawrence, Kan. W. L. Bullene.

Famous Houdans. Eggs and day-old chicks from our fine large farm raised Houdans. Eggs, $2.00. Catalog with photograph for stamp. Prospect Poultry Farm Orleans, Ind.

Eggs for sale from pure bred Houdans, $1.50 setting of 15; my birds won first and second at the county fair. Mrs. Clarence J. Bettis, Route 7, Forestville, N.Y.

Langshans—Black

Prize-winning Black Langshans, Buff Orpingtons. Eggs, $1.50 per 15. Fine cockerels for sale cheap. Jno. Cole M. D., Williamsfield, Knox County, Illinois.

Happy Hollow Black Langshans are as good as grow. They have won more prizes than any flock in Illinois, same number of entries. Eggs, $3.00 for 15. Chal White Prop., Hillsboro, Ill.

You need our strain of big Black Langshans. High scoring, heavy laying birds. Get your egg order in without delay. Neville Poultry Farm, Kewanee, Ill.

Get your egg order in now for early hatches. You need our big everlasting laying Black Langshans. Settings, $3.00. Neville Poultry Farm, Kewanee, Ill.

Black Langshans. Choice stock for sale from prize winners. Eggs booked for delivery from now on. Mrs. W. S. Wood, Route 1, Hunnewell, Mo.

Black Langshans. Winners American Royal, Missouri State shows. Farm raised, healthy, vigorous, big layers. Show stock, utility prices. C. M. Stackhouse, Box 567, Parkville, Mo.

Leghorns

Single Comb White, Brown, Buff and Black Leghorn, hatching eggs and baby chicks. Good farm raised stock. Moderate prices. Paul Bechtner, Route 5, Waukesha, Wis

Winter Laying Leghorns. Bred to "Shell Out" eggs, and do it Baby chicks, eggs, stock. Catalogue free. O. C. Frantz, 85 South, Rocky Ford, Colo.

Leghorns—Brown

Single Comb Brown Leghorns. Phenomenal layers and prize winners, in any size show, regardless of competition. This season they have won high honors at Hagerstown, Maryland, Roanoke, Front Royal and Lynchburg, Va., Charlotte, North Carolina and Atlanta, Georgia. Eggs only $2.00 per 15. A few cockerels for sale. Mating list mailed upon application. H. C. Adams, Lynchburg, Va.

Rose Comb Brown Leghorns. First prizes at Illinois and Missouri state shows, Indianapolis, etc. Heavy laying strain, best chickens for farmers. Eat least, lay most. Eggs from flock, $5.00 per hundred. Pens, $3.00 per 15. Oscar Wells, Farina, Ill.

Brown Leghorn Eggs, $3.00 per 15. Winners at Chicago, St. Louis, Cleveland, Cincinnati, Indianapolis. Over 400 premiums. Free circular on show record and matings. 25 cockerels at $1.00 each. E. E. Carter, Knoxville, Tenn.

Eggs for sale. Single-Comb Brown Leghorn pure-bred stock. Free range from a good laying strain. Incubator eggs in season, 120 eggs for $5, 260 for $10; a setting of 15 eggs, 75c. Fred Huecker, Route 1, Bunceton, Mo.

Eggs that will hatch from pure bred farm raised Single Comb Brown Leghorns. Great layers. $1.00 per 15; $4.00 per 100. Day old chicks, 25 for $4.00. Satisfaction guaranteed. Wm. Ellerman, Rt. 1, Versailles, Indiana.

Lamson's Rose-Comb Brown Leghorns are bred to lay. Madison Square and other big show winners. Stock, eggs and chicks. Circular free. H. Lamson, Box L, Cameron, N. Y.

Rose Comb Brown Leghorns, Mammoth Pekin Ducks. Winners at State Poultry Show, Detroit, 1911. Stock, eggs and baby chicks. Prices reasonable. Claudia Betts, Hillsdale, Mich.

S. C. Brown Leghorns. High grade cockerels and hens. Heavy laying strain, fine birds. $1.00. If in need, write us. Crow Creek Poultry Farm, Washburn, Illinois.

Single Comb Brown Leghorns. Bred-to-lay strain. Also Light Brahmas, utility bred. Eggs for hatching. Circular free. Maple Leaf Poultry Yards, Tunnell City, Wisconsin.

Rose Comb Brown Leghorns, hardy Northern birds, good layers; eggs, 20, $1.00; 100, $3.50. Shipped the same day laid. Mrs. Chas. Brown, Cavalier, N. D.

S. C. Brown Leghorns. 4 pens mated. Booking orders now for eggs. Bright's strain, finest in the world. Granite State Poultry Yards, Nashua, N. H.

Single-Comb Brown Leghorns. Champions of the entire West. Over 300 prizes won in 22 years. Circular free C. F. Lang, LaCrosse, Wis. Box F.

S. C. B. Leghorns—Bred exclusively for 25 years. Have as good as money will buy. Try some of my stock. W. W. Egbert, Millersburg, Ill.

R. C. Brown Leghorns of quality. Show birds for big shows. Bred for years to lay. Circular free. W. C. Pifer & Son, Keyser, W. Va.

Leghorns—Buff

S. C. Buff Leghorns, Gold Dust strain. I am waiting for your order and will fill it promptly. A few good ones for sale. Eggs from 4 best pens, $2.00 per 15. Write for list and mention Fruit-Grower. J. C. Eisenman, Greensburg, Ind.

For Sale—S. C. Buff Leghorns. Some fine show birds. A lot of magnificent cockerels and pullets, all prices. My old birds are select matings from the best breeders in America. Mrs. Anna H. Baldwin, Keswick, Ia.

The Sunshine Flock S. C. Buff Leghorns. Gold on your farm; gold in your pocket. Pen 1, $3.00 per setting of 15; Pen 2, $2.00; Pen 3, $1.00. Range, $5.00 per 100. Mrs. Anna H. Baldwin, Keswick, Iowa.

Green's Golden Feather strain Buff Leghorns, single rose. Best blood produced; winners everywhere. All scored by Pierce. Photos, feathers, winnings free. Horton Green, Colchester, Ill.

Hart's Single Comb Buff Leghorns are layers, winners and payers. You can get along without this strain but you can get along better with it. Mating list free. W. D. Hart, Ashland, Mo.

Pure Bred Single Comb Buff Leghorns, winners at two state shows. Bred to lay. Beautiful Golden Buff. Eggs, $1.00 for 15; $5.00, 100. E. L. Aldrich, Keokuk, Iowa.

Single Comb Buff Leghorns, the laying kind. Eggs from prize winners. $2.50 and $3.00 per 15. Joseph E. Mattison, Box 377, Paducah, Ky.

15 Eggs, $1.50, from 6 choice pens of Single Comb Buff Leghorns and Rhode Island Reds. Also stock for sale. G. C. Mahle, Washington, Ill.

Merihews Buff Leghorns. Won five regular and special prizes at the last Madison Square Garden show. Write for mating list. L. E. Merihew, Marathon, N. Y.

S. C. Buff Leghorn eggs, $1.50 per 15; bred for unusual egg production, exclusively, and they deliver the goods. Edwin M. Larason, Newark, Ohio.

Single Comb Buff Leghorns exclusively. 14 years. Select matings, 15 eggs, $1.50. Utility stock, 15, $1.00, $3.00, 100. Mrs. Frank Carnahan, Route 3, Adrian, Michigan.

Single Comb Buff Leghorns. Cockerels, $1.50. Pen eggs, 15, $2.00. Range, 15, $1.00; 100, $5.00. Baby chicks, 12½ cents each. Mrs. John H. Wood, Solomon, Kansas.

Choice Single-Comb Buff Leghorns, $1.25 each, $3.25 per trio. Indian Runner drakes, $1.25. Eggs in season, from prize winners. Hillcrest Farm, Blackwater, Mo.

Single Comb Buff Leghorn Eggs that hatch winners, $1.00, 15; $4.00, 100. Partly grown baby chicks a specialty. Mrs. L. Boldig, Tigerton, Wis.

Silver Leghorns

Silver Leghorns a specialty; 11 years a breeder of this beautiful variety. Send for my free circular. Sylvester Shirley, Rt. 3, Port Clinton, Ohio.

Leghorns—White

The famous laying and paying 240-egg strain. Single Comb White Leghorns, and Barred Rocks. 300 yearlings as pullets paid a profit of $2.50 each, from September 5, 1910 to September 23, 1911, in market egg records. Hatching eggs and baby chicks, baby chicks hatched in our candle mammoth incubator; season's capacity 50,600 chicks. Send for booklet. Lilly White Poultry Farm, Grand Rapids, Mich.

Single-Comb White Leghorns exclusively. D. W. Young's strain, finest in the world. Greatest layers, all on free farm range; 4,000 breeders. Eggs for hatching now ready at $6 per 100, in any quantity. Baby chicks ready in March. My great book, "Profits in Poultry Keeping Solved," will start you right. Price, $1.; circular and testimonials free. Edgar Briggs, Box 44, Pleasant Valley, N. Y.

Single-Comb White Leghorns—Our famous "Weja" strain. Barred Rocks, Ringlet strain. Cocks, cockerels, hens and pullets for sale. Booking orders for baby chicks, 10 cents each. Our customers return year after year, which is proof conclusive. Our stock pleases. Peerless Poultry Farm, Kenton, Ohio.

Our big egg book tells all about our 2,000 laying big egg strain S. C. White Leghorns. The egg and what it should be. It is especially interesting to beginners, It's free. Ridge Egg Farm, R. F. D., West Nyack, N. Y.

Single Comb White Leghorns of Quality. Prolific layers. Large snow white. Free range. Best equipped poultry ranch in Southern Indiana. Stock and eggs for sale. Eggs, $5.00 per hundred. Satisfaction guaranteed. Write, The Maples, Dr. J. D. Horton's Poultry Farm, Paoli, Ind.

Rose Comb White Leghorns, bred from winners at Chicago, St. Louis, Minneapolis, Oshkosh and Fond du Lac. Eggs, $1.50; $1.00 per 15; $5.00 per 100. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

Standard Bred S. C. White Leghorns. (D. W. Young's strain); not one drop of any other blood. Eggs and stock for sale. Mating list free. Now ready. S. F. Shallcross, Box 80, Odessa, Dela.

S. C. White Leghorns, Young & Wyckoff strains. Five hundred yearling hens and 500 April-hatched pullets for sale at a bargain prices. Satisfaction guaranteed. K. I. Miller, Box 53, Lancaster, Mo.

S. C. White Leghorns exclusively, raised on open range. Strictly healthy eggs for hatching, $1.00 per 15; $5.00 per 100. From prize winning stock. Walnut Grove Poultry Farm, Gallatin, Mo.

Empire State Single-Comb White Leghorns. Prize winners and heavy layers. Trios $5.00. Eggs for hatching $1.00 for 15. $5.00 per 100. Circular free. C. H. Zimmer, Weedsport, N. Y.

Single-Comb White Leghorns—Winners at leading shows for 28 years. Choice stock for sale. Eggs in season. Write your wants. J. H. Kollmeyer, Quincy Heights Poultry Farm, Quincy, Ill.

Sunflower Poultry Farm. Single Comb White Leghorns exclusively. Best mating, $3.00 and $5.00 per 15; utility, $1.00 and $5.00 per hundred. Arthur L. Knapp, Branford, Conn.

Brookside famous winter laying strain of Single Comb White Leghorns, the kind that lay and pay. Eggs for hatching a specialty. Catalog free. Brookside Poultry Farm, Bachmanville, Pa.

Bliem's Single Comb White Leghorns. World's famous exhibition and laying strain; stock; eggs; 16 years experience. Circular free. Samuel S. Bliem, R. R. 5, Pottstown, Pa.

S. C. White Leghorns. Breeder of "Bred to Lay," a strain of unsurpassed winter layers. 15 eggs, $1.00; 100 eggs, $5.00. No order too large. R. S. Ketcham, Box 20, Boonville, Ind.

Hatching Eggs. My breeding pens of S. C. White Leghorns are composed of only December and January layers. Consider what this means. $1.50 per 15. O. F. Merrill, Parma, Idaho.

Single-Comb White Leghorns; large plant, large fowls, large eggs. Stock for sale; eggs for hatching, baby chicks in season. Catalog. Fowler Egg Farm, Fowler, Colorado.

Ozark Strain White Leghorns; great layers, great beauties. Send for catalog, its different. Eggs of quality for incubator or hen. F. S. Newcomb, St. James, Mo.

Cherry Grove Poultry Farm. S. C. W. Leghorns. 300 pullets and yearlings for sale and eggs for hatching. Baby chicks a specialty. J. A. Hochstedler, Rocky Ford, Colo.

171 eggs per hen per year; average of our S. C. White Leghorns. Prize winners. Stock, eggs, chicks; mating list free. Cunningham Bros., Route 5, Lansing, Michigan.

S. C. W. Leghorn eggs from prize winners, St. Louis, East St. Louis, Quincy and Belleville. Several splendid cockerels left. Julius W. Weber, Belleville, Illinois.

Single Comb White Leghorns. (Young strain). Prize winners, 92 to 96 pointers. Eggs and baby chicks a specialty. Booklet free. W. H. McCormick, Ransom, Illinois.

Single Comb White Leghorns exclusively, large, stay white kind, heavy layers, and profit payers. Eggs, $4 and $10 per hundred. H. A. Teegarden, Union City, Indiana.

S. C. W. Leghorns, Ingraham strain. Large white birds, prolific layers; none better. Eggs for sale. C. G. Ingraham, Originator of the strain, Waukegan, Illinois.

Single Comb White Leghorns. Winners of the Blue and Red. Baby Chicks. Eggs for hatching, any number. Yarmond Poultry Farm, Dept. F. Cranford, N. J.

Eggs, S. C. W. Leghorns. Pen scores 90 to 95½. 75 cents per 15; $4.00 per 100. S. C. Mottled Anconas, 75 cents per 15. L. J. Hooper, Palmyra, Wis.

Cole's S. C. White Leghorns. Large, vigorous, farm raised birds. Heavy laying strain. Eggs, $1.25 per 15; $5.00 per 100. Cole's Poultry Farm, Quakertown, Pa.

Single Comb White Leghorns. The quality kind. Good winners at Detroit and Indianapolis, 1911; stock and eggs for sale. C. W. Hosmer, Union City, Mich.

S. C. White Leghorns—From grandest laying strains in America. Hatching eggs, $1.50 for 15; $5.00 per 100. A. Nafziger, Route 5, Benton Harbor, Mich.

Snow White Leghorns, Single Comb, Young's strain. None better. Eggs and cockerels scored by Heimlich for sale. Circular free. John J. Schmidt, DeSoto, Mo.

Stoughton's Single Comb White Leghorns are a strain of winners, bred to lay; 25 acre range; 15 eggs, $1.50 Circular. Geo. A. Stoughton, Rockbridge, Ohio.

Eggs from fancy Single Comb White Leghorns, prize winning birds, Easling strain; $2.00 per 15; farm eggs, $1.00 per 15. Nat L. Brasfield, Unionville, Mo.

Conradt's S. C. W. Leghorns lay large white shelled eggs; $1.00 per setting; 100 hens and cockerels for sale. C. G. Conradt, Ft. Madison, Iowa.

Single Comb White Leghorns, Runner Ducks. Eggs, $1.00 per 15; $4.00 per 100. Rose Comb Black Bantams, $1.50. Phil Ried, Castalia, Ohio.

Reiff, the Farmer Fancier breeder of R. and S. C. White Leghorns. Eggs for hatching, 10c each; $10.00 per 100. Joseph Reiff, Fayetteville, Pa.

Rose Comb White Leghorns. Reasonable prices. Laying strain and show birds. Golden Sebright Bantams. Reasonable. J. L. Moore, Rolfe, Iowa.

Get the best laying strain. S. C. White Leghorns. Eggs, $6.00 and $10.00 per 100. R. M. Clark, Sunnyslope Poultry Farm, Quincy, Ohio.

S. C. White Leghorns. Young, Wycoff, heavy laying strain. Eggs five and ten dollars hundred. Guaranteed. E. E. Wells, Cohoes, N. Y.

S. C. White Leghorn pens score 93 to 94; $1.00 setting 15. 94 to 95¾, $1.50; scored stock have prize. Wm. C. Dahl, Berger, Mo.

Rose Comb White Leghorns. Chicago winners. Thos. Brogden, Rush Lake, Wis.

Minorcas—Black

Single Comb Black Minorcas exclusively (Northrup strain), unexcelled for laying. Eggs, $1.50 per 15. $5.00 per 100. Ward L. Hammond, Route 2, Oswego, New York.

Single Comb Black Minorca Eggs from strain of National reputation, $3.50, 15; $6.00 per 30. Results guaranteed or your money refunded. Fred Kelm, Seneca, Kan.

I have bred S. C. Black Minorcas ten years, that won first prizes wherever shown. 15 eggs, $1.00; 50 eggs, $2.50. Stock all sold. Alton Finney, Platteville, Wis.

Single Comb Black Minorcas bred exclusively. Excellent laying strain. Eggs, $2.00 per 15 or $8.00 per 100. Minorca Farm, Sta. L, Route 3, Cincinnati, Ohio.

Rose Comb Black Minorca Eggs for hatching from first prize winners at Chicago and other large shows. Mating list free. Edgar Brooks, Zion City, Ill.

Rose Comb Black Minorca eggs, $2.00 per 13. From 92 to 96 point birds. Trios and pens for sale. Will Heintz, 819 Vine St., Quincy, Ill.

Minorcas—White

Single Comb White Minorcas. Pens made up from fine selected stock. Scores of satisfied customers. Eggs for hatching at right prices. Write for further information. W. E. Rice, Spartansburg, Pa.

Rose and Single-Comb White Minorcas. Choice, prize winning stock. 15 eggs, $2 00. Booking orders now. Charles M. Palmer, Nassau, N. Y.

Rose Comb White Minorcas, the world's best. Thos. Brogden, Rush Lake, Wis.

Ornamental

Silkies, White Frizzles, Black Frizzles, White Rumpless, Black Rumpless, White Guineas, Pearl Guineas, Gray Call Ducks, English Greyhound pups. (Wanted Peafowls.) Enoch Baily, Albion, Ill.

Orpingtons

Crystal White Orpingtons. Females from Kellerstrass $100.00 pen. Males direct from Kellerstrass. Eggs, $2.00 setting of 15. Rhode Island Reds, Lambke and Justie strain. Both combs. Eggs, $1.00 setting of 15. Orders booked to ship when directed. Roland McKean, Mulberry Grove, Ill.

Orpingtons, Black and White. My famous strain, Ring on Top, are the best by test all over the world, no matter how much you pay, you cannot get any better quality and remember at low prices. Large illustrated catalog free. Wm. A. Heinrichs, Sellersburg, Pennsylvania.

Crystal White and Golden Buff Orpingtons. Winning wherever shown. Twenty-five Buff and ten White cockerels, $2.00 up. Sold on approval. Booking orders now for eggs and baby chicks. Stamp brings mating list. Crystal Orpington Farms, Box F, Batavia, Ill.

Orpingtons, White (both combs), Single Comb, Buff, Black. New York, Boston, Hagerstown, Williamsport winners. Eggs, Baby chicks, reasonnble. Mating list free. Wm. Seidel, Box G, Washingtonville, Pa.

Single Comb Buff, White, Rosecomb White. Prize Winners. Bargains in Breeders. Eggs, $1.50 up. Hens with Baby Chicks, $4 up. Mating List. Doctor Evans, LaGrand, Iowa.

Orpington Place, where you get the best S. C. Buff and White Orpingtons in the West. Stock and eggs for sale. Send for mating list. Geo. B. Moehrl, Marshall, Iowa.

S. C. Black and White Orpingtons. Eggs for hatching from prize stock having best blood lines in existence. Prices, $2.50 to $5.00. Vernon Mathews, Vineyard, N. Y.

Orpingtons—Black

Single Comb Black Orpingtons, prize winners. Winning six firsts, four seconds, three thirds, two fourths, two fifths at three shows. Eggs from two grand pens, $2.00 and $2.50 per 15. John Holscher, Dyersville, Ia.

Schuman Single-Comb Black Orpington. Best of all winter layers. Scoring as high as 94½. Winners wherever they show. Eggs in season. $2.50 for 15. Ed. J. Schuman, Neosho, Wis.

Criterion Black Orpingtons for laying and winning. Standard size type, color, Crystal Palace and American winners. Mated up. Catalog. Lykens Valley Farm, Box G, Sacramento, Pa.

Black Orpingtons exclusively The low, blocky kind. Winners twice of the American Orpington Club Cups. Stock for sale. Eggs, $5.00 and $3.00 per 15. E. F. Arrington, Milton, Wis.

Want to Buy or Sell?

Perhaps you have some extra nice cockerels to dispose of; it may be that you have some good pure-bred pigs to sell to those who wish to improve their droves; maybe you have some surplus small fruit plants; you may want to buy a farm or to sell one; you may want to hire a man or to get a job for yourself. No matter—whatever you have to sell, or whatever you want to buy, you should use the advertising columns of The Fruit-Grower, and

Advertise Your Surplus on This Page

Hundreds of Fruit-Grower readers find it profitable to advertise in our Classified Columns. The cost is small, and returns great; you can make money by advertising your surplus wares in this department. There's nothing like it for cheap, effective advertising. Rate is

FIVE CENTS PER WORD PER ISSUE

Cash with order. We don't want to keep books on this department, and cash for advertising must accompany the order. Copy can be changed as often as desired. Send your copy for next issue. Address

The Fruit-Grower Classified Department **St. Joseph, Mo.**

Black Orpingtons, Cook and Owens strains; prize winners. Also Single Comb Black Leghorns. Great winter layers. F. G. Turner, Box 356, Alleghany, N. Y.

Davis Black Orpingtons win wherever shown. A few extra bargains in stock. Eggs, $3.00 per 15. S. H. Davis, Box N, Lansing, Mich.

Black Orpingtons. Stock and eggs for sale. High class, score 93 to 95½. Write for prices. Circular free. Satisfaction guaranteed. T. Haynes, Red Bud, Ill.

Choice breeding pens, blue winning Black Orpingtons. Great layers. Fine color and shape. Eggs, $15.00 per hundred. Ada Pratt, Route 6, Elgin, Ill.

Buff Orpingtons

S. C. Buff Orpingtons. Eight pens headed by cockorels scoring 93. Raised from imported birds scoring dam 93½, sire 95¼. Eggs from all pens, $2.00 per 15; $10.00 per 100. Satisfaction guaranteed. S. B. Terry & Son, Little Sioux Poultry Yards, Little Sioux, Iowa.

Single Comb Buff Orpingtons exclusively. Eggs from special matings, choice exhibition stock, $3.00 to $5.00 per 15. From utility stock, $1.50 per 15; $6.00 per 100. Send for mating list. Leo. W. McDavitt, Laplata, Mo.

Buff Orpingtons. Our birds are noted for vitality, type, size and utility qualities. Also winning at leading Illinois shows. Mating list free. Eggs, $1.00, $2.00, $3.00 per 15. Tietsort & Stutzman, Box B, Girard, Ill.

Eggs and prize winning S. C. Buff Orpingtons at $1.00 for 15, $2.50 for 50. Eggs from S. C. Black Orpingtons, $1.50 for 15, $3.50 for 50. Satisfaction guaranteed. Carl J. Hedberg, Boxholm, Iowa.

Winter Laying Strain. S. C. Buff Orpingtons. Stock and eggs for sale. All Buff Beauties and bred to lay in winter. Send for catalog and prices. Booking orders now. V. T. Williams, Stanberry, Mo.

Single Comb Buff Orpingtons. Pen headed by 2nd cockerel Kansas State Show, 1910; hens from "Victor," 1st cock, same show. Eggs, $5.00 for 15. Mrs. T. A. Jackson, Yates Center, Kan.

Buff Orpingtons, Owens strain. Won prizes in two good shows. Cock scored 93 by Russel. Stock all sold. 15 eggs, $3.00. Fertility guaranteed. Club member. C. D. Adams, Olathe, Kan.

Single Comb Buff Orpingtons. Ten grand pens of prize winners. Eggs, $1.50, $2.00, $3.00 per 15; $5.00 and $7.00, 100. Over 500 prizes in four years. H. D. Kelley, Reedsburg, Wis.

Eggs for hatching, from best blood lines of S. C. Buff Orpington chickens and standard bred pure white egg strain of Indian Runner Ducks. Prices right. C. C. Dawson, Chrisney, Ind.

S. C. Buff Orpingtons and Anconas. Prize winning stock for sale. Eggs for hatching from free range birds. Price low. Guarantee satisfaction. J. R. Wilcox, Knoxville, Pa.

Closing out Buff Orpingtons. Pullets, $1.50 to $2.00. Cockerels, $3.00. Excellent Barred Rock cockerels, $3.00 to $5.00. Pullet bred. Eggs. Frederick Coons, Greendale, N. Y.

241 egg strain, Single Comb Buff Orpington eggs for hatching, 75 per cent fertile guaranteed. Cook strain direct. Circular free. Try me first. Walter Bardsley, Neola, Iowa.

Buff Orpingtons. Two great shows, won 4 1st, 2 2d, 2 3d, 2 4th, and 8 specials. Eggs, $1.50 and $5.00 per 15. Write for catalog. B. F., Aug. Petersen, Churdan, Iowa.

Single Comb Buff Orpingtons. High scoring stock. Rich in blood of Madison Square winners. Eggs, $1.50, 15; $2.50, 30. Utility, $5.00, 100. Mrs. Fred Jones, Kane, Ill.

Send a $5.00 money order to W. T. Remlinger, Ottoville, Ohio, for setting Single Comb Buff Orpington eggs and raise some prize winners. Satisfaction guaranteed.

Thorobred Orpingtons — Buffs, pen, $2.00 per 15. Range, $1.00 per 15; $5.00, 100. Whites, Kellerstrass strain, $2.50 per 15. Mrs. S. W. Pfister, Hjawatha, Kansas.

S. C. Buff Orpington Eggs from prize winners at Illinois State Fair, 1911, won 1st cockerel. Write for mating list. Mrs. Ferne Deuterman, Atlanta, Ill.

S. C. Buff Orpingtons and Red Carneaux Pigeons. Quality and price makes business. Eggs and stock for sale. Write me. J. B. Joseph, Sears, Ill.

S. C. Buff Orpington Eggs. Martz and Owens strain, best winter layers. Big egg record. Golden Buff, $1.50 to $3.00 setting. Thomas Fewtrell, Joliet, Ill.

Early Bird Buff Orpington Farm. Orpingtons that are Buff. Eggs that will hatch. Always a cock for sale. Dr. W. I. Griffith, Fort Scott, Kansas.

Single Comb Buff Orpingtons (Cook's strain) direct. Good colors, good size, good shape. Write for mating list. Riddle & Sons, Le Roy, Ill.

Send me an order for 50 S. C. Buff Orpington eggs at $2.50. I can please you. $4.50 per hundred. Mrs. Judson Lyman, Concord, Mich.

Single Comb Buff Orpington; eggs, $1.50 to $3.00 for fifteen; day old chicks; send for mating list. J. W. Bear, Warrensburg, Mo.

Orpingtons—White

Crystal White Orpingtons, Kellerstrass strain. We won the blue at eight big shows. Stock, Eggs and Baby Chicks always for sale. Mountain View Ranch, 8 Sugar Station, Salt Lake City, Utah.

Crystal White Orpingtons are the most popular chickens in the world today. You can see more of them advertised than any other breed of chickens. Why—because they weigh more and lay more. We were the originators of this famous breed. They were originated right here on our farm. If you want to know more about them and the prices of stock and eggs, send for our large illustrated catalog. Kellerstrass Poultry Farm, 9176 Westport Road, Kansas City, Mo.

Our Crystal White Orpingtons and Mani Light Brahmas have been awarded sixty-three regular and eleven special prizes at Iowa shows, 1911-1912. At Des Moines we took 1st cock, 1st and 2d cockerel, 1st and 2d pullet, 2d and 3d hen, 2d pen. Silver cup for best cockerel, silver cup for display Brahmas and Sweepstake cup over all Asiatics. Stock for sale; eggs, $3.00 and $5.00 per 15. Fairholm Poultry Yards, 307 W. 4th St., Boone, Iowa. W. Oliver, Mgr.

Imported Single Comb White Orpington stock and eggs from first prize cockerel, third prize cockerel, second pen, second and fourth pullets at Illinois State Poultry Show, Springfield, 1911, and winners at many other shows. Write for mating list and prices. Heaps White Orpington Farm, Kewanee, Ill. Dayle S. Blake, manager. Warren T. Heaps, M. D., Proprietor.

Single Comb White Orpingtons, Kellerstrass strain. I furnish you the foundation for top-notchers in cocks, cockerels, hens, pullets, baby chicks or eggs. Send me what you feel you can invest in any of the above, and if I don't please you, you can have your money back (with a smile). Write for mating list. Mrs. W. H. Vreeland, Pattonsburg, Mo.

Buy "Crystal White Orpingtons"—Best for market because they grow faster; best for eggs because they are the "winter egg" machines. I am booking orders now for eggs from prize winners at Lansing and Port Huron, Michigan shows, 1911. Prices, $3.50 and $5.00 per 15. William Purfield, Ann Arbor, Mich.

White Orpingtons, best record second week Missouri National egg contest. Silver cups two shows same date. Eggs (Cook, Kellerstrass), $5.00, $3.00, $12.00, 100; chicks 40c, express prepaid. Get "Why I Breed Orpingtons." Dr. Thos. Dietrick, Box S, Washington, New Jersey.

Crystal White Orpingtons from high-scoring pen laying 63 per cent. Five months old pullets averaged 53 per cent. A few choice cockerels and pullets. Satisfaction guaranteed. Eggs, $1.50 and $1.00. Marion Stevenson, 2712 Pine St., St. Louis, Mo.

Kellerstrass and Jackson Strain of Crystal White Orpingtons. Eggs for hatching, $2.50, $5.00 and $8.00 for settings, of 15. All pens are of excellent stock. Eggs at $8.00 are from first prize winners. Mrs. J. N. Byrd, Branchville, S. C.

White Orpington Eggs, $3.00 for 15, from pen headed by 9-lb. cockerel and 8 and 9-lb. hens, $5.00. Robert Broeker, Nevada, Mo.

Kellerstrass Crystal White Orpingtons, single comb, 75 fine large pullets for sale. Price $5 each. I have no culls. Eggs from five fine pens at $3 15, $5 30, $7 45. Booking orders for January and February. James A. Driggs, Liberty, Ind.

Kellerstrass Orpingtons—April hatched stock from a $100.00 pen direct from the Kellerstrass farm and selected by him. Choice cockerels and pullets at a bargain. Eggs after April first, $5.00 per setting. Miss Susie M. Fowler, Slater, Mo.

We have 40 of Kellerstrass' famous breeders, from which he sold eggs at $2.00 each. We can sell you eggs from these identical hens at $2.00, $3.00, $4.00 per setting. Special rate per 100. Mrs. Little, 36th & Jackson, Kansas City, Mo.

White Orpington Eggs from imported pen, $15.00 per 15. First pen American birds, $10.00 per 15. Several pens, all prize winners, $5.00 per 15. Satisfactory hatch guaranteed or refilled at half price. Wm. Thurman, McMinnville, Tenn.

White Orpington Home—Rose Comb White Orpingtons exclusively. Best layers and payers of all the Orpingtons. Eggs from best pens, 15, $5.00; 30, $9.00. Hatch guaranteed. Birds for sale. Circular free. Earl L. Cook, Munnsville, N. Y.

Single Comb White Orpingtons. Many prize winners mated this season for eggs. Baby chicks after April 1st. Eggs, $2.00 to $10.00 per 15. Send for mating catalogue. Superior Poultry Farm, A. J. Bullis, Prop., Goodland, Ind.

White Orpingtons, Kellerstrass and Cook strains. Heavy layers; winners at Ft. Madison, Keosauqua, Bonaparte, Keokuk, Ia., Warsaw, Camp Point, Ill. Eggs, $3.00 setting, 30 for $4.00. J. M. Skinner, Keokuk, Iowa.

S. C. White Orpingtons and Salmon Faverolles. Winners silver cup Zion City and 3 1sts, 2ds and 3rds, and 1st pen at Oconomowoc, Wis. Cockerels for sale. Mating list. Innes Crystal W. Yards, Chas. Innes, Zion City, Illinois.

Kellerstrass Crystal White Orpingtons direct. Eggs from a $70 pen, 1911 birds, $3 for 15; others, $2 and $1.50. Hen-hatched, brooder-broke chicks, 20c to 30c each. Wardwell Poultry Yards, Grant Ave., Rutland, Vermont.

S. C. White Orpingtons. The ideal farmer's fowl; quick growers, big weighers, big layers and acclimate themselves easily. Eggs from utility stock, $1.50 per 15. G. F. Fisher, 122 N. Seltzer St., Crestline, Ohio.

Orpington cockerels at $2.50 to $5.00. White, Kellerstrass strain. Black, Bon Ayr strain. Satisfaction guaranteed. Gee-Whiz Fruit and Poultry Farm, Fred P. Phillips, Manager, Route 1, Box 71, Gentry, Ark.

For Sale—S. C. White Orpington eggs and chicks. Best of stock. Winners at show here last three years. Eggs, $2.00 and $3.00 per 15. Chicks, $4.00 per dozen. W. Bruner, 1403 Spy Run Ave., Ft. Wayne, Ind.

Kellerstrass White Orpingtons. I won nine prizes in class of fifty-three shown by eight exhibitors. Birds score to 95½. Mating list. Fifteen eggs, $3.00. Express prepaid. Edward Buss, Janesville, Wis.

Crystal White Orpingtons. Write us your wants, we have both stock and eggs for sale. Foundation stock a $100.00 pen direct from Kellerstrass Farm. Hardin Poultry Farm, Route 1, Noble, Okla.

White Orpingtons, Kellerstrass strain. Two hundred fine yearling hens and March and April-hatched pullets for sale at bargain prices. Satisfaction guaranteed. K. I. Miller, Box 25, Lancaster, Mo.

S. C. White Orpingtons, Philo and Kellerstrass. Pedigred winter laying and exhibition strains. Matured classy birds. Orders filled in turn. Eggs, 20c each. R. W. Howland, Manchester, Iowa.

White Orpingtons of Quality. Eight grand pens. Eggs shipped anywhere. Catalogue describes each. Noted winners and layers. F. Bullington, Secretary, White Orpington Club, Richmond, Va.

Single and Rose Comb White Orpingtons. Best strains. Single Comb White Cochin Bantams. Eggs after March 1st. Miss Edith Cavanagh, Cavaina Poultry Farm, Orange, Virginia.

Kellerstrass Crystal White Orpingtons, Miles trapnested Single Comb Rhode Island Reds. Baby chicks and eggs for hatching. Forestview Poultry Farm, R. D. 2, Saint Johnsville, N. Y.

We breed only Kellerstrass Crystal White Orpingtons. Parent stock direct from Kellerstrass. Eggs, $3.00, 15; $6.00, 30; $10.00, 60. Circular giving particulars. W. W. Gillum, Barnett, Mo.

S. C. White Orpingtons, two grand pens mated for my especial purposes; a few eggs at reasonable prices; also McAvoy's Houdans. Send for mating list. Dr. F. E. Barnes, Charleston, Ill.

Kellerstrass Crystal White Orpington cockerels; few, $3 to $5. Parent stock direct from Kellerstrass, $30 mating. Eggs, $3 to $5 per 15. W. H. Briner, 1528 Lawn, Kansas City, Mo.

Crystal White Orpingtons (Kellerstrass strain), at Iowa State Fair, 1911, won 2d cock, 2d hen, 3d pen laying contest. Eggs, $2.50 per 15. P. A. Fosselmann, Route 6, Waverly, Iowa.

Orpington Eggs, $3.00 per 15; $12.00 per 100. Birds from $50.00 and $100.00 Kellerstrass trios. My birds have been laying all winter. Cockerels, $2.00. Roy Bowman, Albany, Wis.

Kellerstrass Crystal White Orpingtons; farm raised, hen-hatched cockerels and pullets, sold under guarantee at reasonable prices. Egg orders booked. Harvey Brown, Highmore, S. D.

White Orpingtons of quality. Kellerstrass strain direct. Blue-ribbon winners. Utility eggs, 15 $1, 100 $6. Circular free. Satisfaction guaranteed. J. H. Keefer, Millersburg, Pa.

Eggs for Hatching. Kellerstrass strain (direct). I have eggs from this famous strain of Single Comb White Orpingtons at reasonable prices. Thos. H. Kean, Nantucket, Mass.

Orpingtons—Crystal White (Kellerstrass). The big layers of quality. Breed only one kind, stock and eggs. Send for illustrated catalogue. Crystal Poultry Yards, Fredericktown, Mo.

White Orpingtons. My Orpingtons pay because they are bred to lay, have the size and "Sta-White" color. Eggs reasonable. Satisfaction guaranteed. H. A. Snyder, Tampico, Ill.

Kellerstrass White Orpington cockerels and eggs. Peggy and 221 egg strains $5.00. Utility Strain $3.00 per 13 eggs. L. Lewis, 607 No. Fountain Ave., Springfield, Ohio.

Orpingtons—All single-comb varieties. Won 120 prizes at three state shows. Special bargains in pens, trios and cockerels. Boomgaarns Farms, Box F, Humboldt, Nebraska.

High Class White Orpingtons. Eggs, $1.50 per setting. Here's your chance to get good stock or new blood cheap. Book your order early. Will H. Melzer, Effingham, Ill.

Buy Crystal White Orpington eggs, ten to fifty cents each, of a specialist who is deep in the show business. Winners at the largest shows in Iowa. C. Hummer, Keswick, Iowa.

Orpington eggs on trial. You take no risk. All varieties; premium quality. Also fine cockerels, Blacks or Whites, $1.00 to $3.00. Orpington Yards, Box F, Delavan, Wis.

Single Comb White Orpingtons, Kellerstrass strain. Have won at Altoona, Williamsport, Scranton. Eggs, $2.00, $3.00, $5.00 per 15. D. A. Strayer, Box D, Coalport, Pa.

Kellerstrass White Orpington eggs and baby chicks from prize winners, for sale. Greatest winter layers. Most popular breed of today. Dr. Walter Turman, Marshall, Ill.

Kellerstrass Crystal White Orpingtons. I have some fine pens, farm-reared stock. Eggs in season. Prices right. Satisfaction guaranteed. Frank F. Peck, Bainbridge, N. Y.

S. C. White Orpingtons, blue ribbon winners. If you need any eggs be sure and drop me a card before you buy. I guarantee satisfaction. O. F. Stark, Boxholm, Iowa.

Kellerstrass Strain Crystal White Orpingtons from his $30.00 matings. "We have the goods." Write for prices. M. A. Clark & Son, 25 Myrtle St., Redlands, California.

Kellerstrass Crystal White Orpingtons at live and let live prices. Eggs and chicks. Literature free. Orpington Club member. S. L. Hurley, Box G, Elmira, New York.

Kellerstrass Crystal White Orpingtons. Eggs, $3.00 per setting; two settings, $5.00, from Pen 1. All others $2.00 per setting. James L. Robinson, Route 1, Smithville, Mo.

Kellerstrass Orpingtons. Eggs, $1.50 per 15. Fishel White Wyandottes; eggs, $1.00 per 15. Satisfaction guaranteed. Safe delivery. Walter Steidinger, Forrest, Illinois.

Crystal White Orpingtons. Descendants of a Kellerstrass $500.00 pen. Extra layers, grand type and size. Farm raised. Eggs, 10c each. A. E. Starr, Andover, N. Y.

Kellerstrass and Jackson White Orpingtons. Direct blue ribbon winners, $5; others $2 and $3 setting. Black Orpingtons, $2 a setting. Henry Fisse, Jr., Kokomo, Ind.

A $100 White Orpington Pen. Eggs from $30.00 matings direct from Kellerstrass; circular; eggs, 8c each and $5.00 per 15. Orpington Farm, Niobe, N. Y.

Royal Strain White Orpingtons. Snow white, ideal layers. Baby chicks, $0.00 for 12. Eggs, $2.50 for 15. Buy the best. Royal Yards, J. H. Irons, Elmira, N. Y.

Kellerstrass White Orpingtons. Pullets and yearling hens, $2.00 each. Also mate pens and trios. Eggs at $10.00 per 100. Mrs. Ad Hanna, Big Rock, Ill.

For Sale. S. C. White Orpington hatching eggs, $3.00, 15; birds score 95 points. Utility, $1.25. W. H. Harbison, 338 S. Douglas Ave., Springfield, Ill.

Best pen of White Orpingtons in Texas. Winners at our largest shows. Imported. Eggs, $12.00 for 13. Texas Orpington Farm, Box FG, Flatonia, Texas.

Crystal White Orpingtons, eggs $5, $3 and $2 per 15. Incubator lots from utility stock a specialty, $7.00 per hundred. Mrs. Jess Burford, Waveland, Indiana.

Crystal White Orpingtons. My foundation stock is from a $100.00 trio, and Kellerstrass eggs. Eggs, 10c, $8.00 per 100. Mrs. Ethel Cook, Andover, N. Y.

Quality White Orpingtons. Win every year. Male birds, $3.00 up. Eggs reasonable in season. Whatever you need we have it. C. Colby, Hillsboro, Ill.

Single-Comb White Orpingtons of the better sort. Won first honors at the great Illinois state fair three years in succession. Troy Medaris, Bement, Ill.

Kellerstrass Crystal White Orpingtons. Eggs $2 per 15 up. I have stock from eggs bought of Kellerstrass at $2 each. F. R. Brill, Hampshire, Ill. Box 70.

Extra fine S. C. White Orpingtons. We are booking eggs for early delivery. Write your wants. Granite State Poultry Yards, Box 52, Nashua, N. H.

S. C. White Orpingtons. Selected eggs, from pens of beauties, $2.00 per 15. $10.00 per 100. Packed to hatch. T. H. Burke, No. Bennington, Vt.

S. C. W. Orpingtons. Eggs and few pullets for sale. Pens 92 and 95½ points. Satisfaction guaranteed. J. M. Miller, Crawfordsville, Iowa.

White Orpington trios, $7.50; pens, $10. Cockerels from $3 upwards. Now is the time to order from Robert Broeker, Nevada, Mo.

Single Comb White Orpingtons exclusively. Eggs, $1.50 and $2.00 per 15; $8.00 per 100. Gilbert W. Schnably, McKeesport, Pa.

Single Comb White Orpingtons. Cockerels, pens, trios for sale. Eggs at $10.00 per 100. Dellsworth Barnett, Waynetown, Ind.

Single Comb White Orpington eggs for sale, $3.00 to $5.00 per 15. Mrs. Chas. E. Huested, Nassan, Rens Co., Box 84, N. Y.

Kellerstrass Crystal White Orpington cockerels, $2.50 each; eggs, $2 per 15, or $6 for 50. Robert C. Boss, Route 9, La Porte, Ind.

Kellerstrass Strain White Orpingtons. Eggs, $1.50 per 15; $7.00 per 100. Ed Leclere, Central City, Iowa.

Crystal White Orpingtons, scoring to 95½. Thos. Brogden, Rush Lake, Wis.

Partridge Rocks

Partridge Rock eggs at $2.00 per 15; order direct from this ad or write for description of our stock. Ellis Poultry Farm, Charlotte, Mich.

Plymouth Rocks—Barred

Brooks Pedigreed Barred Plymouth Rocks are today leading their class in both the International Egg-Laying Contest now being held in Missouri and Connecticut. Why? Because they have been trap-nested for several generations solely to increase their egg production and they are showing the development of this quality. High grade pedigreed cockerels for sale from $10.00 up. Eggs for hatching in season. Satisfaction guaranteed. Brooks Sanitary Hennery, Morgan Park, Illinois.

Pilgrim Strain Barred Rocks are great layers and prize winners. This means profit and pleasure. Chicks, eggs and stock sold. Catalogue shows photo of prize winners. Every customer mentioning The Fruit-Grower gets free two eggs from prize winners. Rhodaround Farm, Fairfield, Conn.

Barred Rocks, bred to lay and do lay. Healthy, vigorous stock. No cull matings. Every bird a producer. Eggs for hatching 15, $1.00; 50, $3.00; 100, $5.50. Hens and Pullets $1.50 to $2.00 each. The Fowlers, Box 264, Youngstown, Ohio.

150 Barred Rock cockerels. Bred from best stock. Big, rangy fellows, that will do you good. Mammoth Bronze turkeys, Giant Jumbo King strain, some fine ones. Italian bees and queens; great workers. Write C. Henry Clymer, Bertram, Iowa.

Barred Plymouth Rocks. 50 Barred Rock cockerels from my best pen, headed by Jumbo, Jr. Jumbo has never failed to win in any show room. Satisfaction guaranteed. Don't miss this bargain. Order today. $5.00 each. Eggs, $2.00 for 15. E. H. Wegener, Red Bud, Illinois.

Barred Plymouth Rocks. Eggs, yard A, $4 per 15; yard B, $2.50 per 15. White Mammoth Turkeys, largest in country, weighing 51 lbs., eggs 25c each. Write for stock prices. Geo. W. Wingo & Son, Route 9, Mayfield, Ky.

Barred Rocks, Ringlet strain. 100 large, husky cockerels for sale at prices that will move them. Also some good hens and pullets. K. I. Miller, Box 5, Lancaster, Mo.

For Sale—Standard bred Barred Rocks. Thompson and Bradley strain. Show birds or breeders. write me your wants. G. M. King, Route 1, York, Pa.

Barred Rocks, 1st cock, 1st cockerel, 3d hen at two leading shows, 1912. Shipments subject to approval. Special mating. Eggs, 15, $2.00; 30, $3.00. Cockerels, $2.00. Standard Bred Poultry Farm, Pimento, Ind.

"Ringlets," Ringleys "Ringlets." Rocks that lay and win. Narrow bars long, deep bodies, yellow legs. Cockerels for breeders. Satisfaction guaranteed. Order Eggs. Harry Welch, Rt, 49, Schenectady, N. Y.

Thompson's Imperial Ringlets, Barred Rocks exclusively. Heavy winter layers; eggs furnished January and February, $2 per 15. Young and old stock for sale. W. F. Wright, Sr., Spirit Lake, Iowa.

Congdon's Barred Rocks, bred for utility and beauty. $3,000 invested; 146-acre farm; 1,000 birds for sale. Eggs in season. Write your wants. Booklet free. W. A. Congdon, Box A, Waterman, Illinois.

If you want the best Barred Rocks you ever saw, buy of me; they are bred right and are winners. Stock always for sale. Eggs, 15, $3.00; 30, $5.00; 100, $10.00. R. H. Vanderhoof, Newton, Ill.

Ostrich Plume Barred Rocks, best blood lines of the world, show record unexcelled. Cockerel and pullet mating eggs, $3 for 15; $5 for 30. Mating list free. J. A. Ayers, La Plata, Mo.

Barred Plymouth Rock Eggs, 15, $1.00; $5.00 per 100. Our customers are not disappointed when chicks are grown. 16 years breeding. Catalogue free. S. V. Latcham, Woodward, Iowa.

Ringlet Barred Rocks. Won silver cup for best Barred Rocks, Championship medal for best hen; all breeds competing. Eggs, $1.00 and $2.00 per 15. H. S. Brendle, Robesonia, Pa.

Barred Rock Eggs for hatching from choice high scoring stock. Deep clear barring. Large and vigorous. $1.00 per 15; $2.50 per 45; $5.00 per 100. M. D. Porter, Vandalia, Mo

Barred Rocks. Latham's pullet line, 4 grand pullets and extra fine cockerel, prepaid to you, $10.00. Satisfaction guaranteed. Eggs in season. Oscar Smith, Plainfield, Iowa.

Challenge Laying Strain of Barred Rocks and White Leghorns. The kind that lay the year round. Breeder for 15 Valuable circulars free. Miss F. M. Hart, Route 1, Brandenquit, N. Y.

Ringlet Barred Plymouth Rocks, hatching eggs from matings. Dr. [illegible] $1.00 per 15; $5.00 per 100; surplus eggs replaced. A. W. Kopitsch, 1065 E. 79th St., Cleveland, Ohio.

Barred Rock Eggs, for hatching from pens containing choice show and breeding birds. Cockerels or pullet matings, $2.00 for 15 eggs. Henry Ames, Rockford, Ill.

Barred Rocks, Bradley strain. Prize winning Cockerels, $1 to $5. 15 eggs $1.50, 100 $3.50. Crystal White Orpingtons, Duroc Jersey Pigs. F. F. Wood, Warsaw, Ind.

Blue Ribbon Barred Rocks. Cockerels for sale; big fellows; no better laying stock. Eggs from prize winners, $2.00 per 15. Sunny Slope Nursery, Hannibal, Missouri

Plymouth Rocks, Barred. Bred to lay. Eggs direct. Eggs, $1.50 for 15, $7.00 per 100. Cockerels for sale now. Mrs. Earl Moore, Altoona, Kan.

Page's Barred Rocks noted for utility and prize winners, best pen $10.00. Farmers pens, 50 eggs, $2.50 Mating list ready. S. H. Page, Waverly, Iowa.

Barred Plymouth Rocks. Thompson's cockerel mating and Wales pullet mating, distinct. Stock for sale Eggs, $2.00 per 15. W. I. Roark, Kramer, Ind.

Twenty-five Barred Rock cockerels go at $2.50 each. Large fellows; shipped on approval. I won Iowa state cup year 1910. W. E. Cowan, Waterloo, Iowa.

Choice Barred Rock Cockerels, $1.50 to $2.00 each; eggs, $1.00 per 15 or $5.00 per 100; farm raised. Bred to lay. Dradle Dunbar, Columbus, Kansas.

Barred Rock Eggs. 22 years experience and large alfalfa range. Produce No. 1 quality at minimum cost. Write wants to Amil Burkman Roscoe, Ill.

Barred Plymouth Rocks, five pens mated; eggs, $2.00, 15; $8.00, 100; 25 cockerels and a few females for sale. H. Loutzenhiser, Route 2, Danville, Ill.

Fine Barred Rock Cockerels, 3 for $5.00. Scored birds higher. Prize winning stock for years. Circular free. Mrs. L. W. Heller, Ladora, Iowa.

Barred Plymouth Rocks. Buy of me, get the benefit of my years experience in the breeding and judging of them. W. S. Russell, Ottumwa, Iowa.

Barred Plymouth Rock cockerels, $2. Pullets and hens, $1. Prize-winning and good laying strain. Eggs, setting $2. Geo. L. Spitze, Warsaw, Ill.

Barred Plymouth Rocks—Eggs for sale. Are you looking for bred-to-lay Rocks? Write at once for mating list. H. A. Caldwell, Canton, Ill.

Ringlet Barred Rock eggs, bred from E. B. Thompsons direct; 13, $1; 26, $1.75; 50, $3; 100 lots, $5. E. H. Barden, North East, Pa.

Barred Rocks of Quality, Jersey cattle. Winners at pail and show ring. Stock for sale. Jno. F. Bruns, Box F, Concordia, Mo.

Plymouth Rocks—Columbians

Allen's Columbian Rocks. World's champions. Empire strain. Clean sweep at Madison Square Garden; winners at Philadelphia, Boston, Buffalo, New York. Mating list out. S. C. Allen, Mgr. Valley View Farms, Orchard Park, N. Y.

Plymouth Rocks—Buff

Buff Rocks Eighteen years exclusively. More prizes, six consecutive years, New York State Fair, than all competitors. Stock for sale. Eggs prize mating. Three dollars. Edgewood Farm, Baliston Lake, N. Y.

Buff Rocks—Progeny of "Poley's World's Best." Bred for utility as well as fancy. Unequaled winter layers. Eggs, $1.50 and $2.00 a setting. Satisfaction guaranteed M. H. Davidson, Fishkill-on-Hudson, N.Y.

Buff Rocks. Salyards Celebrated. Winner Kansas City, St. Louis, Des Moines. Bargains in hens. Eggs for hatching, very choice matings. Catalog. R. S. Salyards, Iowa Vice-Pres, Box M, Lamoni, Iowa.

Eggs from prize winning Buff Rocks, $2.00 the 15; 1st cockerel, 1st, 2d, 3d, 4th pullet, Jeffersonville. 1st cockerel, 2d pullet, 1st pen, Piqua, Ohio shows. The Buff Rock Poultry Farm, Jeffersonville, Ohio.

Buff Rock Eggs. Eggs from exhibition stock headed by prize winning cockerel, $2.50 per 15; utility stock, $1.50 per 15. Incubator eggs, $10.00 per 100. Satisfaction guaranteed. Henry Nelson, DeKalb, Ill.

Buff Rocks, good color and shape. Farm raised; vigorous. Stock at reasonable prices. Eggs from select matings, $2.00 per 15. C. D. Powell, Vermilion, Ohio.

Buff Rocks exclusively. 50 selected cockerels, $2.00 to $3.00 each. Stamp for descriptive colored calendar. Branch Valley Poultry Yards, Route 2, Telford, Pa.

Buff Rocks, Eggs and Chicks. Best results at reasonable prices. Safe delivery guaranteed. Send for mating list. E. A. Meyers, Route 9, Mt. Sterling, Ill.

North's Buff Rocks, winners at Buffalo, Rochester and Waverly. Stock for sale. Eggs, $1.50 and $3.00. Write for circular. D. P. North, Waverly, N. Y.

Notice—They win the blue. Just a card and let me tell you how I mated my winter laying Buff Rocks. Write today. N. E. Swedburg, Hildreth, Neb.

Buff Plymouth Rock Eggs for sale. The kind that will pay you because they pay me. Prices friendly. Write me. William A. Hess, Humboldt, Kan.

Two fine Buff Rock cockerels (one a prize bird) and four pullets from prize winning stock. Eggs, $2.50 per 15. Mr. B. T. Buchanan, Okmulgee, Okla.

Buff Rock Eggs for sale, from vigorous, heavy laying strain. 75 cents per setting or $3.50 per 100. Future orders taken. Frank Ware, Butler, Ill.

Golden Buff Plymouth Rocks. Fifteen years a breeder Northern grown and farmed raised. Circular free. L. B. Hanna, Austin, Minn.

Plymouth Rocks—White

High class White Rocks. Fishel strain. Direct. Eggs from wonderful layers. $1.00 per 15; $3.00 per 50; $5.00 per 100; $9.50, 200. Also Fishel White Indian Runner Duck eggs. Henry Heitkamp, New Bremen, Ohio.

White Plymouth Rocks—Won 23 blue ribbons the past season. 300 birds for sale, $1.50 up. My April pullets laid in September. Special discount on egg and baby chicks for early orders. Write H. H. Haskin, Box Y, Robinson, Ill.

U Want a White Plymouth Rock. Blue ribbon winners at St. Louis, Mo. State Fair, etc. To introduce same will sell one setting from selected matings at $2.00. Catalog free. Otto M. Roth, Box C, Kirkwood, Missouri.

White Plymouth Rocks hold the record for egg laying, 289 eggs per her per year. I have bred them exclusively for 20 years and have as good stock as anybody. Eggs, $2.00 per 15, $5.00 per 45, and I prepay expressage. Thomas Owen, Poultry Editor, Topeka, Kan.

White Rocks (Fishel), pens, trios, pairs; cockerels, three to fifteen dollars. Pullets 1st and 2nd; cockerel 1st. Binghamton Exposition. Eggs, $3.00 setting. Dr. J. H. Martin, Binghamton, N. Y.

High Class White Rocks, Fishel strain. 15 eggs, $1.00; 100 eggs, $5.00. Also pure White Indian Runner Ducks, eggs for sale in season. George Lehmkuhl, Box 33, New Bremen, Ohio.

White Rocks; eggs, $2.50 per 15. Choice cockerels, $2.50 to $5.00. Every bird bred from Rochester, Buffalo, Boston, Chicago winners. Roseland Poultry Yards, Branchport, N. Y.

White Plymouth Rocks. Try our eggs, $1.00 and $2.00 per 15. They will please. Breeders and young stock for sale. Rose Lawn Poultry Yards, 238 East Main St., Middletown, N. Y.

Wilson's White Plymouth Rocks, winning at Minneapolis again, demonstrated their quality. Start right. Book now. $1.50 per 15. $6.00 per 100. Wheatland Farm, Owatonna, Minn.

White Plymouth Rocks. Eggs at $1.50 per 15; $6.00 per hundred. Young and old stock scoring 90 to 94 at $2.00 and $5.00 each. Benj. Overbeck, Box F, Edwardsville, Ill.

White Rocks exclusively (Fishel). Fine layers. Eggs from snow white, choice matings, $2.00 per 30; $3.00 per 50. Satisfaction guaranteed. W. H. Dougherty, Sellersburg, Ind.

White Plymouth Rocks of highest quality Eggs and stock for sale, at reasonable prices. Orders booked for spring delivery. Mrs. O. V. Sherpy, Northfield, Minnesota.

Floyd Bend White Rocks. Flock averaging 30 hens produced 5,250 eggs past year. Choice cockereis, $5.00. Eggs, $8.00 per hundred. Lucas Bros., Alton, Iowa.

White Plymouth Rock Eggs for hatching, from large, heavy laying, pure white hens; pens headed by Fishel cockereis. $2.00 per 15. J. LeFevre, Valhalla, N. Y.

Halbach White Plymouth Rocks. Eggs for hatching from winners at State Poultry Show, St. Joseph, Mo.; $2.00 per 15. Robt G. Knipple, South St. Joseph, Mo.

The L. A. Doolittle White Plymouth Rocks. Before you buy, write for prices on baby chicks and eggs for setting. L. A. Doolittle, Route 2, Waukegan, Ill.

White Plymouth Rocks. Fine large birds, good shape, color and head points. Eggs, $1.50; $1.00 per 15. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

White Rock Hatching Eggs $1.50 per 15, $2.50 per 30. Also cockereis, strong, vigorous, free range stock. Fishel strain. C. Falkenberg, Route 4, Rogers, Ark.

White Rocks; males, $3.00, two $5.00; females, $2.00, six $10.00. White Holland Turkeys. D. E. Gray, Specialist, Route 5, Groveland Sta., N. Y.

White Plymouth Rock Eggs, $2.00 for 15, from pen which took all prizes in class at Windom and Madelia shows. Will Curtis, St. James, Minn.

Pure Bred White Plymouth Rock eggs, $1.00 per 15; $3.50 per 100. Baby chicks, $10.00 per 100. Miss Louie B. Galt, Appleton City, Mo.

Write D. J. Ward, Severance, Kan., for choice White Plymouth Rock Pullets.

Polish—Black

White-Crested Black Polish. Z. T. Turner, Eleroy, Ill., breeders of World's Fair White-Crested Black Polish. No better strain. Catalogue free. Five other exhibition breeds.

White Crested Black Polish, the most beautiful chickens in existence. Fine layers, non-setters. Eggs, $2.50 for 13. Birds, $2.50 each. J. E. Jackson, Jackson, Tenn.

White Crested Black Polish, Snowball strain. Handsome mating list free. Booking orders now. Snowball Poultry Yards, 908 Rivermeet Ave., Ft. Wayne, Ind.

Rhode Island Reds

Your Chance. Single Comb Reds bred to lay and win for years. Hens, pullets with fine color and type mated with exhibition males, kept for reserve. $1.00 per 15 eggs. Four best exhibition matings, $5.00 per 15. Cockereis for sale. Rev. F. Schoenbohm, Denver, Iowa.

Rose Comb Rhode Island Reds. American Beauty strain. My birds have made great gains in show rooms this season. If you want large deep colored birds with extra laying qualities, send for mating list now ready. Eggs, $1.00 to $7.50 per 15. A. V. Davis, Ridgefield, Conn.

Rose Comb R. I. Reds, grand color, shape and size. All scored stock. Two choice pens headed by Kansas State Poultry Show winners. Eggs, $1.00 to $3.00 per 15; pure bred farm range, every bird choice, $4.50 per 100. Mrs. Clyde Myers, Fredonia, Kan.

Red Quill Rhode Island Reds will improve your flock, by giving you large, vigorous birds, easy to raise, quick growers, great layers. None better. Large, vigorous cockereis, brilliant red, either comb, $2.00 each. Cary's Farms, Trimble, Ohio.

Rose-Comb Rhode Island Reds Fine utility cockerels, $1.50, $2.50. Parent stock direct from Cornish. Fine layers. White Holland turkey cockereis, $5, from first prize stock. Chicago and Indianapolis. Mrs. Geo. Shepard, Goodland, Ind.

S. C. Rhode Island Reds, ours lay in winter. Tomkins strain, 27 prizes on 30 entries. Trenton, Mt. Holly, Red Bank. Farm raised, great size, type, color. Eggs that hatch $2.00 per 15. Reneville Poultry Yards, Box 3941, Keypert, N. J.

R. C. R. I. Reds. Now booking orders for eggs. from choicest mating, $5.00 per 15. From very select mating, $3.00 per 15. From utility stock, $1.50 per 15; $6.00 per 100. D. E. Hall, life member A. P. C., Route 2, California, Mo.

S. C. R. I. Reds, eggs, farm range, choice laying strain $1.00 per 15, $5.00 per 100; pen No. 1, prize winners, $3.00 per 15. Special mating pen, $2.00 per 15. Indian Runner Ducks, eggs, $1.00 per 12. W. C. Farley, Emington, Ill.

Sprague's Reds, Rose Comb exclusively. The best money and experience can produce. Eggs for hatching, one-third what others charge for same quality. Circular free. Poultry Sprague, Maywood (near) Chicago, Illinois.

You will need the new Rhode Island Red Journal, devoted to the Reds exclusively. Contains a wealth of practical hints about poultry raising on the farm. Send 25c for one year's subscription. Red Journal, Readlyn, Iowa.

Rose-Comb Rhode Island Reds exclusively. Eggs from high-scoring and bred-to-lay stock (Tuttle strain) $1.50 for 15 eggs, $2.50 for 30. Orders booked now for later shipment. A. D. Krebill, Donnellson, Iowa.

I have for sale a nice lot of Single-Comb Rhode Island Red cockereis. Remarkably free from shafting and entirely free from white in wings or tail. Price $1.50 to $2.50. Wm. F. Hoppe, Waddams Grove, Ill.

Single Comb Rhode Island Reds. Eggs from stock scoring 91 to 93, $2.00 per 15; utility stock, $1.00 per 15. Cockereis, $1.50 each. Circular free. Red Bird Poultry Yards, Carlinville, Ill. or Batchtown, Ill.

America's Heaviest Laying Reds. Large, vigorous, pedigreed breeders. Records from 200 to 284, in single, and 291 in rose-comb. Extras to cover infertility. Charles Sweet, Route 4, Swanton, Maryland.

Costs only a postal to learn about Quality Red Eggs at a low price. The Reds that lay eggs and grow big enough to eat. Rose Comb Rhode Island Reds. Art W. Verbeckmoes, Fancier, Atkinson, Ill.

Bailey's Single Comb Rhode Island Reds (Tompkins-Seaman strain). From Madison Square and Boston winners. Eggs, $3, $2, $1 for 15. Circular free. B. M. Bailey, 51 Maple Ave., Napanoch, N. Y.

R. C. R. I. Reds—Some of the best in the west. At the Missouri State Show at St. Joseph on ten entries won four firsts, three seconds, one third, two fourths. Mrs. W. S. Hamilton, Clarksdale, Mo.

Single-Comb Rhode Islands. Eggs, $2.00 and $3.00 per 15. From beautiful stock. Sale Cocks and Cockerels. H. V. Reynolds, Manager. Peerless Yards, 2186 East 43rd street, Cleveland, Ohio.

Thoroughbred Rose and Single-Comb Rhode Island Red cockereis and pullets. Bred from 93 to 94 point males, and hens trap-nested for superior egg production. D. J. Bliss, Carthage, Mo.

Our 200-egg strain Rose Comb Reds, brilliant red color, no slate or white. Good comb and wing, long bodies, blood red eyes. Win wherever shown. John Mierley, Ottumwa, Iowa.

Reds, both combs, yards headed by Owen Farms males, females from winners at Missouri State, Kansas City, St. Joseph, Omaha. Mating list. John Skillman, Platte City, Mo.

Watson's celebrated strain. Rose-Comb Reds. Golden Princess laid 291 eggs in year; 50 hens averaged 240 in year. Cockereis and eggs. Book free. Ira Watson, Box C, Fredonia, N. Y.

Rose Comb Reds—Kaufman and Windhelm strains. Write for matings and winnings. Satisfactory hatch guaranteed. Eggs, $1.50 and $3.00 per 15. Forrest Roberts, Salem, Mich.

Rose Comb R. I. Reds. Eggs from high scoring birds, two dollars per setting. Fawn and White Indian Runner Ducks, white eggs, dime each. J. A. Alleshouse, Trenton, Mo.

Rose Comb Rhode Island Reds. Good breeding cockerels, two to five dollars. Eggs for hatching, one to five dollars. Winning stock. Catalog free. Orr & Dick, Arcadia, Ind.

Single Comb Rhode Island Reds. (Tompkins). Large fine reds. Eggs for sale from grand exhibition or utility pens, $1.00 to $3.00 per 15. C. O. Yost, Route 4, Winchester, Ind.

Rose Comb Reds bred for exhibition and utility. Winners head best pens. Eggs and baby chicks a specialty. Also White Leghorns. Franklin Fox, Pipersville, Pa.

Rose Comb Rhode Island Reds. My hens are bred to lay. Good size and color. Eggs at reasonable prices. Dr. M. B. Reed, Cromwell, Iowa.

S. C. R. I. Reds. My first prize cock bird has never been beaten. Eggs, $1.00, $3.00 and $5.00. Frank S. Culp, Box 99, Butler, Ohio.

Rose and Single-Comb Reds—Real Reds, not Buffs. Old and young stock, with score cards, at $1.50 up. Pekin ducks, stock and eggs. Fred Oertel, Box 111, Brighton, Ill.

Hall's Single-Comb Rhode Island Reds are the "etay red" kind. They took Michigan by storm in 1910. None better. Bargains in stock. B. F. Hall, Jr., Lansing, Michigan.

Single Comb Rhode Island Reds. If you want more show birds and better layers, introduce our strain. Send for circular. Forecastle Farm, Burnt Hills, N. Y.

Single and Rose-Comb Reds and Barred Plymouth Rocks. Pullets and cockereis for sale. Eggs, $3-15. Prices and quality right. Crosby Bros., Monence, Ill.

Eggs from high scoring S. C. R. I. Reds, score 92 to 94½ by Judge Tood. Eggs, $3.00 per 15. Satisfactory hatch guaranteed. H. M. Lange, Grafton, Iowa.

Single Comb Rhode Island Reds. Prize winners. Eggs, $5.00, $2.00 and $1.00 per setting. Range, five dollars hundred. Mrs. J. D. Morley, El Dorado, Kan.

Single Comb Rhode Island Reds. Best high bred utility stock from world's leading strains. Eggs only, per setting, $1.50 to $2.00. Burt Roberts, Milan, Mo.

Michigan Royal Red strain Single Comb Reds that are red. Ninth year. Heavy winter layers. 15 eggs, $1.50 and $3.00. C. W. Southworth, Dowagiac, Mich.

Rhode Island Reds, both combs. (Sibley strain), large size, red to the skin. Good shape, good layers. Write for mating list. Riddle & Sons, Le Roy, Ill.

Webb's Single Comb Reds. Ten years experience. Layers and winners of state cup, etc. Free circular will explain. E. M. Webb & Son, Waukesha, Wis.

Rose Comb Rhode Island Reds, winning first prizes at six state shows and nine association shows. Stock for sale. Mrs. F. C. Krueger, Charles City, Iowa.

R. C. R. I. Reds. Shape and color specials, won wherever shown. Bred to lay. Eggs $1.00 to $5.00 for 15. Edgedale Poultry Plant, Wheeling, W. Va.

Thoroughbred Rose-Comb Rhode Island Reds. Good laying strain. Eggs from scored pen, 15 for $3; utility, $1.75. C. C. Mason, Route 8, St. Joseph, Mo.

Custer's Single Comb Reds won 23 prizes on 29 entries at four different shows this winter. Settings, $1.00, $2.00 and $3.00. Oliver Custer, Xenia, Ohio.

Reds, both combs. You can pay more, but you get no better blood. Circular for chicks and eggs. J. C. Hamilton, Route 2, Box 110, New Castle, Pa.

Single-Comb Rhode Island Reds. Some well bred birds, at right prices. Cockereis or pullets. Eggs in season, $2. T. F. Higley, Fairfield, Iowa.

Reds, Single and Rose Comb, prize matings. Large, vigorous, rich colored, eggs, $6.00, 10; $20.00, 100. Guaranteed. E. E. Wells, Cohoes, N. Y.

R. C. Rhode Island Reds, prize winners for 6 years. Egg orders filled promptly. Send for mating list and prices. H. G. Poehling, LaCrosse, Wis.

R. C. Reds, high in quality. Write for prices on stock and for mating list. Guarantee satisfaction. W. J. Cocklin & Son, Rising City, Neb.

Get the best—Dark Red Rose Comb Reds—winners of 50 premiums, eggs $2 00 and $3.00 per 15; infertiles replaced. O. T. Grimes, Hunter, Okla.

"The season is on—let me supply you with high scoring Red eggs at $3.00 per setting. Write for matings." B. C. Knodle, DeKalb, Ill.

Spanish—Black

White-Face Black Spanish—Eggs 15 for $1.50, 30 for $2.50, 100 for $5. Good stock for sale. Louella E. Jaqua, Portland, Indiana.

Wyandottes

500 White, Golden and Columbian Wyandottes for sale. Splendid breeding and show birds. Eggs for hatching from selected stock. Mrs. D. C. Jones, Nashotah, Wis.

Black and White Wyandottes, stock and eggs for sale. Black Wyandottes won first and second hen and grand champion cockerel at Springfield, Ill. state show. Eggs, $3.00 per 15. G. D. Duncan, Alton, Ill.

Wyandottes—Buff

Best for farmer or fancier. Eggs from prize winning, special winter laying beauties, $2.00 per 15; $10.00 per 100. L. D. Van Rensselaer, Kent, Ohio.

Wyandottes—Golden

Golden Wyandotte breeder, 12 years. Have two large range pens. Good laced blocky birds. Eggs, $2.00, 30; $3.00, 60. Gerhard F. Hellman, West Point, Iowa.

Wyandottes—Partridge

Partridge Wyandottes with a national reputation won most all prizes Kansas State Show two years. I have the right color, shape and size, so they cannot help but win. A dandy flock in a five acre orchard. Eggs, $1.50 for 15; $2.50 for 30. C. A. Page, Salina, Kan.

Elm Grove Poultry Farm. Mahogany strain Partridge Wyandottes. Matings scoring to 94½. Satisfaction guaranteed. Eggs, $3.00 per 15. F. E. Carpenter, Cedar, Iowa.

Wyandottes—White

White Wyandottes. Eggs from show winners exclusively, which several scored to 96; never defeated, won 53 premiums, 3 shows, 19 1st and 2d. Eggs, $1.00 and $2.00 per 15. Write for photos in mating list. You'll buy sure if you do. J. H. Willis, Jeweler, Norris City, Illinois.

At recent Utica, N. Y. show in hot competition with 110 White Wyandottes, seven out of nine birds I exhibited won. Will give better value than anyone. Try me. Send for mating list. Stock for sale. A. H. White, Glenwood Ave., Syracuse, N. Y.

Penfield's Prize-taking White Wyandottes. Big winners at such shows as Minneapolis and state fairs. Lay in the coldest weather. Eggs for hatching from free range. Standard bred stock. Write us. H. J. Penfield, Box A 324, Hudson, Wis.

White Wyandottes. Prize winners at the great Williamsport show. Nothing nicer than a flock of pure white birds. Plump, quick maturing, and great layers. Eggs, $1.50 per 15. Write me your wants. Jno J. Hafner, Box J, Woolrich, Pa.

White Wyandotte cockerels for sale. The typical Wyandotte sort, broad, deep body, short, stout shanks, 9 to 10 pounds each. Winners in shows this year. Only a few left. Price reasonable. Hiram Long, Edgerton, Ohio.

White Wyandottes, Dustons. Line bred for 10 years, fit to win anywhere. Heavy layers. Buff Cochin Bantams. Solid buff, correct shape and size. Eggs, $3.00 per 15. Edwin A. Bennett, 103 Remsen St., Astoria, L. I., N. Y.

Excelsior White Wyandottes won ten ribbons Grand Rapids 1911 show, four at Holland, December, 1911. Winners whenever shown. Good cockereis. Eggs for hatching. John M. Hoogerhyde, Bates St., Grand Rapids, Mich.

Stay White Wyandottes that carry blood of 200 to 272 egg ancestry, fine combs, yellow legs, red eyes and lobes; eggs, 15, $1.50; 30, $2.50; 50, $3.75; 100, $6.00. Satisfaction guaranteed. Calvin Norman, Route 2 F, Dexter, Mo.

White Wyandottes. Fine line-bred Dustin stock. Winners St. Louis, Portland, Muncie. Fifteen eggs, $2.00; thirty, $3.50. Utility, fifteen, $1.00; hundred, $5.00; circular free. Herbert Smith, R. F. D., Bluffton, Ind.

White Wyandottes. For winter layers and quality there are none better. Write us if you want stock. Eggs or day old chicks. Absolute satisfaction guaranteed. Cederdahl Poultry Farm, Owatonna, Minn.

White Wyandottes. Eggs and choice stock. 1909 to 1912 at Kansas state poultry show. Won 18 prizes. Eggs, $4.00 per 100. Send for show record and prices. Theo. B. Young, Route 1, Box 86, Wichita, Kan.

Peterson's Superb White Wyandottes. Great silver cup winners, fine layers. Winners Chicago, St. Louis, Galesburg and other shows. Send for catalogue. Wm. A. Peterson, Box F. G., Galesburg, Ill.

White Wyandottes that win the blue. Missouri and Illinois winners. Alton pullet, scored 96. Staunton pullet, scored 96½. Exhibition eggs, $3.00; Utility, $1.50. B. Pavey, Bunker Hill, Ill.

White Wyandottes, Dustin strain. Cockereis, full matured, $3.00 to $5.00. Great laying strain. Eggs, $1.00 to $1.50 per 15. Satisfaction guaranteed. Chas. F. Thomas, Galveston, Ind.

Right now, we have some special bargains of a few show room specimens in White Wyandottes. If interested write us. All orders on approval. Wyandotte Ranch, Kiesling, Wash.

Top-Notch White Wyandottes—Show birds. Fine utility stock or high-grade breeders at rock bottom prices. If you want quality, write us. Schmied Bros., Route 2, Mt. Healthy, Ohio.

White Wyandottes, Superb strain. Winners at Altoona and Greenburg, Pa. Large, pure white, heavy laying birds. Send for mating list. James A. Bender, Box C, Coalport, Pa.

Rowland's Invincible White and Columbian Wyandottes are royal winners. Stock and eggs for sale. A satisfied customer or money refunded. Frank Rowland, New London, Ohio.

High Grade White Wyandottes. Eggs from these should produce some winners. Price, $1.50 per 15. Surplus stock sold. Square deal always. Wm. E. Compton, Bridgeport, Ind.

White Wyandottes that win. Won at Delevan and Waterford, Wis. A few cockereis for sale at prices that are right. Egg orders taken now, $3. H. C. Berger, Waterford, Wis.

White Wyandottes that have won at all the leading shows and will win for you. Eggs from prize winning matings, $3.00 and $5.00 per 15. R. S. La Rue, Bellfontain, Ohio.

Thoroughbred White Wyandotte Eggs, $1.50 and $3.00 per setting 15. Baby chicks. Show and heavy egg type combined. A square deal. Robert Fetrow, Etters, Pennsylvania.

White Wyandottes, prolific laying strain. Tested eggs from vigorous stock will secure good hatch, $1.50 per 13, $8.00 per 100. Wm. F. Schaffner, Lansdowne, Pennsylvania.

White Wyandottes. Been breeding them continuously since 1895. The kind that weighs, lays and pays. Send for circular. A. Franklin Smith, Route 9, Ann Arbor, Mich.

High Class White Wyandottes. Fine layers. Eggs from select matings, $1.25 per 15; $2.00 per 30. Cockerels, $2.00. Pullets, $1.50. M. G. Wells, Sellersburg, Indiana.

Snow-White Wyandottes exclusively. Farm range, splendid stock. Satisfaction guaranteed. Eggs, $1 per 15, $4 per 100. Mrs. Christian Oveson, Osage City, Kansas.

White Wyandottes—Choice cockereis from blue-ribbon winners; they will please you. Eggs from choice matings after February 1st. Harley R. Stick, Ridgeville, Ind.

White Wyandottes. Cup winners and great egg producers. Nine firsts at two shows. Line bred for 12 years. Mating list free. Alden Rehm, Orrville, Ohio.

Utility White Wyandottes, laying during zero weather. Won 1st hen, 2nd cockerel, 2nd pullet, 2nd pen. A. W. Gluesenkamp & Son, Box 58, Batesville, Ind.

White Wyandottes, prize winners, heavy laying strain. Special mated pens. Eggs, $2.00 for 15. White Cochin Bantams. I. A. LeMaster, Bushnell, Ill.

Imperial strain White Wyandottes from prize winners. Cockerels, $1 to $3; cocks and pullets, $1; eggs, 100 $5, 15 $1. A. H. Seymour, Swanton, Neb.

White Wyandotte show birds for sale. Price reasonable. Ask for my show record and mating list. Otto Peterson, Jr., Rt. 7, Axtell, Neb.

Wyandottes—Silver Laced

Silver Wyandottes. Winners at all the big shows. Philadelphia, Madison Square Garden, New York. Most prizes special for best display. If you need real winning Silvers, write immediately. All will be satisfied. Eggs while they last. Dr. Henry M. Kalvin, Avenue U, and East 15th St., Brooklyn, N. Y.

Silver Wyandottes; won first cockerel first pen; first, second, third pullets at Woodhull; birds scoring 94. 15 eggs, $2.00, $3.00; 30, $3.50, $4.50; 50, $5.00, $6.00. Jas. Roberts, New Windsor, Ill.

Silver Wyandottes—The great egg and table fowl; the breed for fruit growers. Cocks and cockerels, $2 up. Eggs by the sitting or hundred. Circular. Glenoak Poultry Yards, Kinmundy, Ill.

Silver Wyandottes of quality. Prize winners. Best winter layers. Good stock for sale, reasonable. Satisfaction guaranteed. Also some Japanese Silkies. J. F. Spence, Clinton, Iowa.

Silver Wyandottes exclusively for 28 years. Your success depends on your foundation stock. Compare prices and show winnings, then act. M. H. Leidy, R. F. D. 2, Souderton, Pa.

Fifty lusty Silver Wyandotte breeding cockereis, from noted winners, $2 each; just the birds to add vigor to your flock. Hoffman, Allegan, Michigan.

All Varieties

America's finest, pure bred poultry, bantams and waterfowl. All varieties. Winners everywhere. Satisfaction guaranteed. Large fowl and bantam catalogs, each 2c. F. C. Wilbert, Grand Rapids, Mich.

All Breeds

90 Varieties Poultry, Eggs, Pigeons, Dogs, Hares, Parrots, etc. List free. Colored descriptive 60-page book, 10c. J. A. Bergey, Box 60, Telford, Pa.

Miscellaneous Poultry

World's Best Rhode Island Reds and Imported White Indian Runner Ducks. My 1st championship pen of Reds this season is headed by 2nd Madison Square, New York, cock, and contains 1st Madison Square pullet, December, 1910, valued at $10,000.00; also 1st, 2nd, 3rd, 4th and 5th Madison Square pullets, January, 1910. The greatest pen of "Reds" ever put together. Write for free catalog. Southern Poultry Farm, Wade Hampton, Prop., Rogersville, Tenn.

Eggs from Turkeys, Toulouse and White Embden Geese. Rouen, Pekin, Muscovay and Runner Ducks. Rhode Island Reds. White and Brown Leghorns. Spangled Hamburgs. Barred, White and Buff Plymouth Rocks. Black Langshans, Wyandottes, Houdans. Pearl and White Guineas. Bantams. Rabbits, fancy Pigeons. Write for circular. D. L. Bruen, Platte Center, Neb.

Empire Poultry Yards, Fort Plain, N. Y., breeds Single Comb White, Brown and Buff Leghorns; also Houdans, Rumpless fowls. Indian Runner Ducks, Pearl Guineas. Buff Cochins, Light Brahmas. In Bantams, Black, Reds, Red Pyle, Buff Cochins and Golden Sebrights. Winners, famous for shape, color and egg production. Eggs, $2.00 setting. Mention Fruit-Grower.

Poultry Photo Post Card, mating list and catalogue free. Stamp appreciated. Eggs for hatching from "Trio Purpose" White Wyandottes, best for show room, egg basket and market. Mammoth "Rainbow" Bronze Turkeys. "Standard" Indian Runner Ducks. Joseph Shaw, Desk B, Ostrander, Minn.

White and Silver Laced Wyandottes, Rose Comb Rhode Island Reds, Barred Plymouth Rocks, for type, color and quality, can please you. Blue ribbon winners. Located here 36 years. Eggs for hatching. A few cockereis for sale. Satisfaction guaranteed. Wm. Feakes, Grand Junction, Iowa.

Eggs for hatching from high scoring prize winners. Barred and White Rocks, Buff, Brown and White Leghorns, White and Silver Laced Wyandottes, Black Minorcas, White and Buff Orpingtons, S. C. Rhode Island Reds. Write for prices. Lebanon Poultry Yards, Lebanon, Neb.

Ten cents each for all eggs; 50 per cent hatch guaranteed. White Wyandottes, White Plymouth Rocks, Single-Comb White Leghorns and Black Orpingtons. Eggs from our Madison Square matings, $5.00 per 13. Comiscliffe Poultry Farm, Lock Box 19, Tenafly, N. J.

Young's Strain Single Comb White Leghorns, Single Comb Rhode Island Reds, Buff Rocks and Duck Wing Games. Bantams, $1.00 and $1.50 per 15 eggs; $5.00 and $7.00 per 100. Bred for eggs and show room. Your satisfaction is our success. E. G. Yocum, Souderton, Pa.

S. C. Reds, White Rocks, S. C. White Leghorns, Buff Rocks and Silver Wyandottes. America's leading strain. Hen hatched and reared. Stock, eggs and chicks at right prices. Write your wants before buying elsewhere. Joseph Anthony, Rt. 4, East Berlin, Pa.

Single Comb White Leghorns, Young's and Wyckoff's strains direct. 15 eggs, $1.00; 100, $5.00. Crystal White Orpingtons, Kellerstrass strain; 15 eggs, $2.00; 100, $9.00. White Indian Runner Eggs, 12, $4.00. White Feather Farm, New Bremen, Ohio.

Beautiful swans, fancy pheasants, peafowl and other ornamental stock. Also partridges, pheasants, quail, deer, rabbits, etc., for stocking purposes. Send 4c for illustrated descriptive circulars. Wenz & Mackensen, Pheasantry & Game Park, Yardley, Pa.

Crystal White Orpingtons, Kellerstrass; R. C. White Orpingtons, White Langshans, S. C. White Leghorns, White Wyandottes, Black Minorcas, $1.50 to $2.00 per setting. Silver Spangled Hamburgs, cockereis $3.00. Selma Shanauder, Pilot Mound, Iowa.

Make the Right Start today! Sell your mixed chickens and send $10.00 of the money for a pen (cockerel and four females) Reds (single), Partridge Cochins, Columbian Wyandottes. Satisfaction guaranteed. W. J. Casey, Knoxville, Iowa.

Maplewood Poultry Farm, Bradford, Ky. High class poultry at living prices. Light Brahmas, White Orpingtons, White Wyandottes, Black Minorcas, Barred Rocks, Rhode Island Reds, Indian Runner Ducks. Satisfaction guaranteed.

Hoyles S. C. White Leghorns, prize winning egg machines. Cockereis and hens for sale. Prices reasonable. Eggs and baby chicks. Special rates in quantities. Indian Runner duck eggs. The Hoyle Poultry Farm, Whittier, Iowa.

Mack's Poultry Farm—Breeders of America's best Buff Langshans and Black Orpingtons. Winning all we competed for at the big Toledo show. Eggs, $3.50 for 15. Mack's Poultry Farm, 1817 Navarre Avenue, Toledo, Ohio.

Rose Comb Brown Leghorn, Single Comb Buff Orpington, 15 eggs $1.00; 30, $1.75. Indian Runner Ducks, 13 eggs, $1.00; 26, $1.75. White African Guineas, 15 eggs, $1.25; 30, $2.00. Honey Creek Poultry Farm, Kahoka, Mo.

High Class Black Langshans. Pekin Ducks, Mammoth Bronze Turkeys. Winners, Madison Square Garden. Prices reasonable. Satisfaction guaranteed. Circular. Lorenz & Co., Springvalley Farm, Perryville, Missouri.

Buff Leghorns and Kellerstrass White Orpingtons. Prize winners at Altoona, Williamsport, Du Bois, Greensburg and Ohio State Fair. Eggs from these grand prize winners, $2.00 per 15. R. E. Giles, Coalport, Pa.

Kellerstrass Crystal White Orpingtons. Some prize winners. Also Reds and Minorcas. Standard bred. Eggs, $1.50 to $5 per 15. Life member American Poultry Association. Prof. F. H. Jackson, Middlebury Center, Pa.

Blue Ribbon Winners, Chicago, St. Louis, Indianapolis. Rose-Comb white Leghorns. White Wyandottes; Partridge Wyandottes. Stock for sale. Eggs in season. Max Fries, Rural Route, Warsaw, Indiana.

Kellerstrass White Orpingtons, Fishel White Plymouth Rocks, that are prize winners and money makers. Eggs, $2.00 per 15; baby chicks, $25.00 per 100. Satisfaction guaranteed. John McKibbin, Goshen, Ind.

Langshans, Reds, Wyandottes, Orpingtons and Leghorns at farmers' prices. Good quality, some prize winners. Young stock for sale. Eggs, $1.00 and $2.00 per 15. Ideal Poultry Farm, Indian Springs, Ind.

Single-Comb Leghorn and Single-Comb Rhode Island Red eggs and chicks from good stock. Eggs, $5 to $12 per 100. Chicks, $10 to $20 per 100. Satisfaction guaranteed. C. H. Zurburg, Route 1, Topeka, Ill.

Choice eggs for hatching from 52 varieties of chickens, ducks, geese, turkeys, 130 premiums at one exhibit. Largest poultry farm in northern Iowa. Stamps for catalog. E. & J. W. Trettin, Grafton, Iowa.

Single and Rose-Comb Black Minorcas. Single and Rose-Comb Reds. Eggs, stock and baby chicks, from Quincy and Campoint, Ill., show winners. South Side Poultry Yards, 601 Jackson St., Quincy, Ill.

Six Single Comb Breeds, Kellerstrass White Orpingtons, Buff Orpingtons, Barred Rocks, Partridge Rocks, Black Minorcas, Rhode Island Reds, males and females, $1.00. N. P. Cronk, Montour, Iowa.

Single Comb Buff Orpingtons, Single Comb White Leghorns, Indian Runner Ducks. Exhibition, heavy laying combined. Eggs, $1.00 per 15. Cedar Hedge Poultry Farm, Box 1101, Savannah, Ohio.

White Wyandotte and Pekin Duck eggs, 15, $1.00; 30 or more, 6c each; best 2 pens headed by males we refused $100.00 each, 15, $3.00; 30, $5.00; quality, not quantity. Mrs. Doom, Ashland, Neb.

Eggs, $1.00 per 15; $2.00 per 40; from thoroughbred Brahmas, Rocks, Wyandottes, Reds, Minorcas, Leghorns, Hamburgs, 19 varieties. Catalog. 29 years experience. S. K. Mohr, Coopersburg, Pa.

Rocks, Wyandottes, Leghorns, Hamburgs, Toulouse, Emden, China geese; Pekin, Muscovey ducks; white turkeys, guineas; prize-winning stock. Send for catalogue. B. F. Kahler, Hughesville, Pa.

Seiple Poultry Yard. Eggs for hatching from S. C. White Leghorns, Barred Plymouth Rocks and Rhode Island Reds. $5.00 for a set of 13 eggs; $9.00 for 26 eggs. Monroe Seiple, Bethlehem, Pa.

Kellerstrass White Orpingtons, Buff Orpingtons, Black Minorcas, Columbia Wyandottes, Rhode Island Reds. Choice cockereis for sale. Eggs in season. W. S. Chalker & Sons, Waters, Mich.

Black Langshans; eggs, $1.00 setting; $5.00, 100. Rose Comb Brown Leghorns and Single Comb White Leghorns; eggs, $4.00, 100. Satisfaction guaranteed. Golden Gate Farm, Lafayette, Indiana.

Rose Comb Buff Orpingtons, Golden Wyandottes. My famous line bred strains of winter layers and show winners. Eggs, $3.00 and $5.00. Circular. Dr. R. O. Woodruff, Box A, Waterford, Pa.

From $1,000.00 Madison Square and Crystal Palace England winners. Grand pullets, $2.00; pens, 1 cockerel, four pullets, $9.00. Eggs, best, $1.00 per 13. A. M. Sinsaugh, Wyalusing, Pa.

Ever Best Strain. Rose and Single Comb Buff, Single Comb Black and White Orpingtons, Black Minorcas, Rhode Island Reds. Eggs for hatching. George W. Ellerman, Box 95, Piqua, Ohio.

50,000 Single-Comb White, Buff and Brown Leghorns, Minorcas, Rocks; baby chicks, eggs; Belgian hares, Collie dogs. Catalogue, stamps. Failing Poultry Farm, La Fargeville, N. Y.

Sixty-Page Catalogue Free. Sixty varieties chickens, ducks, geese, guineas, turkeys and hares. Blue ribbon winners. Stock and eggs for sale. Lowest prices. H. A. Souder, Box 10, Sellersville, Pa.

48 varieties pure bred Chickens, Ducks, Geese, Turkeys, Guineas, Pea-Fowls, Incubators, 6000 prizes. Sale circular free; 100 page catalogue, 4c. Zlemers Poultry Farm, Austin, Minn.

Single Comb Buff Orpingtons, Buff Leghorns and White Leghorns. Eggs for hatching, $1.00 per setting of 15. Also some good cockereis for sale at $2.00. Henry Y. Shirk, LaPaz, Ind.

Thoroughbred Poultry, Anconas, Rhode Island Reds, Houdans, Indian Runner Ducks. Prize pens, $1.00 per setting; others, 2 settings, $1.00. Euclid Poultry Farm, Benton Harbor, Mich.

Sixty varieties fancy poultry—geese, ducks, turkeys, chickens, pea fowls, guineas, pheasants, pigeons, ratdogs. New 60-page catalogue, 4 cents. F. J. Damann, Farmington, Minn.

White Rock eggs, $3.00 per 100. Farm range White Holland Turkey eggs, $3.00 for 12. Brown Leghorn eggs (from separate farm), $3.00 per 100. Mrs. Henry Hanman, Browning, Mo.

Eggs, Hatching. Imported White Orpingtons. Exhibition Single Comb Rhode Island Reds. Utility Reds. Fawn and White. Indian Runner Ducks. Write E. L. Andrews, Maryville, Mo.

Sixty White Holland turkeys for sale. Also African and White China geese and Black Cayuga ducks. Wanted, White Orpington pullets. Floyd S. Beaumont, Kansasville, Wis.

Barred Rocks. Buff and Black Orpingtons. The kind that will please anybody. Eggs and stock for sale. Write for convincible catalog. Watertown Poultry Farm, Watertown, Ill.

Silver-Spangled Hamburgs, Partridge Plymouth Rocks, Houdans, Light Brahmas, highest quality, lowest prices. Winners and breeders for sale. Eggs in season. Will Clark, Sullivan, Ohio.

Buff Orpingtons and White Rocks from Indianapolis and Chicago winners. Elegant birds of correct shape and color. F. L. Shaw, Route 1, Hutsonville, Ill. Licensed poultry judge.

Partridge Wyandottes and Mammoth Bronze turkeys. Prize-winning strains. Stock for sale. Reasonable prices. Egg orders booked now. Write Mrs. M. F. Oldfield, Buffalo, Mo.

Thirty breeds, geese, ducks and chickens. Send 3 cents for a large catalogue. Minkel & Co., Mapleton, Minn.

White Wyandottes, Rhode Island Reds. Choice, eggs $3.00 per set. Thomas G. Ashmead, Williamson, N. Y.

America's best egg producers. Rose-Comb Reds, Runner ducks, Toulouse geese, eggs, chicks and ducklings. Give us a trial. Prices reasonable. Frank Kilpatrick, Warren, Ohio.

Rose Comb Rhode Island Reds, Columbian Wyandottes, winners wherever exhibited; heavy layers. Eggs, $1.00 to $5.00 per 15. Mating list free. A. D. Williams, Minneola, Kan.

Eggs for hatching from line bred trap nested Anconas and S. C. Brown and White Leghorns. Bred for egg production, at reasonable prices. Write to M. L. Miller, Johnston, Pa.

Pure Bred Turkeys, White Embden Geese, Guineas, Plymouth Rocks, Single Comb Brown Leghorns. Prize winners. Eggs for hatching; quality; right prices. John Garbee, Billings, Mo.

White-Crested Black Polish, White Wyandottes, White Orpingtons. Breeding pens of the best. Eggs, $5 to $10 per 15. Stock in season. Edward F. Waldron, Dighton, Mass.

White Leghorns, Rhode Island Reds; best registered Berkshires, Hogs and Pigs, Chickens and Eggs cheap. Write quick. E. A. Rogers, Meadowbrook Farm, Box F, Hixson, Tenn.

Thoroughbred Barred Rocks, Reds, Pekin, Muscovy, Runner ducks. Homer pigeons; White Guineas. Eggs, $1 up. Stock for sale. Elmwood Farm, Route 13; Grand Rapids, Michigan.

Sixty Eggs; $3.00; 15, $1.00; two medicated nest eggs with each order. 26 varieties; poor hatches duplicated at half price. Circular free. Whitney & Son, Triangle, N. Y.

Barred Rocks, Brown Leghorns, Silver Laced Wyandottes and Reds. Eggs from pens, $1.50 for 15. Write for free catalog. Address Sunnyside Poultry Farm, Owensville, Mo.

Golden Wyandottes and Single Comb Buff Orpingtons. Fine winter layers, prize winning stock. Eggs, $1.25 and $2.00 per 15. Circular free. John Tuttle, Princeton, Mo.

White Plymouth Rocks, White Holland turkeys, Buff Orpingtons, Indian Runner Ducks. Ten years breeding and exhibiting. Mating circular free. Verne D. Stock, Stockton, Ill.

Illustrated Catalogue Free. Barred and White Rocks, White Wyandottes. Birds and eggs for sale. Bee keepers and poultry supplies. Large stock. H. S. Durby, St. Anne, Ill.

Trapnested White Wyandottes and Kellerstrass White Orpingtons. 227 egg strain, bred from Chicago and Pittsburg winners. Eggs, $3.00 per 15. K. J. Heabler, Attica, Ohio.

Buff Orpingtons, White Plymouth Rocks. Frank Meek, breeder and exhibitor. Winners in the great Little Rock Show. Eggs, $3.00 and $5.00 per 15. Argenta, Ark.

Stock, eggs, baby ohicks. From winners at Springfield, Jacksonville, Pittsfield, Illinois, 1911. Write for circular. Southern Slope Poultry Farm, Box A, Jacksonville, Ill.

Special for February, 12 White Langshans or Buff Rock females, $13.00. 15 eggs, $1.25. M. B. Tom, $5.00. Superior quality. Mrs. L. Mumpower, Chillicothe, Mo.

Rhode Island Whites, unequaled as layers. Also Rhode Island Reds, Rose Combs, Poland China hogs. Eggs and stock for sale. W. A. Elam, Mulberry Grove, Ill.

White Crested Black Polish, S. C. Black Minorcas and Buff Wyandottes. Stock for sale. Eggs, $2.00 per 15. Satisfaction guaranteed. Henry Yaggy, Woodburn, Ind.

Buff Orpingtons and Barred Rocks. Winners Missouri State and other large shows. Eggs, $2.50 to $5.00 per 15. Satisfaction guaranteed. J. L. Gallatin, Amsterdam, Mo.

Doyle's Two Egg Machines, Single Comb Black Minorcas and Indian Runner Ducks. Cockerels, hens and drakes for sale. Eggs in season. John Doyle, Center, Missouri.

Black Langshans, Buff Orpingtons, Single Comb Rhode Island Reds. Winners of 96 ribbons. 15 eggs, $2.00. Baby Chicks, 25c. C. R. Smith, Burnt Prairie, Illinois.

Write Brock Bros., Mill Shoals, Ill., for eggs from high grade prize winning Black Langshan, Light Brahma and S. C. Rhode Island Reds. Prices reasonable.

Orpingtons, Single Comb, Buff, Black and White. Cockerels, $2.00 to $5.00. Pens, $10.00 to $15.00. Eggs, $2.50 for 15. Elk Ridge Poultry Yards, Sheller, Illinois.

Eggs, setting or hundred lots. Barred Rock, Buff Orpingtons, Reds, Indian Runner Ducks. Also Pheasant eggs. Stock for sale. Julia E. Wise, New Market, Iowa.

Rhode Island Reds, White Orpingtons (Kellerstrass), Houdans. Winter layers. Stock; eggs for hatching; trios. Write wants. D. S. Brenneman, Council Bluffs, Iowa.

Good bargains in Barred Rock pullets, Buff Orpington and Rhode Island Red cockerels. Indian Runner Ducks and fancy pigeons. Julia E. Wise, New Market, Iowa.

State Fair, Rochester, Buffalo, winners. Columbian Wyandottes. Barred Rocks, Buff Leghorns, Bronze turkeys, Rouen ducks. A. G. Barlow, Box 6, Medina, N. Y.

Eggs—White Runner ducks, Partridge Rocks, White and Fawn Runner ducks, Single Comb Brown Leghorns. All winning stock. Write J. E. Gault, Chippena Lake, Ohio.

White and Brown Leghorns, White and Barred Rocks, Rhode Island Reds, several first prizes. Eggs, 75c, 13; $3.50, 100. Mary Dowell, Granada, Prowers Co., Colo.

S. C. Orpingtons, White, Buff, Black. Brahmas, Light, Buff Orpington Eggs $3.00 per 15. Brahmas, $2.00; fine layers. C. C. Arnold, Millers Falls, Mass.

100 kinds and eggs, poultry, pigeons, pheasants, airedales. Special price. Overstocked. Scotch collies, Jerseys, registered. Pauly's Pheasantry, Kahoka, Mo.

Infertile eggs replaced without cost. Fishel's White Rocks, $1.50 per 15; Wyckoffs S. C. White Leghorns, $1.00 per 15. Arthur Bear, Route 10, York, Pa.

Rose Comb Buff Leghorns, perpetual layers. Buff Orpingtons, winter egg machines, 15 guaranteed eggs, $1.50. Goldenrod Poultry Farm, Mesa, Colo.

If you want Orpingtons, Reds, Leghorns, Wyandottes, Rocks; males or females; we can save you money. Write us anyway. Lee Harris, College View, Neb.

For Sale—Single Comb White and Buff Orpingtons. Cocks, cockerels and pullets. Eggs and baby chicks in season. H. E. Poseley, Stewart, Minn.

Ribbons to burn, winners every show. S. and R. Comb Reds, S. C. White and Black Orpingtons. $2.50 per 15. Dr. W. H. Craft, Coalport, Pa.

Barred Rock, Single Comb Brown Leghorn eggs from fine stock, 15, $1.00; 100, $5.00; 26 years a breeder. Ed. B. Murphy, Box 9, Carmel, Ind.

Rhode Island Whites, S. C. Reds, White Cornish, Rose Comb White Leghorns. The kind that win, lay and pay. C. W. Knox, Pulaski, Pa.

Bargain Prices. All leading varieties land and water fowl. Large picture in colors and price list mailed for 10c. P. G. Shelly, Florin, Pa.

Toulouse Goose Eggs, Runner Ducks, Rose Comb Reds eggs, stock and chicks. Order early. Frank Kilpatrick, Route 4, Warren, Ohio.

Black, Buff, White Orpingtons. S. C. White Leghorns. Write for prices. Buckel Poultry Yards, West Allis, Wis.

Eggs, any fowl, $10.00 a hundred. Express prepaid. Dr. Thos. Dietrick, Box S, Washington, N. J.

Chicks

Baby chicks, 10c to 20c; stock, $1.25 to $5; eggs, $5 per 100 up. Rhode Island Reds, both combs. White and Columbian Wyandottes, White and Buff Orpingtons, Pekin, Rouen and Indian Runner ducks, Toulouse geese, Bourbon Red turkeys. Catalogue free. G. A. Mitchell, Dept. B, Ridott, Ill.

Baby Chicks; lively little fellows from range stock. No egg breaking; cheaper than hatching them. Send 10 cents for progressive, best of all poultry books. Free circular. Eggs and chick boxes. Ohio Hatchery, Bellevue, Ohio.

Baby chicks of quality. Safe arrival guaranteed. We prepay expressage. Catalog free; 9 varieties, South Kenton Poultry Farm, Kenton, Ohio.

Baby Chicks, standard bred. S. C. Rhode Island Reds, Buff Orpingtons, White Wyandottes, Barred Rocks; $2.00 dozen; 25 chicks, $3.75; 50 chicks, $7.50; 100 chicks, $15.00. Guarantee safe arrival 2,000 miles. 15 eggs, $1.00; 30 eggs, $1.50; 60 eggs, $3.00; 100 eggs, $5.00. Martin Michelson, 232 Fifth St., Aurora, Ill.

White Leghorn baby chicks bred from mature hens with heavy winter laying records. Hatched in Mammoth Incubators averaged 65 per cent pullets past four years. Our chicks make good. Satisfaction guaranteed. Circulars free. H. L. Hamilton, Huntington, N. Y.

Chicks, 10c; ducklings, 15c; eggs reasonable. Don't delay booking orders. White Leghorns, Parks Barred Rocks, Pekin and Indian Runner ducks. Both light fawn and penciled. White eggs. Circular. Premium Poultry Farm, Box 62, La Harpe, Ill.

Baby chicks, Wyckoff strain. Single-Comb White Leghorns, mated with cockerels direct from Young, $12 100, prepaid. Eggs, 6c each; any amount. Ohio Valley Hatchery, Ramsey, Ind.

Chicks, leading varieties, hatched in mammoth coal-heated incubators. 100,000 chicks for 1912 delivery, order now. Arrival guaranteed. Catalog free. Walnut Hill Hatchery, Macon, Mo.

Baby Chicks, Kellerstrass Orystal White Orpington. 50c each. Shipment guaranteed. Order today. Twin Valley Hatchery Farm, Mrs. J. Kiger, Route 1, West Alexandria, Ohio.

100 Baby Chicks, $10.00; 100 eggs, $4.00. Illustrated folder telling all about my 600 heavy laying Single Comb White Leghorns. Ellsworth Shaw, Grand Junction, Mich.

Baby chicks of quality, White Wyandottes, White Rocks and Black Orpingtons from fancy stock. Write for circular. Burnett & Doolittle Hatchery Co., Waukegan, Ill.

Baby chicks, 10c each. Barred Rocks and White Wyandottes. Fawn and white I. R. Duck eggs $1.00 per 12. Orchard Knob Poultry Farm, Mt. Victory, Ohio.

Chicks, 8 to 15c each. The kind that will grow into prize winners for you. Safe arrival guaranteed. Catalogue and price list free. Blum Hatchery, Chatfield, Ohio.

Day old and four weeks old chicks from Crystal White and Buff Orpingtons and Barred and White Rocks. Chicks cheaper if ordered early. Free circular. Fred Brown, 764 W. Broadway, Winona, Minn.

Ducks and Geese

Carlile's White Indian Runner Ducks, best in the West, as demonstrated at the great Los Angeles Show. I have owned practically all the original stock in America and now have the largest and finest flock on the Coast. Eggs, $5.00 per 15; $12 per 50; $20 per 100. First prize matings, $10 per 12. Satisfaction guaranteed. Book orders now and avoid disappointments. J. C. Carlile, Route 4, Box 249, Los Angeles, Calif.

Blue Swedish Ducks. Large, profitable, beautiful. Excellent layers. 38 firsts from 41 entries in 1911-12, including Madison Square and Cleveland. Fawn and White Runners. True color, racy type, record layers. Show quality. Runner eggs, $1.50 per setting, $6.00 per hundred. Catalog. Hill Crest Duck Farm, Bellville, Ohio, Box D.

Yoder's Indian Runner Ducks. First and special at Allentown show. My book on Runners 75c, 11 eggs $2.50, 30 eggs $5.00. Yoder's Partridge Rocks and Partridge Wyandottes are prize winners, 15 eggs $2.00, 30 eggs $3.50. Prices and winnings 2 stamps, Box 50, Levi D. Yoder, Dublin, Bucks County, Pa.

Indian Runner Ducks, fawn and white, winners of first and second premiums Tri-County Fair, Sikeston, Mo. No stock for sale. Eggs $2.50 for 13; $4.50 for 26. R. C. Rhode Island Reds. Carefully bred stock. Eggs $1.50 for 15; $2.50 for 30. J. Ed Green, Blodgett, Mo.

Indian Runner Ducks. Light Fawn and White. "Blue Ribbon Winners." in every state and territory. Heavy layers of "show white" eggs. Shipping more than 1,000 every week for hatching. Booking orders. Don't delay. Catalog free. Mrs. Wm. Harshbarger, Waveland, Ind.

Duck shooters attention. Eggs from small trained Grey Call Ducks. (Colored like Mallards). Greatest callers for decoy shooting known. Throw away your wooden scare crow decoys and use live callers. Eggs, $2.00 per dozen. H. St. George, Brookfield, Wis.

Dutlay Hens. Indian Runner Ducks. Brooks-Walton white egg strain. Buff Orpington Ducks. Finest obtainable from originator. Drake imported from England. Great layers. White Orpington fowls. Eggs reasonable. Muskoday Farm, Weedsport, N. Y.

Indian Runners, American standard; English Waltons, pure white. Pens mated by expert judge. Stamp brings mating list, judges' testimony. My new booklet "Road to Success." Mrs. D. C. Teasley, Anderson, Ind.

Indian Runner Ducks. Fawn and White. White egg strain. And Single Comb Reds. For size and color they have no superior. Eggs per setting or by hundred. Write for prices. Mrs. Z. T. Biggerstaff, Edgerton, Mo.

Pure White Egg Strain. Light Fawn and White Indian Runner Ducks. Ringlet Barred Plymouth Rocks, and Single Comb Buff Leghorn eggs. Correspondence solicited. J. W. Van Cleave, New Market, Ind.

Mammoth Pekin Ducks, winners at Chicago, Minneapolis, Wisconsin State Show and Fond du Lac. Eggs, $1.50; $1.00 per 12; $3.00 per 50; $5.00 per 100. Circular free. Jos. H. Kitchen, Eldorado, Wis.

Runners—English-American-White. Prize winners. Perpetual motion white egg machines, outlaying hens. Eye-opener circulars. Write your wants. Special, Reds, Partridge Rocks. J. Newell, Girard, Ill.

Indian Runner Ducks, true Fawn and White, Wingerts strain, prize winners at Janesville, Walworth Co. fair, Wisconsin. Eggs, $2.00 per setting. Gregor Fischer, Box 514, Elkhorn, Wis.

White Indian Runner Ducks. Ideal hape and carriage. Prolific layers of large while eggs. Easy to raise. Stock and eggs for sale the year round. Jas. R. Snyder, Box S, Frazer, Mo.

Indian Runner Ducks. True Fawn and White. Finest foundation stock in America. Eggs by setting or thousand; utility and exhibition stock for sale. C. O. Yost, Route 4, Winchester, Ind.

Indian Runner Ducks, tested layers, moneymakers. Rhode Island Reds, big boned, red eyed, rich even glossy reds. Barred Rocks. Zebra barring. Reinharts Farms, Ottumwa, Iowa.

Toulouse & Embden Geese, Indian Runner Ducks, that lay white eggs. That win, too. Stock, eggs, drakes. Instructive circular for stamp. Burt McConnell, Ligonier, Ind.

Indian Runner Duck Eggs. From Fawn and White prize winning stock. Heavy layers, white eggs, $1.00 per 12; $6.50 per 100. Now booking orders. L. R. Street, Webb City, Mo.

Toulouse and Embden Geese, Pekin Ducks, Rose Comb White Leghorns and Partridge Plymouth Rocks. Eggs, $2.00 per setting. Standard bred. E. J. Nicholas, Mt. Bethel, Pa.

Indian Runner Ducks, Fawn and White. Eggs $1.00 per 15; $2.00 per 33, $3.00 per 50. Mammoth Bronze Turkeys, the big kind; eggs, $4.00 per 11. J. W. Fretz, Bosworth, Mo.

Pearl White Eggs from light Fawn and White Indian Runner Ducks. Also Single Comb Rhode Island Red eggs. De Graff strain. Mrs. Ivan Jacobs, Sellersburg, Indiana.

Indian Runner Ducks. American standard light fawn and white. Entire flock scores from 92 to 97. Eggs, $1.50 per 15. $5.00 per 50. Mrs. Clyde Myers, Fredonia, Kan.

Bred from winners. Rouen, Colored and White Muscovy, $4.00 per pair; drakes, $2.00. Toulouse gander, $5.00. White Guineas, $2.00 per pair. Ralph Wilson, Bloomville, Ohio.

Mammoth Pekin and Indian Runner Ducks. The birds for the fruit grower. Eggs, $1.50 for 12; $3.00 for 30, $4.50 per 50. Paul & Gordon Griffith, Fredericktown, Mo.

Indian Runner Ducks, wonderful layers of pure white eggs; also Giant Bronze Turkeys. Prize winners. Write for prices on eggs. B. F. Morgan, Independence, Ind.

Indian Runner Ducks, pure fawn and white. A grand lot for sale. Get our prices before you buy. We can please you. K. I. Miller, Box 2, Lancaster, Mo.

White Indian Runner and Buff Orpington Duck Eggs. Get one of these new breeds. They are mortgage lifters. Instructive circular. French & Hepp, 4358 Umatilla, Denver, Colo.

White Indian Runners, eggs $1.00 per 12. Fawn and White and English, $1.00 per 13; $5.00 per 100. Also Single Comb Rhode Island Reds. Mrs. J. W. Myers, Marion, Ohio.

Indian Runners—Exhibition and utility stock. English imported. Pure white eggs. Lay except at moulting. Per dozen, $1, $2, $3 and $5. A. P. Burk, Camp Chase, Ohio.

Indian Runner Ducks, Light Fawn and White, S. C. B. Leghorns. Eggs for sale. Strictly fresh eggs sent out, guaranteed safe arrival. Mrs. Mary Ryatt, Bloomfield, Iowa.

Buff Orpington Ducks. Great layers. Very beautiful. Booking orders. Eggs, $1.50, $2.50, 12. Indian Runner eggs, $1.00, 13. Stock for sale. J. W. Yates, Frankfort, Ind.

Indian Runners, Fawn and White. Pleased customers everywhere. Eggs, $5.00 per 100. A few drakes for sale, very reasonable. Herman C. Voiroi, Woodburn, Indiana.

Fawn and White Runners. White egg strain, $3.00, $2.00, $1.25 per 15. Valuable instructions free to customers. Write, mating list. D. L. Sheldon, Scranton, Iowa.

Genuine English Penciled White Egg Indian Runner Ducks. Catalog free; $3.00 setting. Parks bred to lay Rocks, $2.00 setting. C. K. Vanderbilt, Lyons, N. Y.

Eggs, Eggs, Eggs. White Indian Runner Ducks (Fishel's), $6 per 12; Rhode Island Whites, best utility, fancy breed, $3 per 15. Fred Foster, Seville, Ohio.

White Indian Runner Ducks. The kind that win and lay pure white eggs. Eggs, $5.00 per 15. Write for mating list. C. E. Densmore, Springwaler, N. Y.

Eggs for sale from extra heavy, high scoring Pekin Ducks and White China Geese. Farm raised stock, fertile eggs. Write W. H. Sheka, Grafton, Iowa.

A fine lot of pure bred White Muscovy Ducks for sale. Prices on pairs, $3.50. Eggs for sale in season; dozen, $1.50. Mary Ramsey, Manchester, Minn.

White Indian Runner Ducks. Silver Wyandottes, 1st cockerel, 1st and 4th pullet at Springfield, 1912. Write for prices on eggs. L. J. Ferrill, Farina, Ill.

Indian Runner Ducks—The kind that lay all winter. 150 breeders; eggs, $1 per 15, $5 per 100. Stock prices low. Bernard Reed, McConnelsville, Ohio.

White Indian Runner Ducks, Fishel strains, trio, $25.00. Eggs, $4.00 per 12; $7.50 per 24. Henry Schowe, Jr., New Bremen, Ohio.

Embden Geese, male, four females. Choice blue ribbon winners for four years. Price, $20.00. Ada Pratt, Route 6, Elgin, Ill.

Wild Mallard Ducks. A strain from wild ducks on Sodus Bay. Eggs, $3.00 per 12. T. G. Ashmead, Williamson, N. Y.

Mammoth Pekin Ducks. Big winners. Best for market and easiest raised. Eggs, $5.00 per 100. Oscar Wells, Farina, Ill.

Turkeys—White Holland

Large White Holland Turkeys; 32 pound toms; 19 pound hens; 16 pound pullets. Eggs, 13, $2.50; 50, $7.50; 100, $15.00. Circular free. J. C. Hodges, Waterloo, Ind.

Turkeys, White Holland cockerels and pullets, extra fine, from prize winning stock. Eggs, five dollars per setting of ten. Fertility guaranteed. R. Barrie, Bethel, Kan.

Flock White Holland Turkeys. 5 hens and male. Very high quality. Won Elgin all firsts for four years and silver cup. Price, $25.00. Ada Pratt, Route 6, Elgin, Ill.

Turkeys—Bourbon Red

Cording's Bourbon Red Turkeys. Pens not related. Toms fit to head any pen. 48 head. Fishel White Rocks, White Guineas. Enterprize Yards, Wingate, Ind.

Bourbon Red Turkey Eggs. Two-year-old breeders. Big frame, grand color; domestic as chickens. Fertile eggs, $3.00 per 11. Mrs. Clyde Myers, Fredonia, Kan.

Turkeys—Mammoth Bronze

Mammoth Bronze Turkeys from large state prize toms and others. Scored and unscored hens, $3.00 to $6.00; toms, $5.00 to $12.00. Jas. Gladish, Pres. Leahy Mfg. Co., Higginsville, Mo.

Bronze Turkeys. Big bone, large size, good styles, finely marked, golden bronze plumage. Stock guaranteed as represented. Write us. Worl Brothers, Route 21, Greensfork, Ind.

Wild and Bronze turkeys and chickens. Eggs for hatching. Catalogue, 2c stamp, showing wild gobbler from the mountains. Valley View Poultry Farm, Bellcville, Pa.

For Sale—M. Bronze Turkeys, prize winners at Minneapolis, St. Paul and Winnipeg. Write for photo and prices. C. J. Kapphahn, Route 8, Alexandria, Minn.

30 lb. Mammoth Bronze toms. Scored by Branch. Won all firsts at Higginsville and Concordia. Mrs. E. Powell, Higginsville, Mo.

Pigeons

Write for our 1912 big free squab book, telling how to make money breeding squabs. How to start small and grow. Enormous demand. 5,000 wanted daily by one marketman. See what he says in National Squab Magazine (monthly). Specimen copy from us, ten cents. Plymouth Rock Squab Company, 341 Howard street, Melrose, Mass.

White, Black, Red and Blue Maltese hens. Yellow and Red Carneaux. Breeders and youngsters. I breed them. None better. Price reasonable. Lafreniere, Vineland, N. J.

Guaranteed Mated Pairs. Homers, $1.00; Carneaux, $3.00. Maltese, $3.00. 2 illustrated catalogs, 10. Pigeon Dept. Hillhurst Farm, R. F. D. Box No. 22, Orchard Park, N. Y.

Pigeons—Three pairs guaranteed extra homers, $5.00. Leg Bands, ten cents dozen. Cleaning tools, dollar a set. Kirkbride, 102 East Park Ave., Haddonfield, N. J.

POULTRY SUPPLIES

Use Wyandot White Oil. The oil that's right, for incubators and brooders. As good in the home this season as for poultry purposes. Stands inspection everywhere. Order direct from us and we will help with the freight charges. Write and we will quote you. The Wyandot Refineries Company, Crawford, O.

Smokeless Wicks, non-explosive. For incubators and Brooders they have no equal. Thousands are used on the large poultry farms both here and in Europe. Write today for testimonials etc., all sizes 2 for 25c. Connischiffe Poultry Farm, Tenafly, N. Y.

For Sale—Seventy-two-egg hot water incubators, all complete, for $6. Freight prepaid. Do you want Indian Runner duck eggs? Runner ducks are the farmer's gold mine. Catalogue free. Golden Rule Incubator Company, Middletown, Ind.

Do your hens lay in winter time? If not, why not? Do you want them to lay? If so, feed Boldt's Laying Tonic, 50c per package; 6 packages $2.50. Boldt's Poultry Remedy Co., Albion, Mich.

Free advice on poultry problems: Housing, feeding, management, how to treat diseases. Letters welcome. New 80-page poultry book free if you send 4c postage. The G. E. Conkey Co., Dept. No. 86, Cleveland, Ohio.

Are you interested in the best automatic poultry feeders ever built? If you are get in line with the 20th century goods. They bring results. Booklet free. H. E. and C. S. Barnes, 86 King Ave., Columbus, Ohio.

Roup easily cured. Use Bob White Roup Cure. Guaranteed to cure coup or money refunded. Large box 50c postpaid. Bob White Company, Ames Sta., Box 7, Omaha, Neb.

Actual live hen incubator, near million used. Patented plans; ask for free book, giving hundreds testimonials. Address, U. U. Co., Box 48, Rivera, Calif.

Poultry Supplies. Send one dollar for Roup Cure recipe. Make your own Roup Cure. Sure cure. Money back if dissatisfied. C. G. Omen, Council Bluffs, Ia.

Profit and Health in Poultry. Hundreds have paid me five dollars for this instruction. Now in book for half dollar. Dr. Nathan Sanborn, Holden, Mass.

FARM LANDS FOR SALE

Arkansas

Famous Springdale Fruit District, in Ozarks. Money-making orchards, $100 to $200 acre. Why pay prohibitive prices for raw western lands? Our apples have finer fluvor and produced at half expense of western fruit; no irrigation. Orchard lands $30 acre up. No malaria, mosquitoes, negroes, saloons. Prices bound to seek proper level. Free list and literature, ten cents for census map. Fredrick Realty Company, Springdale, Washington Co., Ark.

Famous Springdale Fruit District; 8 acres and 4¾ acres in town. Fine improvements and orchards; 56 acres at $1,700 and 20 acres at $1,200. Few miles out. Fine combination farms, plenty fruit, fair improvements. Free list. Ten cents for census map. Fredricks Realty Company, Springdale, Washington Co., Arkansas.

Fruit and Poultry Farm. Fourteen acres, ½ mile from Hiwasse, 400 Jonathan and 400 Gano, eight years old; 4 acres in nice grove and pasture; 25 Elberta peaches; all in good shape and the best of elevation and air drainage. No buildings, but splendid building site. Price, $1,000.00, $500.00 cash, balance to suit purchaser. Banks & Adcock, Hiwasse, Ark.

200 Acres Elberta Peach Land adjoining the big orchards at Highland, Pike County, Arkansas. Price, $30.00 per acre cash. Green & Millwee, Prescott, Ark.

California

Fruit Growing in Town. 37 acres best fruit land, 3 blocks from depot. Main pipe line along fence. Earliest best fruit section. Shipping 1,000 cars annually at highest prices. Electric lights, telephones, etc. Now $2,600.00. Will sell for double this amount before Panama Canal opens in 1915. Rowell Fruit Co., Loomis, Calif.

Come to Shasta County. We have choice sediment land on Sacramento River, under irrigation ditch at $100.00 per acre, near Anderson on main line of Southern Pacific. Shasta Land Co., Anderson, Calif.

California Irrigated Lands—Famous Gridley colonies; tracts to suit; easy terms; improved farms; best homeseeker's proposition in California. Write for particulars. Gridley Land Co., Gridley, Calif.

Twenty acres Tokay grapes and plums, half mile from depot. Best fruit section, $2,500, only $600 cash, balance long time. Rowell Fruit Co., Loomis, California.

Colorado

If you want a part of one of the very choicest tracts of fruit land on earth, where conditions are ideal for growing fruits and for a home, then send for copy of a beautiful booklet describing Morrisania Ranch, Grand Valley, Colo. This is not cheap land—it sells for $300 per acre, including perpetual water right, but it is worth the money. It may be that some member of your family needs the benefit of Colorado's climate for some form of lung trouble. Get a tract of this land and establish your home there before it is too late. The ranch contains 880 acres, and only part of it is for sale, for we will develop the remainder for our own use. Shall we send you the booklet which describes the place? Write me if interested. James M. Irvine, Editor The Fruit-Grower, St. Joseph, Mo.

High class orchard land in upper Grand River Valley, Colorado, 15 acres, red mesa soil, irrigated, fenced; five acres young apple orchard, gentle slope, perfect air and water drainage, one mile from railroad station. Adjoining unimproved land selling at $200 and $250 per acre. Non-resident will sell equity so that total price will be $175 per acre. A. T. Walker, Lawrence, Kan.

Double Your Dollars. Buy Apple and Potato lands in Western Colorado. Government irrigation. Profit producing prices. Best climate. Reliable information. Crop statistics given under oath. Olinger & Knapp, 1712 Champa St., Denver, Colo.

700 Denver Suburban Lots, $1.00 down, $1.00 a month. Extraordinary 45 day offer. Near city limits, city water on boulevard. Transit. Sure advance. Write immediately. Bank reference. Agents wanted. Loretto Realty Company, 1639 Champa St., Denver, Colorado. Charles F. Leimer, Manager.

For Sale—Twenty acres best orchard land; North Fork Valley, Delta County; no crop failures, plenty water. Write owner. Save commission. Theodore Polling, Hotchkiss, Colorado.

We sell land in San Luis Valley, Colorado. We want live representatives in every locality. Get our proposition. Monte Vista Realty Company, Monte Vista, Colo.

Florida

Your grapefruit or orange grove, vegetable garden, truck farm, will yield largest profits if you locate at Fort Pierce, on the East Coast of Florida. Florida East Coast Realty Co., 917 Ashland Block, Chicago.

Homes in Healthy West Florida, $20 per acre. Part pay in crops. "Facts About Florida" free. W. S. Reeve, Pensacola, Fla.

Idaho

Eastern or Middle West people can't realize what has been done at Wendell, Lincoln County, Idaho, in irrigation work the past few years, but don't judge Wendell's thousands of tributary fertile acres by what you may have seen from car windows of old Oregon Short Line, for, on account of low easy grades, surveyors selected route through much worthless country. New Oregon Short Line, main line, just completed, Salt Lake to Portland passes through Wendell and the richest land in Southern Idaho.

Wendell, Lincoln County, Idaho, offers greatest opportunities in West. Over eleven million dollars invested in irrigation enterprises, in Lincoln County, Idaho, according to Government statistics. Wendell's first crop potatoes, winter and spring wheat, oats and barley won sweepstakes Idaho State Fair; again won practically everything in potatoes, and many firsts on grains, Idaho State Fair 1909; again in 1911 won sweepstakes in agriculture, Idaho State Fair; crop records broken this year. Greatest irrigation system in country. No dry years here, abundant water when you want it; one supply reservoir filled by Snake River, has thirty mile shore line; gigantic irrigation, water supply and power dams on Snake River furnish cheapest electric power in country. Lava ash soil deep, very productive, mellow, easily worked; wonderful fruit country, Oregon, Washington, Colorado fruit men buying here, consider soil best and cheapest known. Land with abundant everlasting irrigation water about fifty dollars per acre. Alfalfa grows to perfection here; wonderful dairy and stock country; formerly old winter sheep range, climate mild; spring work begins March; purest soft water for domestic purposes underground. Lincoln County has increased over six hundred per cent in past ten years. Wendell, live progressive town, fine people, two rival railroads, modern churches, schools, banks, hotels and business house.

This is the land of and for the energetic, ambitious, progressive, red blood type of young or middle aged men—men who do things. It's not the land of knockers or has-beens. The wise knocker who goes to post-office for his mail order house catalogue, wearing his slippers and smoking jacket, and who has no commercial or other rating, had better not only stay east, but move farther east if possible. This is the land of opportunity, where all best things are not controlled by combines or trusts. It is the country where the average man with some means and willing to work is bound to win out. (Cut this out for future reference.) For further particulars write S. M. Smith, Wendell, Idaho.

80 acres farm under government irrigation project in famous fruit valley of Southern Idaho. Small commercial orchard, balance nearly all alfalfa. Soil rich sandy loam, which produced bountifully past season. Perfectly leveled so as any child can irrigate. Failure impossible, house, barn and other improvements; two miles from nearest town. Fine schools, many other advantages. Owner must sell soon. Land in vicinity worth upwards to $1,000.00 per acre. My price at present $125.00 per acre; one-third cash; balance, terms. Will pay fare. Write for full particulars. Chas. Ernst, Greenleaf, Idaho.

Twin Falls County, Idaho, 40 acre orchard Jonathan, Rome Beauty and Winesaps. 15 acres 3 and 4 years, balance 1 year. Lies perfectly for irrigation, adjoining town of Murtaugh on Oregon Short Line Railroad. Snap at $10,000.00. J. E. Steinour, Murtaugh, Idaho.

For Sale—40 acres fine irrigated land. Perpetual water right. Four room house. Cleared, plowed. $3,608.65; cash, $2,488.65; terms, $1,120, six per cent. O. C. MacNair, Hagerman, Idaho.

Iowa

Ten acres set to apples, Jonathans, Winesaps and Rome Beauty. Address, C. W. Renshaw, Rock Valley, Iowa.

Massachusetts

FARMS FOR SALE
In the Connecticut Valley. Best on earth.
Descriptive Circulars Free.
F. R. Hawley Co., Springfield, Mass.

Michigan

Cheboygan County, Michigan Farms. 80 acre, 60 improved. Log house, frame barn; 500 apples, 400 cherry and green gages. Apples won bronze medal at St. Louis from this farm, $3,500.00. 317 acres, 250 improved; good house, four barns, river front, $13,000.00, half cash, balance $500.00 year. 80 acres, 25 improved; small orchard, frame house and barn, $1,000.00, easy terms. Address **"Land,"** 106 E. Morrell St., Jackson, Michigan.

Minnesota

Rich soil, ideal climate. Abundant rainfall, best transportation; 20 acres, $600, $10 monthly. Map and literature free. S. O. Sanderson, 184 Palace Bldg., Minneapolis, Minn.

Mississippi

I am offering for sale 1,840 acres of farm land in Grenada County, Miss. 200 acres in cultivation, all good fruit land or would make good stock farm; price $10.00 per acre. J. S. Houston, 737 Marquette Bldg., Chicago, Ill.

Missouri

We have for sale some first-class corn, clover and bluegrass farms in Cass County, Mo. Can please you in a home. Jot M. Wilson & Son, Harrisonville, Mo.

North Carolina

Come South. Mountain section, altitude 2,250 feet. Mild winters, cool summers. Dairying, fruit growing, diversified farming. Cheap lands. Information Bureau, Hendersonville, N. C.

Oklahoma

For Sale—160 acres in beautiful, well watered Osage County, Oklahoma. Over 100 acres plow land. 2½ miles from Santa Fe R. R.; $15 per acre. C. B. Dickenson, Gentry, Ark.

Oregon

Wolf Creek Orchard Tracts, all sizes on easy terms, right on main line Southern Pacific, with 8 passenger trains daily. Best Rogue River soil, producing finest fruits and vegetables. Poultry pays surprisingly. Ideal climate and water. A carpenter, with some capital, is needed to take interest in townsite. Unexcelled opportunity. Write immediately to W. G. Smith, Owner, Wolf Creek, Oregon.

Rogue River Valley. Best Medium climate on earth. Coldest this winter, 21 degrees above. Get away from your winter blizzards and extreme heat of summer. The very best pear, apple, grape, alfalfa, dairying and poultry land, at reasonable prices. Elegant fishing and hunting. Write. A. N. Parsons, Grant's Pass, Oregon. No. 354. Bank references.

Wasco County, Oregon. Fruit and grain lands cannot be excelled anywhere in the Northwest. Climatic conditions ideal, insuring abundant crops annually. Transportation facilities unsurpassed. R. H. Weber, The Dalles, Ore.

For Real Estate and Investment, farms, stock ranches, fruit farms, dairying, timber tracts, in an excellent climate, write W. J. Moore, Brownsville, Linn Co., Ore.

Oregon Apple Land for single purchaser or syndicate. Send for "Reasons Why Yamhill Can Beat the World on Apples," free. Curtis P. Coe, McMinnville, Ore.

We charge no commission. If you want to buy, sell or exchange property, write at once. Owners Agency, Room 205 Paddock Bldg., Grant's Pass, Oregon.

We claim that the Umpqua Valley is "The Best in the West." Let us tell you why it is the best for you. Roseburg Commercial Club, Roseburg, Oregon.

Texas

Texas Gulf Coast Fig or Orange Orchard pays for itself in four years. Ideal climate and place to live. Best social advantages. Fine combination with poultry. Good markets. In order to get just what I wanted for myself and some friends, had to take a larger piece than we need, therefore want a few good neighbors to come in with us. Postal will bring you full particulars. J. Hart Welch, Box F, Douglaston, Long Island, N. Y.

Alvin, Texas, the commercial center of the successful orange, fig, strawberry and truck district of the Texas gulf coast; soil rich, climate delightful and location unexcelled. Correspondence solicited. E. C. & J. F. Webster.

Bermuda Onion Farm. 93 acres all in onions now. Southwest Texas. This crop will net twice selling price. On loading switch. Owners have 2,200 acres. Improved this to sell at fair profit. W. Foote, Scollard Bldg., Dallas, Texas.

For Sale—The Holloway Nurseries at Alvin, Texas. Trade established. Twenty acres land, modern buildings. Getting old; want to quit. Address D. Holloway, Alvin, Texas.

Utah

For Sale—Very choice selected fruit lands at Elberta, Utah. Much cheaper than company lands. About three times the water. Dry and irrigated farm lands. Choice Texas, Florida and other Southern lands. Colonization tracts. Inquire of R. H. Thomson, Hastings, Neb., or Continental Realty Company, Kearns Bldg., Salt Farm, 9176 Westport Road, Kansas City, Mo.

Virginia

Look ahead five years—What's in store for you? Would a nice, cosy home, and a $3,000 income per year in this beautiful valley for life look good? A ten-acre apple orchard tract planted to 500 red-apple trees—which will cost you a few dollars now and a few dollars each month—will insure your future home, income and happiness. Write us and get "Free Booklet," with facts. Shenandoah Valley Apple Lands Co., Waynesboro, Virginia.

Virginia—256 acres finest fruit land in the Piedmont section; 400 apple trees, large 8-room house, tenant houses, tobacco barn, stables, etc.; watered by springs, good slope, protected on north, fine views, adjoins pretty village. J. Fraser, Lovingston, Va.

ORCHARDS AND ORCHARD LAND

In the best fruit sections of Maryland and Virginia. We offer propositions of genuine merit valued at from $5,000 to $150,000. H. W. Hilleary & Co., J729 Southern Bldg., Washington, D. C.

Washington

Be independent and own your own home in the Walla Walla Valley. Unequalled opportunities for the small tract farmer, abundance of water, rich soil and ideal climatic conditions. The home of the Northwestern apple. Write for information and beautiful free illustrated booklet "C." The Commercial Club, Walla Walla, Washington.

REAL ESTATE AGENTS

Cash for your farm or business. I bring buyers and seller together. No matter where located, if you want to buy, sell or exchange any kind of property, anywhere, address Frank P. Cleveland, 994 Adams Express Building, Chicago, Ill.

Sell your property quickly for cash, no matter where located. Don't pay big commissions. Particulars free. Real Estate Salesman Co., Dept. 28, Lincoln, Neb.

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace Bldg., Minneapolis, Minn.

Farm Wanted—Will pay cash for a good bargain. Give full particulars and lowest price. W. F. Grower, Box 994, Cherry Valley, Illinois.

NURSERY STOCK

Fruit, Shade and Ornamental trees, grape vines, shrubbery, strawberry plants, roses, ornamental shrubs and vines. Forest tree seedlings, hardy catalpa and evergreens. Hill selected seed potatoes, etc., grown here in Northern Nebraska, been subject to a test of 39 degrees below zero without injury. We have a large and well equipped nursery and use up-to-date methods in propagating our stock. Send us your orders and you will be successful. The Humphrey Nurseries, Humphrey, Nebraska.

Podigreed Nursery Stock—If you want to plant trees that are sure to bring big returns in the future, write for our great new book, "Pedigreed Horticulture," the handsomest catalog of the year, giving complete information regarding pedigreed trees. We propagate all nursery stock from individual trees which have a record of bringing in big profits from the orchard. Do not fail to investigate. Write today. Our book is free. Winfield Nurseries, Winfield, Kan.

American Everblooming Hydrangea, the best hardy flowering shrub ever introduced. Hardy in Canada. Strong plants that will bloom the first year, 25 cents each; larger plants, 35 cents each, 3 for $1.00, prepaid. Send for our "Choice Little List" of ornamentals. It's free. E. Y. Teas & Son, East Plum St., Centerville, Ind.

Trees of all kinds at wholesale prices. Save agents commission of 40 per cent by ordering direct from us. Stock guaranteed first class; certificate of inspection furnished. Don't delay. Send for price list now. Address Box R, Wichita Nursery, Wichita, Kansas.

Senator Dunlap Strawberry plants, finest Northern grown, on the best land. $2.75 per 1,000. Nearly twenty years in the business. Poultry catalogue free. No one has better plants. Order direct or write. But do one quick. Zachary Turner, Eleroy, Ill.

If you are interested in Cherry trees, the kind that produce results, buy Western New York trees, direct from the grower. No scale. Write for prices; other nursery stock. C. W. McNair Nurseries, 300 acres, Dansville, N. Y.

Money in buying best nursery stock grown. Everything for the fruit grower in trees, plants, vines and ornamental stock. None grown that excels ours. Handsome catalogue free. Grand Mere Nursery, Baroda, Mich.

Gibraltar—Canada's New Black Raspberry. Large and hardy. Greatest yielder at experimental farm; six strong plants, 50c; fifteen, $1.00, postpaid. Send for circular. N. E. Mallory, Blenheim, Ont., Canada.

Satsuma oranges and grapefruit trees, budded pecans, fruit and ornamental shade trees. Rose bushes and shrubbery. No better stock grown. Illustrated catalog free. Turkey Creek Nursery, Box 39, Macclenny, Fla.

High grade fruit trees grown by an experienced Oregon Fruit Grower and Nurseryman. Write for special March price on apple trees. All our trees guaranteed to give satisfaction. W. C. Hopson, Milton, Oregon.

Dahlias, named kinds, $1.25 per 100. Gladiolus, good mixture, same price. 1-yr. Cherry, Montmorency and Early Richmond, 3 ft. up, 10c each. F. O. B. C. W. Hoffman, Route 13, Dayton, Ohio.

Americus, the great fall bearing strawberry, true to name, direct from originator. $2.00 per dozen, express paid. 300 other varieties only $1.50, express paid. W. H. Koell, Box 700, Hampton, Iowa.

Roses Guaranteed to Bloom. Direct from America's foremost growers. Write for 1912 catalogue. The Conard & Jones Co., Rose Specialists—50 years' experience, Box 12, West Grove, Pa.

Plant Michigan Grown Trees. We have a fine selection for spring planting. Trees direct to planter. Will be pleased to mail you our price list. H. L. Westgate Nursery Co., Monroe, Mich.

Strawberries. My specialty is strawberries. New, Paul Jones, Gibson, Bethel, Ozark Bissel. Also old standard varieties. Benjamin F. Smith, 1847 Barker Ave., Lawrence, Kan.

Senator Dunlap Strawberry Plants. Grown by up-to-date methods. Fine plants, by express, $3.75 per 1,000. By mail, 75c per 100; 25c per 25. P. A. Anderson, Grand Mound, Iowa.

Strawberry plants—Send for our valuable book and price list of hardy Northern-grown plants. Fruit growers and poultry keepers' supplies. George Stirdivant, Sheboygan Falls, Wisconsin.

New Strawberries, 1912 catalog free to all; reliable, interesting and instructive. The new everbearers and other important varieties. Address, C. N. Flansburgh & Son, Jackson, Mich.

For Sale—Extra fine Senator Dunlap Strawberry plants, $2.00 per thousand; quality guaranteed. Come and see them or write me. M. C. Buteyns, R. F. D. No. 2, St. Joseph, Mo.

Dollar strawberries. California's money maker. Early, best grower, best shipper, best keeper. We buy thousands of crates yearly. Plants, $3 thousand. Rowell Fruit Co., Loomis, Cal.

Apple seedlings and root grafts. My seedlings are Northern Iowa grown. Grafts made in any style by experienced workmen. Write for prices. Hawkeye Nurseries, Stratford, Iowa.

Strawberry plants, $2 per 1,000; raspberry plants, $5 per 1,000. Other stock in proportion. Catalogue free. Write today. Vernon H. Krider, wholesale nurseryman, Middlebury, Ind.

Peach, pear, plum, cherry and apple trees. From the largest nursery center in the world. Send for catalog. Alton E. Randall, Main and Adams St., Dansville, N. Y.

Raise Ginseng, $1 per square ft. of ground, $25,000 on one-half acre; grows anywhere; one-half city lot a bonanza. Sheboygan Ginseng Gardens, Sheboygan, Wisconsin.

Elm, Maple, Box Elder, nursery grown. Sizes 6 to 12 feet. Leased ground. Must move them. Write us for prices on car lots. The Newburys, Mitchell, S. D.

Plant good trees. We have a lot of fine trees for sale at prices that will please all that need trees. Louisiana Star Nursery, Plain Dealing, La.

Nursery Stock, Strawberry Plants, our specialty. Seed Potatoes. Bargain prices for March. Catalog free. Mayers Plant Nursery, Merrill, Mich.

Allen Peach (New) big yellow freestone, free catalog of all kinds of nursery stock. W. A. Allen & Sons, Geneva, Ohio.

BULBS

Gladioli—"Peace," the most beautiful white in existence. Many other varieties of exceptionally high quality. Write for illustrated catalog. Arthur Cowee, Box 25, Berlin, N. Y.

SEEDS, PLANTS, ETC.

Special to gardeners and truckers—We are making extensive preparations for the coming plant season, spring, 1912, and will have a fine list of the following to offer: Lettuce, in five varieties; cabbage, all the leading kinds; peppers and eggplants, pot grown and otherwise transplanted; cauliflower, celery. Special attention is given the growing of celery plants of golden self-blanching French stock. Tomatoes, all the leading varieties, transplanted and pot-grown plants. These are money-makers and we shall be pleased to receive inquiries and give best possible prices to large buyers. We have extensive green houses and hotbeds and truck 200 acres. Fox-Hall Farm, R. F. D. No. 2, Norfolk, Virginia.

California Premium Seeds given away with the foremost weekly magazine of western life and stories. New "Orange-berry," "Pyramid Celery," "Pineapple-melon," "Panama Rose-Lily," and others. Will grow anywhere. Magazine gives full instruction regarding growth and care. Only one dollar a year. Assorted packages and bulbs sent with first copy. Seeds you cannot buy. Address, San Jose Magazine Co., San Jose, Calif.

Big Four Seed Potatoes for sale, yielded 700 bushels per acre. Heaviest yielder out of over 500 varieties by field test. Price, 15c lb. postpaid. 60c peck, $2.00 bushel, freight or express. I. L. Ware, Gardiner, Me.

Pure unwashed seed of Halbert Honey and new shipping watermelon. Rubber Rind, direct from the originator. Write for prices. H. A. Halbert, Originator, Coleman, Texas.

Early cabbage plants; fine; mail, 60 cents 100. Express, $2.50 1000. Firmest shipping strawberry grown. Dozen, 50 cents. Mark T. Thompson, Richmond, Va., originator.

White Portugal Onion Seed, the standard white onion for market and family use. Oz. 10c, ¼ lb. 25c, 1 lb. 75c, postpaid. John W. Selig, Kent, Ind.

Want Asparagus Plants? We offer the best to be found at prices that will interest you. Perry Nursery Co., Perry, Iowa.

Seed Corn. Reid's Yellow Dent and Boone County White, per bu., $2.00. New Kherson Seed Oats per bu., 80c. F. M. Riebel, Arbela, Mo.

AGENTS WANTED

Local representative wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L420, Marden Building, Washington, D. C.

HELP WANTED

Wanted—A man or woman to act as our information reporter. All or spare time. No experience necessary. $50 to $300 per month. Nothing to sell. Send stamp for particulars. Sales Association, 790 Association Building, Indianapolis, Indiana.

Salesmen—To sell the most efficient insecticide and fungicide on the market. Exclusive territory given. Splendid opportunity for hustlers. Entomoid Chemical Co., Woonsocket, Rhode Island.

Wanted—Women and girls to work on large fruit and poultry farm. Steady work. Good home. No objections to colored people. Write The Hillside Farm, St. Peter, Minn.

Wanted—A good homeless woman or cook to keep house. Must know how to cook. German preferred. Fred Huecker, Route 1, Bunceton, Mo.

POSITIONS WANTED

Wanted work on farm by boy 17. Hershel Wilson, Riley, Ind.

FOR SALE

Bargains in New Automobiles—The Burg Six is the car for you. Quiet, powerful, roomy, comfortable, beautiful design. Great hill climber. Price reasonable. For a bargain, write for our introductory proposition. Joseph Burg Carriage Co., Dallas City, Ill.

Sacrifice Sale on second hand automobiles, trucks, tires, etc. Write us for particulars; new four cylinder touring cars below manufacturer's cost. Box 275, Burlington, Wis.

For Sale—Moving Picture film, 1c foot. H. Davis, Watertown, Wis.

TO EXCHANGE.

For Trade—Nice new five-room house. Nice lot 40x150. Fine well. Basement, out buildings on nicest and best street in town, at the edge of town. 13 good factories the farthest not over a mile. Plenty of work here. Price $1,500.00, Mortgage $600.00 to run five years. I want a few acres of land worth about $1,000.00. W. T. Hickman, Decatur, Ill. Rt. 5.

GALVANIZED STEEL NESTS

Send for free catalogue of the Knudson patent galvanized steel, lice-proof poultry nests, coops, feeders, etc. They positively eliminate the lice and mite problem. Pay for themselves in short time, whether you keep ten hens or ten thousand. Write today. Knudson Manufacturing Co., Box 304, St. Joseph, Mo.

LIVE STOCK

O. I. C. Swine. Pigs 8 to 10 weeks old a specialty. Prices right, 30 years experience. The great book, "Raising Hogs for Profit," 140 pages, price $2.00 only. Order this book today, if you don't like it return it and get your money. M. L. Bowersox Co., Route 4, Box 9, Bradford, Ohio.

For Sale—A few high-grade Holstein-Guernsey Jersey heifer calves, and all varieties of Plymouth Rocks, Wyandottes and Rhode Island Reds; cockerels and pullets at reasonable prices. W. A. Hoyt, Whitewater, Wis.

Registered Holstein-Friesian bulls cheap. Strong and growthy. King Segis blood. Regal White Wyandotte eggs, hatching, 5c each. Satisfaction guaranteed. Luther Falkey, Phelps, N. Y.

Red Polled Cattle. Bulls of serviceable age. From good milking stock. Young calves and cows. Barred Rock chickens. Clyde M. Worley, Route 2, Mercer, Pa.

Milch Goats—Swiss and Spanish breeds. G. H. Wickersham, 1244 St. Francis Ave., Wichita, Kansas.

DOGS AND PET STOCK

50 Fox Terriers of all ages. Best rat, pet or watch dog on earth. Write me at once for prices. T. H. Kaldenberg, Pella, Iowa.

Scotch Collie Puppies. Pedigreed stock. $5.00 and up. Dog, Hare and Poultry catalogue. Belgian book, 5 stamps. Failing Poultry Farm, La Fargeville, N. Y.

Shetland Ponies or any of the leading breeds. Cattle, sheep, hogs or dogs. Send 4c for illustrated catalog. J. D. Stodghill, Shelbyville, Ky.

Collies for farmers. Pedigreed stock, pups $7.50 to $10.00; grown dogs, $15.00 up. Several bred females. W. D. Weaver, Harrisonburg, Va.

PRINTING

Printing for poultrymen, fruit-growers, everyone. Note heads, envelopes, cards, tags, circulars; 100 either, 45c; 250, 80c; 500, $1.25; 1000, $2.00. Postpaid. New cuts. Samples, 2c. Orvil Kiger, Brighton, Iowa.

PATENTS

Patents Procured and Sold. All countries; inventions make fortunes; manufacturers seek my clients' patents; send sketch of your invention today; book free. H. J. Sanders, 360 Crilly Building, Chicago, Ill.

Send For Free Booklet—All About Patents and Their Cost. Shepherd & Campbell, 500M Victor Bldg., Washington, D. C.

WANTED

Wanted—Pure Bred Poultry, especially White Minorcas, Indian Runner Ducks, White Orpingtons, Partridge Rocks, Wyandottes, Cochins, Houdans, Andalusians, Crested Polish. Will buy entire flocks. Now is the time to clean out in changing breeds. What have you to sell? P. W. Frehse, Thoroughbred Poultry Dealer, Clarinda, Iowa.

MISCELLANEOUS

Free—"Investing for Profit" magazine. Send your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine. It is worth $10 a copy to any man who intends to invest $5 or more per month. Tells you how $1,000 can grow to $22,000. How to judge different classes of investments, the real power of your money. This magazine six months free, if you write today. H. L. Barber, publisher, R434, 20 W. Jackson Boulevard, Chicago.

Sulphur—We can supply your requirements promptly at the lowest prices, in barrels and sacks. Our sulphur is the best and cheapest that can be gotten, for making lime and sulphur solution. Write for prices. Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

Apple Barrels. Knock Down, nested or made up barrels. Get my prices delivered your orchard. Special price on spring shipments. Leon Miller, Williamsport, Pa., or Waynesboro, Va.

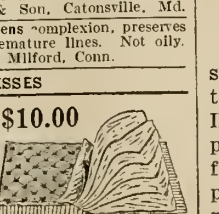
Have all kinds second-hand guns, revolvers, stoves, furniture, steel traps, etc. Furs a specialty in the season. Correspondence solicited. James A. Gregory, Liberty, Ind.

Paper Pots will give you beans, melons, corn and cucumbers three weeks earlier and they are fine for strawberry plants. Crosby & Son, Catonsville, Md.

Peach Blossom Lotion, whitens complexion, preserves youthful coloring, prevents premature lines. Not oily. 25 cents. J. Cox & Co., New Milford, Conn.

MATTRESSES

THIS REGULAR $10.00
45-lb. Elastic Felt Mattress for..... $5.95
If you want the best Mattress ever made for the money, write **CRAWFORD MFG. CO., St. Joseph, Mo.**



Too Late for Classification

Owing to ill health I offer my poultry plant for sale at less than one-half value. A live man can clear $1000.00 the first year. Will stand rigid investigation. Write at once. E. F. White, Route 3, Nicholas, N. Y.

Flame Tokay Grapes, Oranges, Olives, Cherries, vegetables, alfalfa, poultry, dairying, at Herald, Sacramento County, California. Central California Traction Colonies, 917 Ashland Block, Chicago.

Chicks from prize winning stock at popular prices. Several varieties. Catalog explains our stock fully. Agents for Chas. A. Cyphers Incubators and brooders. Ottawa Country Hatchery Co., Dept. F, Jenison, Mich.

Why Kellerstrass White Orpingtons? See my unique booklets. Five peerless breeding pens, scoring 94 to 96 1-4. Fine pullets for sale. W. C. Snyder, Bunceton, Mo.

My White Cochin Bantams took first prize at Chicago three years in succession. Cockerels, $1; eggs, $1 for 12. T. Barber, Stoddard Ave., Wheaton, Ill.

Report of Missouri National Egg-Laying Contest for January.

The pen which made the best record for January, and won the golden egg silver cup for this month was a pen of Buff Orpingtons, No. 118, from Springfield, Mo. The leading pens for January and the number of eggs laid by each is as follows:

Pen.		Eggs.
118	Buff Orpingtons	105
113	White Orpingtons	89
117	Buff Orpingtons	83
114	White Orpingtons	72
110	R. C. Rhode Island Reds	70
103	S. C. Rhode Island Reds	69
98	S. C. Rhode Island Reds	67
59	Silver Wyandottes	66
64	Silver Wyandottes	60

A total of 11,403 eggs has been laid in November, December and January. In each variety the twelve leaders to date are as follows:

Pen.		Eggs.
112	S. C. Black Orpingtons	242
103	S. C. Reds	232
64	Silver Wyandottes	230
118	S. C. Buff Orpingtons	202
114	S. C. White Orpingtons	193
123	Black Langshans	182
92	Buckeyes	175
52	White Wyandottes	171
46	Cornish Indians	171
30	R. C. White Leghorns	161
70	Buff Rocks	157
107	R. C. Reds	154

The comparative averages for all breeds per hen for the past three months is as follows:

	Eggs per hen.
All Orpingtons	151
All Rhode Island Reds	140
All Cornish Indians	114
All Langshans	92
All Wyandottes	89
All Anconas	85
All Leghorns	83
All Brahmas	53
All Plymouth Rocks	51
All Minorcas	48
All Ducks	31
All Hamburgs	22

One R. I. Red hen has made the remarkable record of seventy-five eggs for the three winter months. If she could maintain this record for the balance of the year, she would produce exactly 300 eggs in twelve months. She has several other hens following close behind her, as follows:

No.		Eggs.
346	S. C. Red	75
883	White Orpington	74
317	S. C. Red	72
402	Silver Wyandotte	69
541	White Orpington	67
684	Buff Orpington	66
79	R. C. White Leghorn	66
315	S. C. Reds	63
888	Columbian Plymouth Rocks	61
821	Cornish	61
545	White Orpingtons	60
859	Black Orpington	60

While the record for January is much lower than that of December, yet, considering the weather and other conditions, we are well satisfied with it. The thermometer remained from 4 to 24 degrees below zero for fifteen days, the ground was covered with snow, and it was said to be one of the severest continued cold spells ever known in this section. These fowls being kept in small open-front houses and in very small flocks, they would naturally be affected by the cold much more than if they were in larger houses and in larger flocks. We are pleased to report, however, that the birds all came through the severe spell in apparent better health than they had been at any time since the contest began, and the smaller broods are starting the month of February with a better yield of eggs than any time previous. As the weather moderates, we expect to see the Leghorns and other breeds pass those which are now leading.

Missouri. T. E. QUISENBERRY.

A. L. McClay, a prominent commission merchant of Chicago, who had extensive orchard interests in Southern Illinois, died recently in Florida, of pneumonia. Mr. McClay was an old friend of The Fruit-Grower, he was progressive in his methods, and was a mighty good all-round man.

TIMELY NOTES FROM IDAHO

It is nearly spring and another busy season will soon be on us, and trimming raspberries, trees and the like is in order. It will soon be time for spraying and planting the garden. With us, it looks as though the black-cap raspberries had winter-killed considerably, and that it will be necessary to trim them severely. This will mean that most of the berries this year will be on new growth as winter-injured wood makes small, unsalable berries.

In the East we never noticed this winter killing of raspberries, but in this section the canes stay green so late in the fall that the first hard freeze hurts them. Aside from raspberries, all other kinds of berries appear to be in good shape.

Last year there was considerable complaint in this locality about worms in the currants. Fortunately we found none in ours, as a hen and a lot of little chickens were in our currant patch every day until the strawberries got ripe. At the time we did not know what the chickens were after, but when we heard so many people complaining about the worms in their currants we decided the chickens were after the insects which caused these worms. We called up our horticulturist the other day to find out what to spray with in order to control these worms another year, for fear the chickens would not be able to do a good job this season, but were informed that this worm cannot be successfully controlled by spraying, as they are hard to get at.

Heretofore we have been trimming our apple trees to keep them from bearing, until they should reach sufficient size and age, but this year we are trimming for fruit, as the trees are now five years old. From the looks of the fruit spurs, we should have a nice crop.

The first spraying will be with lime-sulphur, for aphis and scale. People are beginning to realize the necessity of spraying, and there has been quite a number of successful power sprayers brought into this distrit this season.

While the thermometer got as low as 8 degrees below zero in the fore part of January, with about four inches of snow on the ground, some of the farmers were plowing soon after the middle of the month, as the frost seemed to go out in a hurry. Our lettuce, spinach and onions, which were planted last fall came through the freeze in good shape and we shall soon have green onions and spinach to sell. We shall probably transplant the lettuce from the field to our hothouse, as it now stands from two to three inches high, and by doing this we will be considerably ahead. The hothouse will be started about the middle of February, using manure as a source of heat.

We generally have considerable rough weather along in March and April, so there is not much use in starting the hothouse too early, as the plants that are to be set in the field get too large before the weather is settled.

HOME OF J. E. BUTLER, IDAHO.

We are letting our chickens run in the hothouse at the present and they are scratching the dirt over and over, getting rid of the insects.

We had our first mess of spinach the latter part of January, and it tasted mighty good, for a change. We planted our first potatoes, the "Early Ohio," on January 30th, and as they seem to get scabby where one has used lots of fertilizer, we dipped the seed in a solution of corrosive sublimate, to kill the spores of the scab fungus. These potato seeds were planted in what we call "double rows," that is, two rows about twenty inches apart, with a space three and one-half feet between these double rows. By arranging the rows in this manner, we can irrigate them to better advantage, running the water down these double rows, while the vines shade the ground, and prevent it from baking. The space between the double rows is kept in clean cultivation, and by this system we can get the largest yield.

MR. BUTLER PLANTING HIS GARDEN IN MARCH, 1911.

We have in the past had a great deal of trouble in getting celery seed to germinate, but stumbled onto a method by which we can get it to germinate very readily. Our method is to get the soil in good tilth, scatter the seed on top, and wet it down good with the hose or a sprinkling can, which will cover the seed sufficiently. We then cover the seed with a double thickness of sacks, well wet down, and the whole covered with a hotbed sash. In this way the seeds will germinate in about ten days and give a good stand. By having two thicknesses of sacks, the lower one will stay moist, with very little wetting, and this will maintain a suitable atmosphere for the germination of the celery seed. Care must be taken in doing this, however, to remove the sacks as soon as the plants come up, otherwise they will be so badly curled that they are ruined.

Two years ago we saw some Chinese gardeners, who should have known how, trying to get celery seed to germinate. They planted the seed in a bed in the open, sprinkled it with sprinklers made out of old cans having holes in the bottom. Between the wind and the water, the soil was baked so hard that very little of the seed ever germinated.

Most of our land was plowed in the fall to help rid the soil of the cutworms and other troublesome insects. Then, the freezing and thawing seems to put new life in the soil.

In the spring we plow the ground opposite to what we plowed it in the fall, plowing a little deeper, which leaves the ground level and easy to irrigate. In preparing the land for planting we hitch two horses to one-half of a double harrow and get on and ride. This forces the harrow teeth down deep, tearing and pulverizing the soil, and forming a much better seedbed than where simply smoothed over on top. We also intend to plant most of our small truck wide enough apart to use a horse to open up the irrigation ditches, and do the cultivating. Rows which are wide apart produce nearly twice as much as those close together, and it is lots easier letting the horse do the work than it is to push the hand cultivator, especially when the thermometer stands above 90 in the shade.

We were thinking the other day, while feeding the horses and noticing how much of their feed they were wasting, that everybody that had stock ought to have a chopper of some kind. Out here we feed mainly wheat hay and alfalfa for roughness, and the horses pick over the wheat hay to get the heads off first, and the alfalfa to get the leaves, thus wasting at least one-fourth. With a chopper there should be no waste, and it looks like the stock would get more strength from what they eat. It may be, however, that a chopper is like a bone-crusher for chickens—sounds mighty good on paper, but after turning them a few minutes we are perfectly willing for someone else to have hold of the crank.

What celery we had left from last year's crop was left in the field, covered with soil to the tips, and then four inches of straw on top, but in spite of this the cold weather of January spoiled it. We had some other celery in the hothouse, where it had been grown. This had been buried in layers, so that it was not injured by the cold. But we learned something about this crop. It must be banked up and blanched while it is growing, as it blanches but little after being taken up, no matter how it is covered.

We have some rhubarb plowed up, which we intend to force. In order to force it easily it must be turned up and frozen, for what reason I do not know, but I intend to try it, putting the roots under the benches in the hothouse, where it will be in the dark. We once tried forcing it in a hotbed in the light, but it would not grow at all.

Idaho. J. E. BUTLER.

TOO LATE TO CLASSIFY

1912 will be a big year for the owners of apple orchards in the Shenandoah Valley, Virginia and now is your opportunity to secure one. I have seven carefully selected bearing orchards; prices, $1,500, $3,500, $3,700, $7,000 and upward, on easy terms, for you to choose from; all are desirable homes; all are certain income producers; write me today. H. Magie, Waynesboro, Virginia.

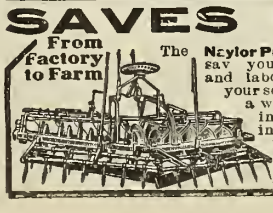
Seventy acres land and orchard. Have sold fruit some years, on trees, for $5,000. Further information about this valuable real estate, address Owner, Box 307, Chicotah, Okla.

Gardener Wanted

We want a good, experienced gardener at Morrisania Ranch, Grand Valley, Colo., to grow vegetables for use of the ranch only. An ideal place to spend the summer. Good wages to the right man. Write at once, telling what experience you have had. Address JAMES M. IRVINE, care The Fruit-Grower, St. Joseph, Missouri.

SAVES 50%

From Factory to Farm



The Naylor Pulverator" will sav you half your time and labor in preparing your seed bed. We wan a wid -awake farmer in each township to introduce it. Wri e us today.

Naylor Mfg. Co., Box 84 Plano, Ill.

Table of Contents

AUTOMOBILES
Automobile Exhibit .16
Auto Trucks and Fruit .22

BOOK TABLE
Increasing Human Efficiency in Business .3d cover
Representative California Homes .3d cover
West Coast Bungalows .3d cover

COMBINATION FARMING
Dairy Trains In Iowa .47
Fruit and Egg Farm .68
Dairying and Fruit Growing .6
Combination Farm, A .28
Oairy and Fruit Farm .40

EDITORIAL
Shippers or Stockholders, Which? .12
Over-Production of Apples .12
American Potash Supply .12
Vote for Parcels Post .12

GARDENING
Gardon, A Profitable .57
Order Seeds Now .74
Tomatoes, The Earliest .48
Vegetables, Trying Out .48

HORTICULTURAL SOCIETY MEETINGS
Idaho .50
Ohio .36
Western New York .44

INSECTS AND DISEASES
Bean and Pea Weevils .49
Codling Moth, Winter Work Against .33
Hold-Over Blight .34

MISCELLANEOUS
Agricultural Boys, Practical Work for .62
Can't Afford to Miss The Fruit-Grower .62
Cement Flume .62
Cross-Pollination, On .58
Drain Seeped Land .51
Electric Motors on the Farm .29
Flumes for Irrigating .62
Good Missionary Work .27
Hardiness of Buds .38
"How's Your Neighbor's Orchard" .23
Inspection Bill Agreed Upon .57
Irrigation, Much Interest in .39
January Number Made a Hit .41
Loyal Subscribers Help .47
Mixing Lead Arsenate .53
New Bulletins .3d cover
New York Shipping Organization Formed .41
Notes from Oregon .29
Open Head Pruning .32
Organization the Thing .3d cover
Pedigreed Trees, About .39
Pollination .3d cover
School Gives Course in Box Packing .49
Steel Wheels for Arid Climates .35
Watsonville Methods .50
Weather Bureau's Co-operation .53

ORCHARD FRUITS
Cherries, Commercial, of Southern Idaho .51
Cost of Orchard .69
Damage to Peach Crop .15
Peach, Missouri, a Peach .52
Plums for New York .46
Prune, The Italian .50
To Improve Missouri Orchards .47
Varieties of Apples to Plant .15
What's the Matter with Rome Beauty? .15

OUR HOME FOLKS
Behind Time .64
The Old Fashioned Nurse .64
Some Good Fish Recipes .65
A Cure for Drink Habit .65
Folly of Overworking .65
Stomach Trouble .67
The Social Hour .68
Uncommon Recipes .66

POULTRY
Yesterlaid Egg Farm .70
Pennsylvania Poultryman on Egg Production .72
Poultry on Fruit Farm, Our Experience with .73
Poultry Raising in the Orchard .19
Cold Storage .73

QUESTIONS AND ANSWERS
Stayman Winesap and Dynamite .54
Woolly Aphis .54
Cedar Apple Fungus .54
Growing Your Fence Posts .54
Home Made Concentrated Lime-Sulphur .54
What Made Apples Wormy? .54
Live Wood Bolts .55
Shape for Apple Trees .55
Mulberry Cuttings .55
Rusty Nails, Etc .55
Oyster Shell Bark Louse .56
Sheep Nibble Trees .56
Should Young Trees be Sprayed? .56
About Planting Apples .56
Grape Scale .56
Corn in Young Orchard .56

SMALL FRUITS
Berries at Lindenhurst .24
Blackberries .34
Blackberry Culture .60
Crops Between Trees, Growing .59
Dewberry District of Colorado .12
In the Berry Field .30
Michigan Small Fruit .14
Red Raspberries in Tennessee .23
Small Fruits in Colorado .12
Steamboat Springs .5
Strawberries, Fall Bearing .7
Strawberries for Michigan .14
Strawberries, Growing in Hill .18
Strawberries in British Columbia .20
Strawberries, Rhode Island Berries .25
Strawberries, Packing .6
Strawberries, Who Has the Mele? .74
Strawberry Bed, The .63
Strawberry Culture .18
Strawberry Culture, A Venture in .31
Strawberry Disease, To Study a .13
Western Colorado Berries .5

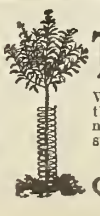
SPRAYERS AND SPRAYING
Spraying Hints for Beginners .29
Spray Outfit, Kind to Get .21
Air Sprayers, More on .26
Compressed Air Outfits .35

Florida Truck and Fruit Land Exchanged For Help

I searched six months for the best locality and land. Four best experts in the state pronounced it excellent fruit and truck land. I am going to improve a large tract for myself and three sons. Will sell some surplus land at attractive prices. Will help purchaser clear his land with our improved power machinery. Will take part pay for land in work purchaser does for us. Address F. O. Farwell, Fenlon Place, Dubuque, Iowa, at once, or after May 1st, notify R. S. Farwell, Gardner, Florida, you will call there and examine land.

F. O. FARWELL
Till May 1, Fenlon Place, Dubuque, Iowa

WHY HESITATE ABOUT



Tree Protectors

When you put out young fruit trees, put the COIL WIRE ON, and be done; have no more thought about rabbits. Used in all states. For descriptive circular, write

JOHN W. DAVIS, Jr.
Clarksville, - Missouri

INDEX TO ADVERTISEMENTS

Page

Agents Wanted
Bigler & Co....71
Marden, E. R....80
Shores-Mueller Co....52

Alarm Clocks
Big Ben....21

Automobiles
Box 275....80
Burg, Joseph, Carriage Co....80
Case, J. I., T. M. Co....51
Chalmers Motor Co....31
Goodyear Tire & Rubber Co....32
Hupp Motor Co....17
International Harvester Co....63
Owen, R. M. & Co....3-23
Sears, Roebuck & Co....35
White Co., The....52

Books
Fruit-Grower Books....56
State Board of Agriculture....54
Stillwell, E. W. & Co....64

Buggies and Harness
Auiser Harness Mfg. Co....59
Elkhart Carriage and Haruess Mfg. Co....69
Mutual Carriage & Harness Mfg. Co....30
Ohio Carriage Mfg. Co....30

Cans and Canning Supplies
Home Canner Co....67
Northwestern Steel & Iron Works 68
Perlesco Products Co....74
Raney Canner Co....64

Cement Machinery
Ideal Post Co....3d cover
Farmers' Cement Tile Machine Co....38

Cider Presses
Hydraulic Press Mfg. Co....50
Monarch Machinery Co....50

Commission Merchants
Coyne Bros....54

Cream Separators
American Separator Co....41
De Laval Separator Co....41

Cultivators
Barker Mfg. Co....21
Burmeister, Chas....74
Cutaway Harrow Co....46
Deere, John & Co....38
Johnston Harvester Co....46
Johnston, W. A....6
Light Draft Harrow Co....46
Mendenhall, E. G....28
Nash, Duane H....50
Ulrich Mfg. Co....55

Farm Lands and Real Estate
Address Land....80
Address Owner, Box 307....81
American Investment Assn....80
Banks & Adcock....79
Central Cal. Traction Col....80
Cleveland, Frank P....80
Coffin, Chas. E....21
Colorado Midland Ry. Co....58
Commercial Club....80
Coe, Curtis P....80
Cotton Belt Route....54
Denver & Rio Grande Ry....29
Dickinson, C. B....80
Ernst, Chas....79
Farwell, F. O....81
Florida East Coast Realty Co....79
Foote, W. H....80
Fraser, J....80
Fredericks Realty Co....79-79-80
Fruit-Grower (Morrisania)....39
Greef & Kelley....54
Green & Milwee....79
Gridley Land Co....79
Grower, W. F....80
Hanson & Son....54
Hawley, F. R. & Co....80
Hickman, W. T....80
Hilliary, H. W. & Co....80
Holloway, D....80
Houston, J. S....80
Information Bureau....80
Irvine, James M....79
Jantha Plantation....57
Loretto Heights Realty Co....79
Magie, H....81
McBurney, B. F. & Co....54
McDonald Land & Mining Co....54
Merritt, J. E....54
Mississippi Farms Co....7
Missouri Pac. Iron Mt. Ry....58
Monte Vista Realty Co....79
Moore, W. J....80
N. & W. Ry....54
Olinger & Knapp....79
Owens Agency....80
Parsons, A. N....80
Polling, Theodore....79
Rowell Fruit Co....79-79-80
Real Estate Salesman Co....80
Reeve, W. S....79
Renshaw, C. W....80
Rosebury Commercial Club....80
Sanderson, S. O....80
Seaboard Air Line Ry....54
Shasta Land Co....79
Shenandoah Apple Lands Co....80
Smith, S. M....79
Smith, S. W....79
Smith, W. G....80
Southern Ry. Co....22
Steinour, J. E....79
Stout, E. A., Farm Agency....54
Thompson, R. H....80
Walker, A. T....79
Weber, R. H....80
Webster, E. C. & J. F....80
Welch, J. Hart....80
Wilson, Jot M. & Sou....80

Farm Publications
Farm Journal Pub. Co....35
Fruit-Grower-Farmers' Review Club....22
Fruit-Grower Wonder Knife....59
Fruit-Grower-Poultry Keeper Club....59
Fruit-Grower (Guide-Book)....66
Fruit-Grower (Farm Journal Club)....66
Fruit-Grower (Editorial)....60
Fruit-Grower (Renewal)....20
Fruit-Grower (Bond)....27
Inter-Mountain Fruit Journal....55
Kansas City Weekly Journal....48
Market Growers Journal....14
San Jose Magazine Co....80
Vegetable Grower Pub. Co....60

Fertilizers
Commercial Acid Co....36
Commercial Acid Co....80
German Kali Works....49
Myers, Dr. Wm. S....38

Food Products
Postum Cereal Co....6-7
Postum Cereal Co....8

Fruit Packages
Bacon & Co....37
Crosby, P. B. & Sons....80
Fruit Package Co....31
Miller, Leon....80
New Albany Box & Basket Co....31
Pierce-Williams Co....49
St. Louis Basket & Box Co....15
Washington Mill Co....31

Fruit Picking Apparatus
Richardson Cherry Picker Co....10

Gasoline Engines
Galloway, Wm. Co....62
Motsinger Device Mfg. Co....31
U. S. Engine Works....50

Grading Machines
Baker Mfg. Co....61
Glide Road Machine Co....50

Harness
Elkhart Carriage Mfg. Co....69
Johnston-Slocum Co....61
Mutual Carriage and Harness Mfg. Co....30
Ohio Carriage Mfg. Co....30

Heating Outfits
Detroit Heating & Lighting Co..65

Help Wanted
Entomoid Chemical Co....80
Wilson, Herahel....80

Page

Hillside Farm....80
Huecker, Fred....80
Sales Association....80

Implements and Tools
Allen, S. L., Mfg. Co....40
Automatic Awl Co....56
Automatic Jack Co....55
Bateman Mfg. Co....55
Bostrom Brady Mfg. Co....50
Cutaway Harrow Co....55
Deere, John & Co....38
Kouus, W....61
Lange Mfg. Co....61
Luther Grinder Mfg. Co....24
Myers, C. A. & Co....56
Stewart Skinner Co....56

Incubators and Poultry Supplies
Barnes, H. E. & C. S....79
Boldt's Poultry Remedy....79
Close-to-Nature Co....71
Conniscliffe Poultry Farm....79
Cycle Hatcher Co....70
Des Moines Incubator Co....70
Essex, Robt. Incubator Co....70
Golden Rule Incubator Co....79
Hackett's Gape Cure....71
Ironclad Incubator Co....70
Johnson, M. M....70
Knudson Mfg. Co....72
Knudson Mfg. Co....80
Lee, Geo. H. Incubator Co....70
Nebraska Incubator Co....11
Ohio Marble Co....72
Perfection Metal Brood Coop Co. 70
Raisall Remedy Co....71
Rayo Incubator Co....71
Sanborn, Dr. Nathan....79
Savage, M. W....72
Shorewood Farms....70
U. U. Co., Box 48....79
White, Bob, Co....79
Wyandotte Refineries....79

Insecticides
Ansbacher, A. B. & Co....74
Blanchard, James A....74
Bowker Insecticide Co....58
Devoe & Raynolds....26
Dow Chemical Co....18
Gardiner Johns Co....57
Hemingway London Purple Co....38
Horticultuial Chemical Co....38
Kentucky Tobacco Co....57
Merrimac Chemical Co....44
Michelson Kill Em Quick....26
Pratt, B. G. & Co....51
Rex Co....69
Taylor Instrument Co....38
Vreeland Chemical Co....27

Ladders
Bacon & Co....37

Lighting Systems
Detroit Heating & Lighting Co...65
Sunshine Lamp Co....65
Union Carbide Sales Co....30

Lumber and Building Materials
Chicago House Wrecking Co..42-43
Chicago Wrecking Co....65
Gordon-Van Tine Co....37

Manure Spreaders
Galloway, Wm. Co....19

Nurserymen
Allen Bros....58
Allen, W. A. & Son....80
Allen, W. F....53
Anderson, P. A....80
Bauer, J. A....49-53
Benson Omaha Nursery....53
Berrydale Experimeut Gardens ..68
Biltmore Nurseries....34
Boonville Nurseries....58
Brunswick, M. & Co....54
Buteyns, M. C....80
Chattanooga Nurseries....53
Conard & Jones....80
Dodge, Blackley & Co....53
Farmer, L. J....40
Flansburgh, C. N. & Son....53
Flansburgh, C. N. & Sons....80
Flansburgh & Potter Co....53
Fremont Nurseries....53
Gardner Nursery Co....31
Gilbertson, A. O. & Co....46
Githens, D....69
Grand Mere Nurseries....53
Grand Mere Nurseries....80
Green's Nursery Co....54
Gregory, Frank H....31
Griesa Nurseries....37
Hall, John W....53
Harrison, J. G. & Sons....33
Hawkeye Nurseries....80
Helm, Alfred C....26
Hoffman, C. W....80
Hill, D. Nursery Co....33
Holsinger Bros....6
Holsinger Bros....53-53
Hopedale Nurseries....39
Hopson, W. C....80
Hopson, W. C....62
Hubach, Louis....80
Humphrey Nurseries....23
Jones, J. W. & Son....24
Kellogg, R. M. Co....22
Knight, David & Son....80
Koell, W. H....80
Krider, Vernon H....80
Louisiana Star Nurseries....80
Lovett, J. T....47
Mallory, N. E....80
May, L. L. & Co....3d cover
Mayer's Plant Nursery....80
McNallie Plant Co....10
McNair, C. W....80
Newburys, The....80
New Haven Nurseries....53
Norton, Arthur L....52
Ontario Nurseries....22
Peru Nurseries....40
Norman, Pomeroy....69
Randall, Alton E....80
Roeder Nurseries....52
Santa Clara Valley Nurseries....31
Scarff, W. N....40
Seligman Plant Co....53
Sheboygan Ginseng Gardens....80
Slaymaker & Son....58
Smith, Benj. F....80
Stark Bro's N & O. Co....4
Stirdevant, Geo....80
Sunnyslope Nurseries....79
Sunny Slope Nurseries....21
Teas, E. & Son....80
Thomas, W. W....40
Turkey Creek Nurseries....80
Turner, Zachary....80
Urschel, Wm....59
Waller, O. C....63
Westgate, H. L....80
Westminster Nurseries....52
Weston, A. R. & Co....53
Whitten, C. E. Nurseries....40
Wichita Nurseries....80
Wiley, H. S. & Son....52
Winfield Nurseries....8-9
Winfield Nurseries....80
Winfield Nurseries....44
Wood, Allen L....48
Wooster Nursery Co....37
Youngers & Co....52

Orchard Heaters
Hamilton Orchard Heater Co....75
Orchard Supply Co....10
Richardson Frost Prevention Co...49
Round Crest Orchard Heater Co..38
Underwood & Viles....69

Paints
Chase, O. L., Paint Co....35
National Lead Co....7
Standard Paint Co....72

Paper Pots
National Paper Box Co....51
Crosby, P. B. & Son....19

Pianos
Jenkins Music Co....64
Thiery Piano Co....2d cover
Townsend & Wyatt D. G. Co....66

Poultry
Adams, C. D....77
Adams, H. C....76
Aldrich, E. L....76
Alleshouse, J. A....78
Ames, H. C....77
Andrews, E. L....78
Anthony, Joseph....78
Arnold, C. C....79
Arrington, E. F....76
Ashmead, T. G....79
Ashmead, T. J....78
Ayers, J. A....77
Bailey, B. M....78
Barbee, John....79
Bailey, Enoch....76
Baldwin, Mrs. Anna H....76-76
Barden, E. H....78
Bardsley, Walter....77
Barlow, A. G....79
Barnes, F. E., Dr....77
Barnett, Dellsworth....77
Barrie, R....79
Bartig, Henry....76
Beaumont, Floyd S....78
Bear, Arthur....79
Bear, J. W....77
Beechler, L....76
Bechtner, Paul....76
Bender, James A....78
Bennett, Edwin A....78
Berry's Poultry Farm....70
Berger, H. C....78
Bergey, J. A....78
Bettis, Mrs. Clarence....76
Betts, Claudie....76
Biggerstaff, Mrs. Z. T....79
Bliem, Samuel....76
Bliss, D. J....78
Blum Hatchery....79
Boldig, Mrs. L....76
Boomgaarns Farms....77
Boss, Robert C....77
Bowman, Roy....77
Branch Valley Poultry Yards....77
Brasfield, Nat L....76
Brasfield, Nat. L....76
Brenneman, D. S....79
Brendle, H. S....77
Briel, F. R....77
Briggs, Edgar....76
Briner, W. H....77
Brock Bros....79
Brocker, Robert....77
Brogden, Thos....76-76-77
Brooks, Edgar....76
Brookside Poultry Farm....76
Brooks Sanitary Hennery....77
Brown Chas., Mrs....76
Brown, Fred....79
Brown, Harvey....77
Brum, D. L....78
Brum, Jno. F....77
Bruner, W....77
Buchanan, Mr. B. T....77
Buckel Poultry Yards....79
Buff Rock Poultry Farm....77
Bullington, F....77
Burford, Mrs. Jesse....77
Burk, A. P....79
Burke, T. H....77
Burkman, Amil....77
Burnett & Doolittle Hatchery Co. 79
Buss, Edward....77
Byrd, Mrs. J. N....77
Caldwell, H. A....77
Carlisle, J. C....79
Carnahan, Mrs. Frauk....76
Carpenter, F. E....78
Carson, Mrs. A. L....76
Carter, E. E....76
Cary's Farm....78
Casey, W. J....78
Cavanagh, Mrs. Edith....77
Cederdahl Poultry Farm....78
Cedar Hedge Poultry Farm....78
Chalker, W. G....78
Chamberlain, W. F....70
Clark, M. A....77
Clark, R. M....76
Clark, Will....78
Clymer, C. Henry....77
Cocklin, W. J. & Son....78
Colby, C....77
Cole, John, M. D....76
Cole's Poultry Farm....76
Conkey, G. E., Co....79
Conniscliffe Poultry Farm....78
Compton, Wm. E....78
Congdon, W. A....77
Cook, Earl L....77
Conradt, C. G....76
Cook, Mrs. Ethel....77
Coons, Frederick....77
Cowan, W. T....77
Croft, Dr. W. H....79
Cronk, N. P....78
Crosby Bros....78
Crosby, Fred....76
Crow Creek Poultry Farm....76
Crystal Orpington Farms....76
Crystal Poultry Yards....77
Culp, Frank S....78
Cunningham Bros....76
Curtis, Will....78
Custer, Oliver....78
Dahl, Wm. C....76
Damann, F. J....78
Davidson, M. H....77
Davis, A. V....78
Davis, Harold E....76
Davies, Samuel H....77
Dawson, C. C....77
Densmore, C. E....79
Deuterman, Mrs. Ferne....77
Dietrick, Dr. Thomas....79
Dietrick, Dr. Thos....77
Divinia, S. T....72
Doolittle, L. A....78
Doom, Mrs....78
Dougherty, W. H....77
Dowell, Mary....79
Doyle, John....79
Driggs, James A....77
Dunbar, Dradie....77
Duncan, G. D....78
Dunning, S. G....76
Durby, H. S....79
Edgedale Poultry Plant....78
Edgewood Farm....77
Egbert, W. W....76
Eisenman, J. C....76
Elam, W. A....79
Elk Ridge Poultry Yards....79
Ellerman, Geo. W....78
Ellerman, Wm....76
Ells Poultry Farm....77
Ellison, W. A....76
Elm Park Place....76
Emwood Farm....79
Empire Poultry Yards....78
Enterprise Yards....79
Essig, A....76
Euclid Poultry Farm....78
Evans, Dr....76
Evitts, L....76
Failing Poultry Farm....78
Fairholm Poultry Yards....77
Falkenbereg, C....78
Farley, W. C....78
Frakes, Wm....78
Fenn, A. A....76
Ferrill, L. J....79
Fetrow, Robert....78
Fewtrell, Thos....77
Finney, Alton....76
Firestone, John B....76
Fischer, Gregor....79
Fisher, G. F....77
Fisse, Henry, Jr....77
Foote, Wm....76
Forecastle Farm....78
Forest City Cornish Yards....76
Forestview Poultry Farm....77
Fosselmann, P. A....77
Fowler, Miss Susie M....77
Fowler Egg Farm....76
Fowlers, The....77
Fox, Franklin....78
Frantz, O. C....76
Frehse, P. W....80
Fries, Max....78
Fritz, J. N....79
Gallatin, J. L....79
Galt, Miss Louie B....78
Garnett, F. L....76
Gault, J. E....79
Gee Whiz Poultry Farm....77
Giles, R. E....78
Gillum, W. W....77
Gladish, Jas....79
Glenoak Poultry Yards....78
Gluesenkamp, A. W. & Son....78
Golden Gate Farm....78
Goldenrod Poultry Farm....79
Granite State Poultry Yards..76-77
Gray, D. E....78
Green, Horton....76
Green, J. Ed....79
Greider, B. N....70
Griffith, W. I....77
Griffith, Paul & Gordon....79
Grimes, O. T....78
Hafner, Jno. J....78
Hall, B. F., Jr....78
Hall, D. E....78
Hamilton, H. L....79
Hamilton, J. C....78
Hamilton, Mrs. W. S....78
Hammond, Ward L....76
Hampton, Wade....78
Hanman, Mrs. Henry....78
Hanna, Mrs. Ad....77
Hanna, L. B....77
Harbison, W. H....77
Hardin Poultry Farm....77
Hardman, W. H....76
Harris, Lee....79
Harshbarger, Mrs. Wm....79
Hart, Mrs. E. M....77
Hart, W. D....76
Hartman, Geo....71
Haskin, H. H....77
Haynes, T....77
Heabler, K. J....79
Heaps White Orphington Farm....77
Hedberg, Carl J....77
Hedberg, Carl J....71
Heilman, Frank....76
Hepp & French....79
Heinrich, Wm. A....76
Heintz, Will....76
Heitkamp, Henry....77
Heller, L. W....77
Hellman, Gerhard F....78
Hess, Wm. A....77
Highland Poultry Farm....76
Higley, T. F....78
Hillcrest Duck Farm....79
Hillcrest Farm....76
Hochstadter, J. A....76
Hodges, J. C....79
Hoffman....78
Holscher, John....76
Honey Creek Poultry Farm....78
Hoogerhyde, John W....78
Hooper, L. J....76
Hoppe, Wm. F....78
Horton's, Dr. J. D., Poultry Farm....76
Hosmer, C. W....76
Howland, R. W....77
Hoyle Poultry Farm....78
Huecker, Fred....76
Huested, Mrs. Chas....77
Hummel, S. H....71
Hummer, C....77
Hurley, S. L....77
Ideal Poultry Farm....78
Ingraham, C. G....76
Irons, J. H....77
Jacobs, Mrs. Ivan....79
Jackson, J. E....78
Jackson, Mrs. T. A....77
Jackson, Prof. T. H....78
Jaqua, Louella E....78
Jones, Mrs. D. C....78
Jones, Mrs. Fred....77
Joseph, J. B....77
Kahler, B. F....78
Kalvin, Dr. Henry M....78
Kapphahn, C. J....79
Kean, Thos. H....77
Keefer, J. H....77
Kellerstrass Poultry Farm....77
Kelley, H. D....77
Kelm, Fred....76
Kenworthy, Mrs. J. R....76
Ketcham, R. S....76
Kiger, Mrs. J....79
King, G. M....77
Khkbride....79
Kitchen, Joseph....79
Kitchen, Joseph H....76-78
Knapp, Arthur L....76
Knipple, Robt. G....78
Knodle, B. C....78
Knox, C. W....79
Kollmeyer, J. H....76
Kopfstein, A. W....77
Krebill, A. D....78
Krichbaum, C. V....76
Krueger, Mrs. F. C....78
Lafreniere, N. L....79
Lawson, H....76
Lang, C. F....76
Lange, H. M....78
Laughlin, Charley....76
Larason, Edw. M....76
La Rue, R. S....78
Latcham, S. V....77
Lebanon Poultry Yards....78
LeClere, Ed....77
Le Fevre, J....78
Lehmkuhl, Geo....77
Leidy, M. H....78
Le Master, I. A....78
Lewis, L....77
Lily White Poultry Farm....76
Little, Mrs....77
Little Sioux Poultry Pards....77
Long, Hiram....78
Lorenz & Co....78
Loutzenhiser, H....77
Lucas Bros....78
Lykens Valley Farm....76
Lyman, Mrs. Judson....77
Mable, G. C....76
Mack's Poultry Farm....78
Maple Leaf Poultry Yards....76
Maplewood Poultry Yards....78
Martin, Dr. J. H....77
Martin, Michelson....79
Mason, C. C....78
Mathews, Vernon....76
Mattison, Joseph, E....76
McConnell, J. Bert....79
McCormick, W. H....76
McCue, Leslie H....71
McDavitt, Leo W....77
McKean, Roland....76
McKibben, John....78
Medaris, Troy....77
Meek, Frank....79
Merihew, L. E....76
Merrill, O. F....76
Meyers, E. A....77
Mierley, John....78
Miller, J. M....77
Miller, K. I....76-77-77
Miller, M. L....79
Melzer, Will H....77
Mitchell, G. A....79
Minkel & Co....78
Minorcas Farm....76
Moehrl, Geo. B....76
Mohr, S. K....78
Moore, Mrs. Fred....77
Moore, J. L....76
Morgan, B. F....79
Morley, J. D....78
Mountain View Ranch....77
Myers, Mrs. Clyde....78
Mumpower, Mrs. L....79
Murphy, Ed B....79
Muskoday Farm....79
Myers, Mrs. Clyde....79-79
Myers, Mrs. J. W....79
Nafziger, A....76
Nelson, Henry....77
Neville Poultry Farm....76
Newell, J....79
Newcomb, F. S....76
Nicholas, E. J....79
Niebur, C. A....76
Norman, Calvin....78
North, D. P....77
Oertel, Fred....78
Ohio Hatchery....79
Ohlo Valley Hatchery....79
Oldfield, Mrs. M. F....78
Orchard Knob Poultry Farm....79
Orpington Farm....77
Orpington Yards....77
Orr & Dick....78
Ottawa County Hatchery....80
Overbeck, Benj....77
Oveson, Mrs. Christian....78
Owen, Thomas, Poultry Editor...77
Owen, C. G....79
Page, C. A....78
Palmer, Chas. M....76
Pavey, B....78
Pauly's Pheasantry....79
Peck, Frank F....77
Peerless Poultry Farm....76
Penifeld, H. J....78
Petersen, Aug....77
Peterson, Otto, Jr....78
Peterson, Wm. A....78
Pfile, Henry....79
Pfister, Mrs. S. W....77
Pifer, W. C. & Son....76
Pigeon Dept., Hillhurst Farm....79
Plymouth Rock Squab Co....79
Poehling, H. G....78
Porter, M. D....77
Poseley, H. E....79
Poultry Sprague....78
Powell, C. D....77
Powell, Mrs. E. B....71
Pratt, Ada....79-79
Pratt, Ada....77
Premium Poultry Farm....79
Prospect Poultry Farm....76
Purfield, Wm....77
Ramsey, Mary....79
Red Bird Poultry Yards....78
Red Journal....78
Reed, Dr. M. B....78
Rehm, Alden....78
Reid, Bernard....79
Reiff, Joseph....76
Reinhart Farms....79
Remlinger, W. T....77
Reynolds, H. V....78
Rhodaround Farm....77
Rice, W. E....76
Riddle & Sons....77-78
Ridge Egg Farm....76
Ried, Thil J....76
Rineville Poultry Yards....78
Roberts, Burt....78
Roberts, Forrest....78
Roberts, Jas....78
Robinson, James L....77
Rogers, E. A....79
Rose, Mrs. Daisy....76
Rose Lawn Poultry Yards....77
Rosland Poultry Yards....77
Roth, Otto M....77
Rowland, Frank....78
Ruark, W. P....77
Ruble, Harry T....72
Russell, W. S....77
Ryan, Mrs. Mary....79
Salyards, R. S....77
Schmeid Bros....78
Schmidt, Jno. J....76
Schnably, Gilbert W....77
Schoenbohm, Rev. F....78
Schowe, Henry, Jr....79
Seibert, D. W....76
Seidel, Wm....76
Selple, Monroe....78
Seymour, A. H....78
Shaffner, Wm. F....78
Shallcross, S. F....76
Shanander, Selma....78
Shaw, Ellsworth....79
Shaw, F. L....78
Shaw, Joseph....78
Sheka, W. H....79
Sheldon, D. L....79
Shelly, P. G....79
Shepard, Geo....78
Sheppard, Cecil....76
Sherpy, Mrs. O. V....77
Shirk, Henry Y....78
Shirley, Sylvester....76
Shuman, Ed J....76
Sinsabaugh, A. M....78
Skillman, John....78
Skinner, J. M....77
Smith, C. R....79
Smith, Franklin A....78
Smith, Herbert....78
Smith, Oscar....77
Snowball Poultry Yards....78
Snyder, H. A....77
Snyder, Joseph R....79
Snyder, W. C....80
South Kenton Poultry Farm....79
Southern Slope Poultry Farm....79
Southside Poultry Yards....78
Southworth, C. U....78
Souder, H. A....78
Spence, J. F....78
Spitze, Geo. L....77
St. George, H....79
Stackhouse, C. M....76
Standard Bred Poultry Farm....77
Stark, O. F....77
Starr, A. E....77
Steldinger, Walter....77
Stevenson, Marlon....77
Stick, Harley R....78
Stock, Verne D....79
Stoughton, Geo. A....76
Strayer, D. A....77
Street, L. R....79
Sunnyside Poultry Farm....77
Sunnyside Poultry Farm....79
Superior Poultry Farm....77
Swedburg, N. E....77
Sweet, Chas. T....78
Teasley, Mrs. D. O....70
Teasley, Mrs. D. C....79
Teegarden, H. A....76
Texas Orpington Farm....77
Thomas, Chas. F....78
Thurman, Wm....77
Tietsort & Stutzman....77
Trettin, E. & J. W....78
Turman, Dr. Walter....77
Turner, F. G....77
Turner, Z. T....76-78
Tuttle, John....79
Valley View Poultry Farm....77
Valley View Poultry Farm....79
Van Cleve, J. W....79
Vanderbilt, C. K....79
Vanderhoff, A. H....77
Van Reemen, D....76
Van Rensselaer, L. D....78
Verbeckmoes, Art. W....78
Voirol, Herman C....79
Vreeland, Mrs. W. H....77
Waldron, Ed F....79
Walnut Grove Poultry Farm....76
Walnut Hill Hatchery....79
Ward, D. J....78
Wardwell Poultry Yards....77
Ware, Frank....77
Watertown Poultry Farm....78
Watson, Ira....78
Webb, E. M. & Son....78
Weber, Julius W....76
Wegener, T. H....77
Welch, Harry....77
Wells, Oscar....79
Wells, E. E....76-78
Wells, M. E....76
Wells, M. G....78
Wells, Oscar....76
Wenz & Mackensen....78
Western Poultry Farm....72
Wheatland Farm....77
White Feather Farm....78
White, A. H....78
White, Chas....76
White, S. A....76
Whitney & Son....79
Wilbert, F. C....78
Wilcox, J. R....77
Willis, J. H....76-78
Williams, A. D....79
Williams, V. T....77
Wilson, Ralph....79
Wingo, Geo. W. & Son....77
Wise, Julia E....79-79
Wood, F. F....77
Wood, Mrs. John....76
Wood, Mrs. W. S....76
Woodruff, Dr. R. O....78
Worl Bros....79
Wright, W. F., Sr....77
Wyandotte Ranch....78
Yarmond Poultry Farm....76
Yocum, E. G....78
Yaggy, Henry....79
Yates, J. W....79
Yoder, Levi....79
Yost, C....79
Yost, C. O....78
Young, Theo....78
Ziemers Poultry Farm....78
Zimmer, C. H....76
Zurburg, C. H....78

Live Stock
Bowersox, M. L. Co....80
Falkey, Luther....80
Hoyt, W. A....80
Weaver, W. D....80
Wickersham, G. H....80
Worley, Cylde M....80

Pruning Tools
Fruit Growers Saw Co....27
Ideal Prunlng Saw Co....27
International Tool Co....61
Monarch Pruner Co....27
Rhodes Mfg. Co....27

Railway Companies
Colorado Midland Ry. Co....58
Cotton Belt Route....54
Denver & Rio Grande Ry....29
Missouri Pac. Iron Mt. Ry....58
N. & W. Ry....54
Seaboard Air Liue Ry....54
Southern Ry. Co....22

Roofing Materials
Barber Asphalt Paving Co....65
Century Mfg. Co....65
Chicago House Wrecking Co....47
Mastic Wall Board Co....65
Standard Paint Co....72

Seedsmen and Florists
Anderson, A. C....53
Archals Seed Store....48
Baines, Ella V....48
Barteldes Seed Co....12
Berger, H. H. & Co....62
Berry Seed Co., A. A....47-48
Buckbee, H. W....48
Burpee, W Atlee....47
Cowee, Arthur....80
Ellwanger & Barry Co....48
Ensor, W. E....55
Farmers Seed & Nurs. Co....24
Field, Henry, Seed Co....25
Fox Hall Farm....80
Halbert, H. A....80
Heller Bros. Co....63
Iowa Seed Co....48
James, R. H....53
Mills Seed House....49
Peppard, J. G., Seed Co....48
Perry Nurseries....80
Riebel, F. M....80
Ross Bros. Seed House....49
Salzer, John A., Seed Co....48
Selig, John W....80
Stillman, Geo. L....48
Storra & Harrison Co....48
Thorburn, J. M & Co....22
Thompson, Mark....80
Ware, I. L....80

Sprayers and Appliances
Arnold Specialty Co....26
Bateman Mfg. Co....28-36-44-56
Bean Spray Pump Co....36
Brown, E. C. & Co....34
Carbondale Instrument Co....38
Crown Specialty Co....69
Cushman Power Sprayer Co....10
Deming Co....16
Detroit Eugine Works....36
Fairbanks, Morae Co....6
Field Force Pump Co....41
Friend Mfg. Co....74
Galloway, Wm. Co....14
Gilson Mfg. Co....26
Goulds Mfg. Co....45
Hamilton Rubber Co....28
Hardie Mfg. Co....29
Heesen Bros. & Co....63
Hurst, H. L., Mfg. Co....36-46
Jones, Post & Co....27
Morrill & Morley....28
Myers, F. E. & Bros....45
New-Way Motor Co....13
Owen, W. H., Sprayer Co....26
Peppler, Thos. & Son....50
Ripley Mfg. Co....19
Rochester Spray Pump Co....50
Sherwin-Williams Co....57
Simplex Mfg. Co....61
Smith, D. B. & Co....55
Spramotor Co....15
Stahl, Wm., Sprayer Co....45
Standard Stamping Co....41

Steel and Rubber Shoes
Mishawaka Mfg. Co....3d cover

Stoves and Ranges
Majestic Mfg. Co....15

Stump Pullers
Milne Mfg. Co....50

Talking Machines
Victor Talking Machine Co....67

Tanks
Columbia Steel Tank Co....18

Tree and Plant Protectors
Burlington Basket Co....61
Davis, John W., Jr....81
Mendenhall, T. G....59
National Paper Box Co....28
St. Louis Basket & Box Co....15

Veterinary
Lawrence, Williams....61
Wilbur Stock Food Co....back cover

Wagons, Wheels, Etc.
Electric Wheel Co....61
Split Hickory Wheel Co....41

Water Supply Systems
Missouri Water & Steam Supply Co....64

Well Drilling Machines
American Well Works....50
Keystoue Well Works....50

Windmills
Stover Mfg. Co....41

Wire Fencing and Gates
Advance Fence Co....71
Brown Fence & Wire Co....73
Coiled Spring Fence Co....73-73
Interlocking Fence Co....73
Kitselman Bros....72
Kokomo Fence Co....73
Mason Fence Co....71
Ottawa Mfg. Co....73
Tiger Fence Co....73
Up-to-Date Mfg. Co....61
Ward Fence Co....73

Miscellaneous
Allcock's Plasters....65
Barber, H. L. & Co....80
Brandts, G. R., Cutlery Co....55
Brooks, C. E....28
Burnham, Munger, Root Co....62
Chandlee & Chandlee....58
Clipper Lawn Mower Co....50
Coleman, Watson E....58
Collins, Capt. W. A....61
Cox, J. & Co....80
Crawford Mfg. Co....80
Dale Watch Co....66
Davis, H....80
Dodge & Zuill....28
Dorn, J. C....27
Dupont Powder Co....55
Fruit-Grower (Catalogs)....62
Fruit-Grower (Classified)....76
Gardner Office Supply Co....61
Gregory, J. A....80
Harvey Spring Co....46
Hendee Mfg. Co....55
Kaldenberg, T. H....80
Kriger, Orvil....80
Marlin Firearms Co....47
Nat. Co-operative Realty Co....54
Northwestern Needle Co....64
Old Dutch Cleanser....64
Palace Mfg. Co....29
Plapoa Laboratories....28
Rife Engine Co....41
Sanders, H. J....80
Shepard & Campbell....80
Sperry, D. R & Co....50
Strite Governor Pulley Co....50
Stodghill, J. D....80
Weaver, W. D....80

THE BOOK TABLE

"Increasing Human Efficiency in Business"—This is a book by Prof. Walter Dill Scott, and is published by the Macmillan Company, New York. It is a most valuable contribution to the business literature of the present time. In it the author calls attention to the fact that men are constantly striving to improve machinery so that the output will be increased; scientific tests are made to determine what is just the right speed for operating machines, to get best possible results, but until recently but little thought has been given to the "human machine," which must always be an important factor in all lines of business.

At first thought it would seem as though farmers are but little interested in this subject, but one who reads the book carefully will readily see that farmers are interested, not only that they may increase their own efficiency, but the efficiency of the men who work for them. Suggestions contained in this book will be most helpful to those persons who regard their farms as factories and who are interested not only in maintaining the fertility of the soil, but of increasing the efficiency of the men who do the work. This book is a most valuable one and can be read with profit by every employer of labor. The price of the book is $1.50, postpaid, and can be ordered direct from the publishers, Macmillan Company, 66 Fifth avenue, New York, or through The Fruit-Grower.

Two Good Bungalow Books.

E. W. Stillwell & Co., Los Angeles, Cal., send The Fruit-Grower a copy of each of their two books, "Representative California Homes" and "West Coast Bungalows." These books are among the best that have been issued to show the very attractive, convenient and home-like bungalows which are now so popular, and especially for country homes. The first-named book describes and illustrates bungalows costing from $1,500 to $6,000, and "West Coast Bungalows" tells about a most attractive lot of homes costing from $500 to $2,000 each. These books have the good quality of being illustrated with photographs of buildings actually erected, and not pictures made from drawings. A floor plan accompanies each illustration, together with an estimate of cost, this estimate being based on conditions existing in California. These books sell at 50 cents each, and are worth the money to anyone contemplating building a home. They will be sent postpaid to anyone who will send 50c each to the publishers, E. W. Stillwell & Co., Los Angeles, Cal.

New Bulletins.

A New Method of Removing Alkali in Irrigated Lands—By J. H. Squires, Du Pont Dept. Agr., Wilmington Del.

The Identification of Important North American Oak Woods—By Sudworth and Mell. Bul. 102, Forest Service, Washington, D. C.

Ice Houses—By L. C. Corbett, Farmers' Bul. 475.

Hungarian Partridge and Pheasants in Missouri—By Jesse A. Tolerton, Department of Game and Fish, Jefferson City, Mo.

Pecans—By W. N. Hutt, Bul. 156, Dept. Agr., Raleigh, N. C.

The Army Remount Problem—By Geo. M. Rommel, Cir. 186, Bureau Animal Ind., Washington, D. C.

Grape Propagation, Pruning and Training—By Geo. C. Husmann, Farmers' Bul. 471.

How to Prevent Typhoid Fever — By Page, Mohler and Smith, Farmers' Bul. 478.

New England Trees in Winter, Blakeslee and Jarvis, Bul. 69, Storrs Exp. Sta., Storrs, Conn.

Proceedings Georgia State Board of Entomology and State Horticultural Society, Bul. 35, Atlanta, Ga.

The Dying of the Pine in the Southern States: Cause, Extent and Remedy—By A. D. Hopkins, Farmers' Bul. 476.

Forestry in Nature Study—By Edwin R. Jackson, Farmers' Bul. 468.

The Advocate in Hawaii—By Higgins, Hunn and Holt, Bul. 25, Hawaii Exp. Sta.

Alfalfa in Ohio. W. M. Cook, Cir. 113, Ohio Exp. Sta.

Peach Growing in Alabama, Williams and Price. Bul. 156, Ala. Exp. Sta., Auburn, Ala.

A Visual Method for Determining the Penetration of Inorganic Salts in Treated Wood. E. Bateman. Cir. 190, Forest Service, Washington, D. C.

County Schools of Agriculture and Domestic Economy in Wisconsin. A. A. Johnson, Bul. 242, Office of Exp. Sta., Washington, D. C.

The Maintainence Ration of Cattle. H. P. Armsby, Bul. 111, Pa. Exp. Sta., State College, Pa.

Does the Apple Orchard Need Fertilizers? F. H. Hall, Bul. 339, N. Y. Exp. Sta., Geneva, N. Y.

The Use of Paint on the Farm, by Percy H. Walker. Farmers' Bul. 474.

Systems of Farming in Central New Jersey, by Billings and Beavers. Farmers' Bul. 472.

American Medicinal Leaves and Herbs, Alice Henkel, Bul. 219, Bureau Plant Industry, Washington, D. C.

Poultry House Construction and Yarding, by H. L. Kempster, Bul. 266, Mich. Exp. Sta., East Lansing Mich.

How Contract Insecticides Kill, by Geo. D. Shafer, Tech. Bul. 11, Mich. Exp. Sta.

Lime-Sulphur Spray, by Jas. E. Harris, Tech. Bul. 6, Mich. Exp. Sta.

Poultry House Construction. Halpin and Ocock. Bul. 215, Wis. Exp Sta.

Pollination.

It is now agreed among commercial orchardists that apples and pears should not be planted in large blocks of single varieties on account of partial failure of proper pollination. A few varieties pollinate themselves fairly well when planted alone. A yet larger number of varieties are more or less self-sterile.

In our orchards, with thirty-six thousand trees so far planted and not to plant more than four rows and more to follow, we have been careful then change to another variety. Our commercial orchard is limited to eight varieties, ninety per cent of which, of thirty-two thousand trees are Jonathan, Rome Beauty and Winesap, with the other four thousand divided among Grimes Golden, Delicious, Winter Banana, King David, Stayman Winesap and Janet.

In our Nebraska commercial orchards, as we were nurserymen as well as orchardists, we felt impelled to experimentally test nearly everything which we sold to our customers. We therefore planted some two hundred leading varieties of fruit and were able to show at the State Fair, at one date in the season one hundred and eighty-four varieties of fruit. Our orchards were regarded as very successful, partly perhaps by reason of superior cultivation and in part due to more or less complete pollination.

In considering the question of what varieties are more or less self-sterile the following varieties are defective in self-pollination:

Arkansas Black, Fellan Belleflower, Red Astrachan, Ben Davis, Canada Red, Early Ripe, English Golden Russet, Fameuse, Gilpin, Golden Pearmain, Gravenstein, Huntsman, King, Mammoth Black Twig, Mann, Missouri Pippin, Northern Spy, Paragon, Porter, Red Streak, Rhode Island Greening, Roxbury Russet, Spitzenberg, Stark, Stayman, Strawberry, Talman Sweet, Westfield, Williams Favorite, Willow Twig.

The following varieties have been found more or less self-fertile and capable of producing fruit when standing alone and not cross pollinated.

Alexander, Baldwin, Sweet Bough, Cooper's Early, Chenango, Early Harvest, Esopus, Jonathan, Smith's Cider, Smokehouse, Twenty Ounce, White Winter Pearmain, Winesap, and Yellow Transparent.

With many of the varities in this list not more than one blossom in a hundred sets fruit when depending on self-fertilization. With scarcely any is a good crop secured and in nearly every instance the fruit is smaller and less desirable than cross-pollinated fruit. The conclusion seems inevitable that large blocks of a single variety of apples should never be planted. Varieties should be intimately mixed in the orchard to insure cross-pollination. These varieties should be such as will blossom about the same time and capable of cross-fertilizing each other. With respect to the latter point, Jonathan, Huntsman and Cooper's Early have proven especially valuable as pollenizers, while Paragon, Stayman and Winesap are weak pollen-bearers. The common rule is to plant one row of a strong staminate variety to every three rows of the pistillate.

Nebraska. E. F. STEPHENS.

Organization the Thing.

Prof. S. W. Fletcher, of the Virginia Experiment Station says: "There is to be increasing competition in apple growing, and lower prices. Against the organized competition of other states individual growers can do little. As organizations they can hold their own against any competition. I regard the organization of shipping associations as the most important problem before Virginia fruit growers today. It is certainly far more important than any cultural problem that will be discussed here."

Wants Good Fruit-Grower Neighbors.

Mr. Peter Wunderlin, Wiggs, Ark., writes The Fruit-Grower to ask if we can send him some good neighbors who are interested in horticulture. He says he lives eleven miles from Hot Springs, Ark., in a section where fruits of all kinds do well. Local market is good, land is cheap and the outlook is most encouraging. Mr. Wunderlin has no land for sale, but says he wants good horticultural neighbors so badly that he will be glad to show any reader of The Fruit-Grower around, to get them interested.

Renew your subscription today.

The "Ball-Band" Trade-mark Is Rubber Footwear Insurance

Provide yourself with "BALL-BAND" Rubber Boots NOW, and thus make sure that your feet will be dry and comfortable through all the wettest, coldest weather of the season.

Right now you have time to look for the "BALL-BAND" store, where you get the longest wear and the utmost comfort and satisfaction for your money.

There are now more than eight million wearers of "BALL-BAND." Many of these millions have worn "BALL-BAND" for years. Ask any of these about "BALL-BAND" quality. To maintain this quality we sacrifice one million dollars profit every year, and put it into materials and workmanship. The RED BALL sign—the trade-mark—is displayed by many dealers in their windows or store fronts for your guidance.

Whether you see the sign or not, you are sure to find the RED BALL trade-mark on all "BALL-BAND" goods. Insist on seeing it. It is your protection.

Forty-five thousand dealers in all parts of the country sell "BALL-BAND" Footwear. If by any chance your dealer can't supply you, write us, mentioning his name, and we will see that you are fitted.

Mishawaka Woolen Mfg. Co.
Mishawaka, Indiana
"The House That Pays Millions for Quality"

(62)

The Guaranted Minnetonka APPLE

The latest triumph of apple culture, "THE MINNETONKA" thrives luxuriantly and yields prolifically in the most rigorous climate where all others fail. The fruit is very large, flesh tender, crisp, sub-acid, the ideal cooking and choicest desert apple, very small core, blight proof, HARDY AS AN OAK.

Edw. Erkel, Le Sueur, Minn., writes us as follows: "I have nothing but praise for the Minnetonka Apple, out of 9 trees purchased of you, 7 are alive and doing finely, was obliged to thin out fruit as it was too heavy for the trees, picked 10 bushels and there was plenty of fruit left."

C. Hennings, Willmar, Minn., writes: "The Minnetonka is a lovely apple, both in appearance and taste, and I think finer than the Wealthy."

WE GUARANTEE every tree of "The Minnetonka" to produce a bushel of fruit, and will replace free of charge, every tree that dies before this result is obtained. **CAUTION, none genuine unless bearing our seal.**

PRICES—4 to 5-foot trees, 75c. each; 3 for $2.00; 6 for $3.00; 12 for $6.00; by express or freight. Mail order size—one year old, 40c. each; 3 for $1.00; 6 for $1.75; 12 for $3.00, postpaid.

FREE BOOK contains the CREAM OF ALL THE GOOD THINGS for the FARM and GARDEN worth growing at the right prices. It is the leading SEED, PLANT and NURSERY catalogue. Send for copy it will save you money.

L. L. MAY & CO. - - ST. PAUL, MINN.

MAYFIELD NURSERIES—MOST NORTHERN IN AMERICA

Built in the Ground

Don't buy expensive wooden posts, when it will cost but little if any more for the initial outfit to make a perpetual post—an everlasting post—one that is built right in the ground. You can build these posts yourself out of sand, gravel or crushed stone screenings. In 30 minutes the form can be removed and with our outfit of four forms, you can build four posts per hour. This outfit will pay for itself, just for your own personal use, to say nothing of taking on extra jobs on which you can make good money. Before you buy any more posts, investigate the IDEAL CEMENT POST OUTFIT. Why not write today?
THE IDEAL POST CO., PORTLAND INDIANA

Wilbur Stock Food Company, Milwaukee, Wisconsin. Arcadia, Oklahoma.

Gentlemen: Received my watch in good condition and was surprised to find it so nice, and I appreciate it very much. It has kept good time ever since I got it, and don't see how you could have sent it.

I think your Stock Food is the best made. Have used several different kinds of Stock Food, but never found any that will do as much as yours. I have sold ten pigs (would have been six months old the middle of February), and they weighed 200 pounds apiece. Some wanted to know how I fattened them and what I fed them that made them grow so fast and, of course, I had to tell them it was Wilbur Stock Food.

I have seven head of horses and they are rolling fat. When I hitch them up they are so high-lifed that I can hardly do anything with them. They are always up and ready to go. Everybody wants to know what keeps them in such good condition, and I tell them it is your Stock Food that does it. I have a team that is equal to your champion team on your envelopes. They are fine and eat Stock Food three times a day. I thank you to, p st favors and remain, Your agent. W. M. RANDLE.

Wilbur Stock Food Company, Milwaukee, Wis. South Royalton, Vt.

Gentlemen: The stock food that you sent me several weeks ago works to perfection, as my stock is in much better condition with less grain than when I commenced to feed it. Yours respectfully, FRANK RAND.

Wilbur Stock Food Company, Milwaukee, Wisconsin.

Gentlemen: Enclosed find draft for $13.00 in payment for Stock Food. I have used two pails of your Stock Food. It is certainly fine. I have used everything on the market, but nothing to compare with the Wilbur Stock Food. My milk cows, calves, hogs, and colts, after feeding three days, I noticed the change. It has saved me many a sack of grain. My horses are slick and fine, also are working hard every day. Will enclose water certificate, and, thanking you for past favors, I am, Yours very truly, (Signed) CASPER SCHWAB.

Kremmling, Colo.

Wilbur Stock Food Cimpany, Milwaukee, Wisconsin. Williamsburg, Ohio.

To Whom It May Concern: I have used Wilbur Stock Food and can say I will use it as long as I have any stock, whatever kind it may be, to feed. Feed your chickens, and you get more eggs; feed your horse, and he will do more work; feed your cow and she will give more milk; feed your hog and he will give more pounds of pork; and, to make a long story short, you can't afford to be without it. So please hurry my five-pail order to me. Sincerely yours, JAMES J. WAGNER.

Let me fatten 'em up

FREE

THIS BIG $1.00 BOX FREE

I want to give you this big free $1.00 box of my Stock Food as a sample.

I want you to feed it to your horses, your cattle, your hogs, your sheep and your poultry. I want you to know for yourself why

Wilbur's Stock Food

is fed by over 500,000 farmers and stockmen. I want you to know why and how it saves feed—prevents disease and doubles your profits.

Send Me No Money—Not Even a Stamp—This Big Box of Stock Food Costs You Nothing

Not one cent now or at any other time do I want for this big $1.00 box. Contains 340 feeds—enough for a good practical feeding test. I know that every stock raiser who tries this free $1.00 box will continue to use my Food. That's why I can afford this great free offer—that's why I am ready to send one million free boxes to one million American farmers.

Wilbur's Stock Food builds up run down horses—cleans the blood, softens the stomach. Revitalizes the entire system and positively prevents all disease.

My Food doubles the milk and butter when fed to milch cows, fattens hogs and beef cattle for market in 40 days less time. Prevents scours when fed to sheep.

As a poultry raiser and egg maker it has no equal—makes strong, healthy chicks, doubles the egg supply and absolutely prevents Pip, Roup, Gapes, Bowel Trouble and all Poultry Disease.

$1.00 Free Box Coupon

E. B. MARSHALL, Pres.,
Wilbur Stock Food Co.,
534 Huron St., Milwaukee, Wis.

Please send me the FREE $1.00 box of Wilbur's Stock Food,

I own ___ horses ___ cattle ___ hogs ___ poultry.

My Name _____

P. O. _____ R. F. D. _____

Freight Sta. _____ State _____

All you have to do is send the coupon—no money

Is it worth a two-cent stamp to write for my big free $1.00 box? Do you want to double your profits and save your live stock? If so, clip out this coupon and mail today.

E B Marshall
President

WILBUR STOCK FOOD COMPANY
534 Huron St., Milwaukee, Wis.

$1,000.00 Guarantee

We will pay $1,000.00 cash to any person who proves this offer of FREE $1.00 box is not exactly as advertised

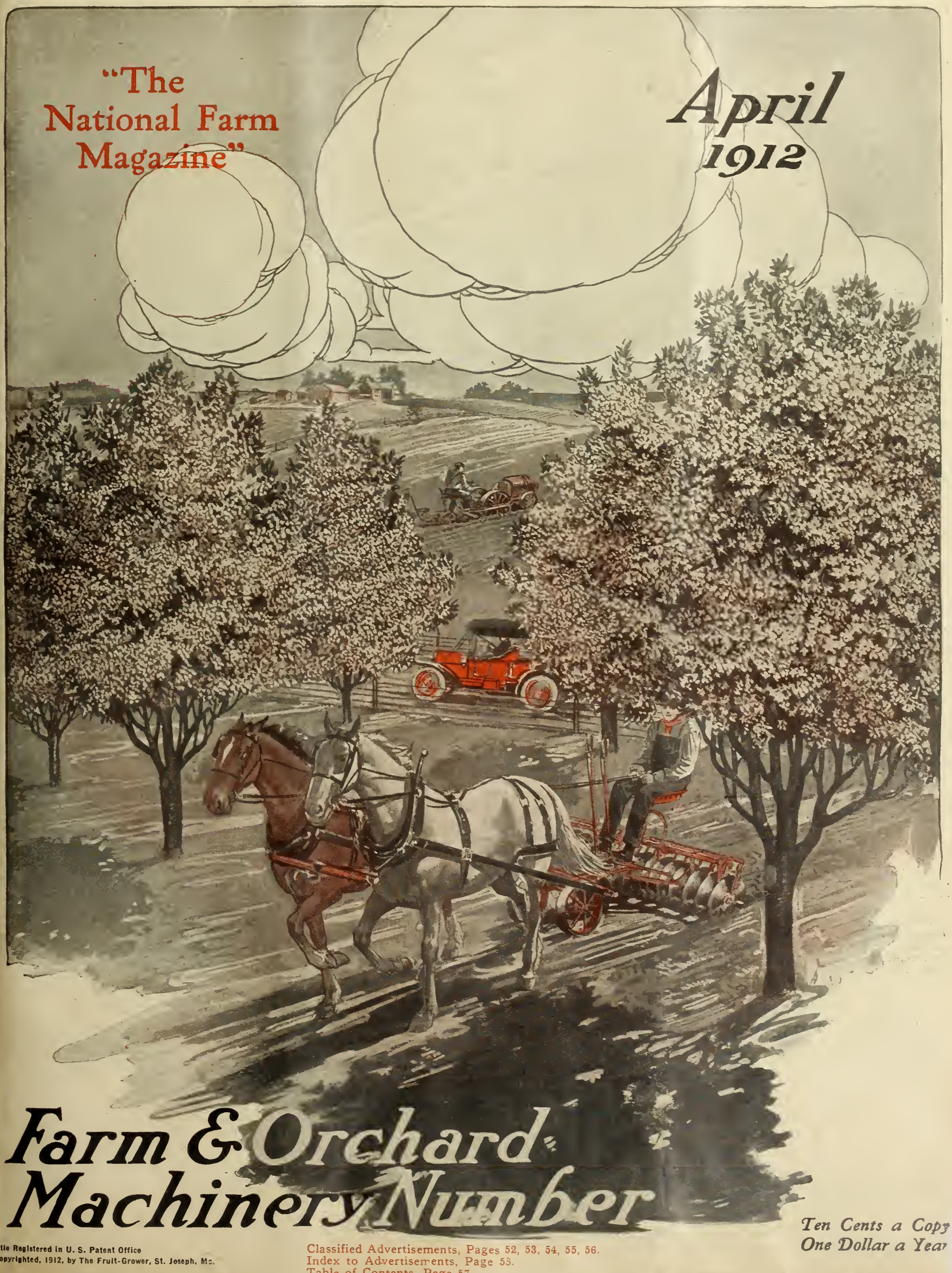
Volume 23 Number 4

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

"The National Farm Magazine"

April 1912

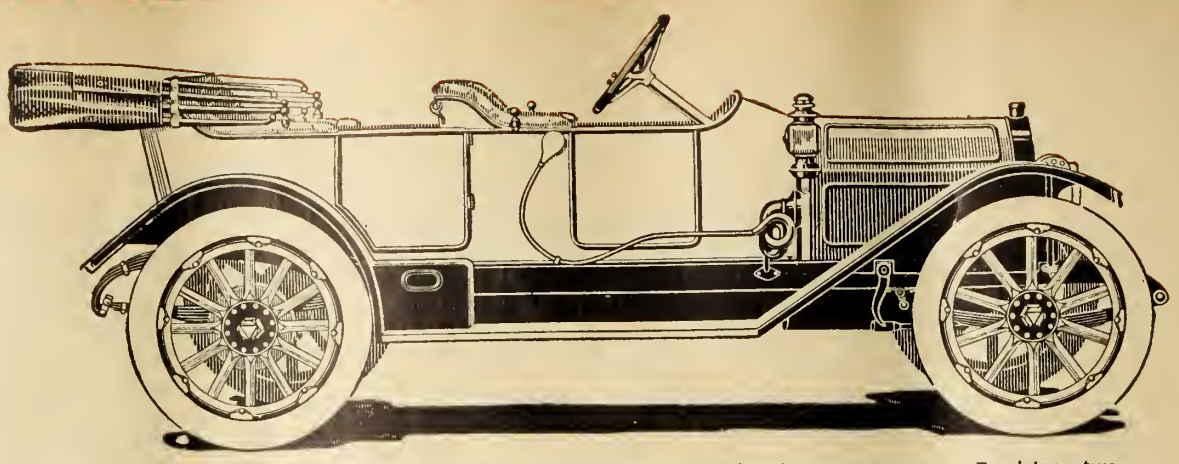


Farm & Orchard Machinery Number

Title Registered in U. S. Patent Office
Copyrighted, 1912, by The Fruit-Grower, St. Joseph, Mo.

Classified Advertisements, Pages 52, 53, 54, 55, 56.
Index to Advertisements, Page 53.
Table of Contents, Page 57.

Ten Cents a Copy
One Dollar a Year



The price for either of three models—Touring, five-passenger—Torpedo, four-passenger or Roadster, two-passenger—is $1600. Not a cent more is needed to equip either car before it is ready for use, for top, Disco Self-Starter, Demountable rims, BIG tires, windshield, large gas tank, magneto—dual ignition system—and all things usually listed as extras are included. Write for illustrations showing how the NEW Self-Starting HUDSON "33" is simpler than any other car.

Examine Our Rivals' Car, Too

We urge you to examine other cars as well as the *New* Self-Starting HUDSON "33."

If you can't find it convenient to personally examine the other cars, get catalogs and compare the illustrations. Lay the photographs of the engines and chasses side by side.

Note as a comparison of simplicity the complications of other self-starters, if there is one. Some use miles of electric wire. They are so heavy that they tax the engine with power to operate them and add a load to the car weight equal to an extra passenger.

Note how easily such starters can get out of order. Many starters are so much a part of the car that when they are out of order the automobile is out of commission.

Now turn to the amazingly simple HUDSON "33" Self-Starter. Note its weight of only four pounds. Note its utter simplicity of only twelve parts. It is the only self-starter that Howard E. Coffin—America's foremost engineer would O. K.

Many cars having a jumble of rods, wires, exposed mechanism—and other mechanical obstructions—are difficult to understand.

See how they are bound to collect dust and sand that must eventually ruin the car. Vital parts of cars of such design are so inaccessible that they cannot be reached except by tearing out other parts of the car.

These things add greatly to the cost of maintenance. They interfere seriously with the performance of the car.

You need not be an automobile expert to understand such disadvantages.

You immediately recognize that by eliminating approximately 1,000 parts, we can put the money thus saved into bettering the quality of the parts that are used. That is why experts do not compare the HUDSON with other cars selling within its price-range—between $1400 and $2000—but with cars which sell above $2500.

What This Means in Reducing Repair Charges

Most repair expense is for the time required to remove the obstructions that interfere with the free access of the part needing attention and for the replacing of those rods and wires and other things after the repair has been made.

At 60 cents an hour—the minimum charge for such service—you can understand what this means when four or five hours must be consumed in removing and in replacing parts in order to make an adjustment that, were it not for this inaccessibility, could be made in a few minutes. You save all such expense and annoyance if you own a NEW Self-Starting HUDSON "33." It is accessible in every detail.

The Dust Proof Idea

Dust and sand cut the finest bearings.

No amount of wear is so destructive. Note what provision has been made in other cars for protecting moving parts and then look at these details on the HUDSON "33." The valves are enclosed. Dust never gets into their mechanism. They are protected from such wear. Thus they are not so likely to become noisy. Every moving part of the car is fully protected and that means long service. It means a greater operating economy.

A Value Catalogs Cannot Show

It is impossible to fully compare values of automobiles by reference to illustrations and catalogs.

Even experts do not always know the character or suitableness of materials for the functions they must perform, even when the cars can be personally examined.

You cannot realize beauty by looking at illustrations. You cannot appreciate quality of finish by a hasty examination.

To do this you must have had the car for some time and then have learned how well the finish stands up under service.

You must ride in the cars to know their riding qualities. You must drive them to know which is easier to operate.

Experts Do Not Know

Even a skilled musician cannot correctly choose which of two pianos has the finer tone if he cannot test the instruments side by side.

By looking at an automobile in one salesroom and another at another place, aren't you likely to be persuaded in your choice by the more convincing salesman?

You may measure the seats and find a difference in the width, but can you carry in your mind for half an hour the qualities of one while examining the other?

Others have found that they can't do that.

But they have learned a better, safer way to choose. They make their choice as they choose their doctors. Not by demanding that the doctor explain how he will treat their affliction, but by the successes he has had for others.

Having confidence in him, his advice is faithfully followed.

Engineers must necessarily know more of their work than do laymen. In this they are experts. Their reputations rest upon their accomplishments. Why not, then, choose the most successful engineer and accept his work as the car you should have?

In such a case your choice would be the NEW Self-Starting HUDSON "33," for it is Howard E. Coffin's greatest car.

Thousands in the hands of owners endorse the wisdom of such a choice. The long, hard service those cars have given to the individuals who own them confirm all that has ever been said for them.

You can do no better than to choose "the Master car of the Master builder."

If you don't know the dealer nearest you, write for his address. We will also tell you much more about the NEW Self-Starting HUDSON "33" that you will be interested in knowing.

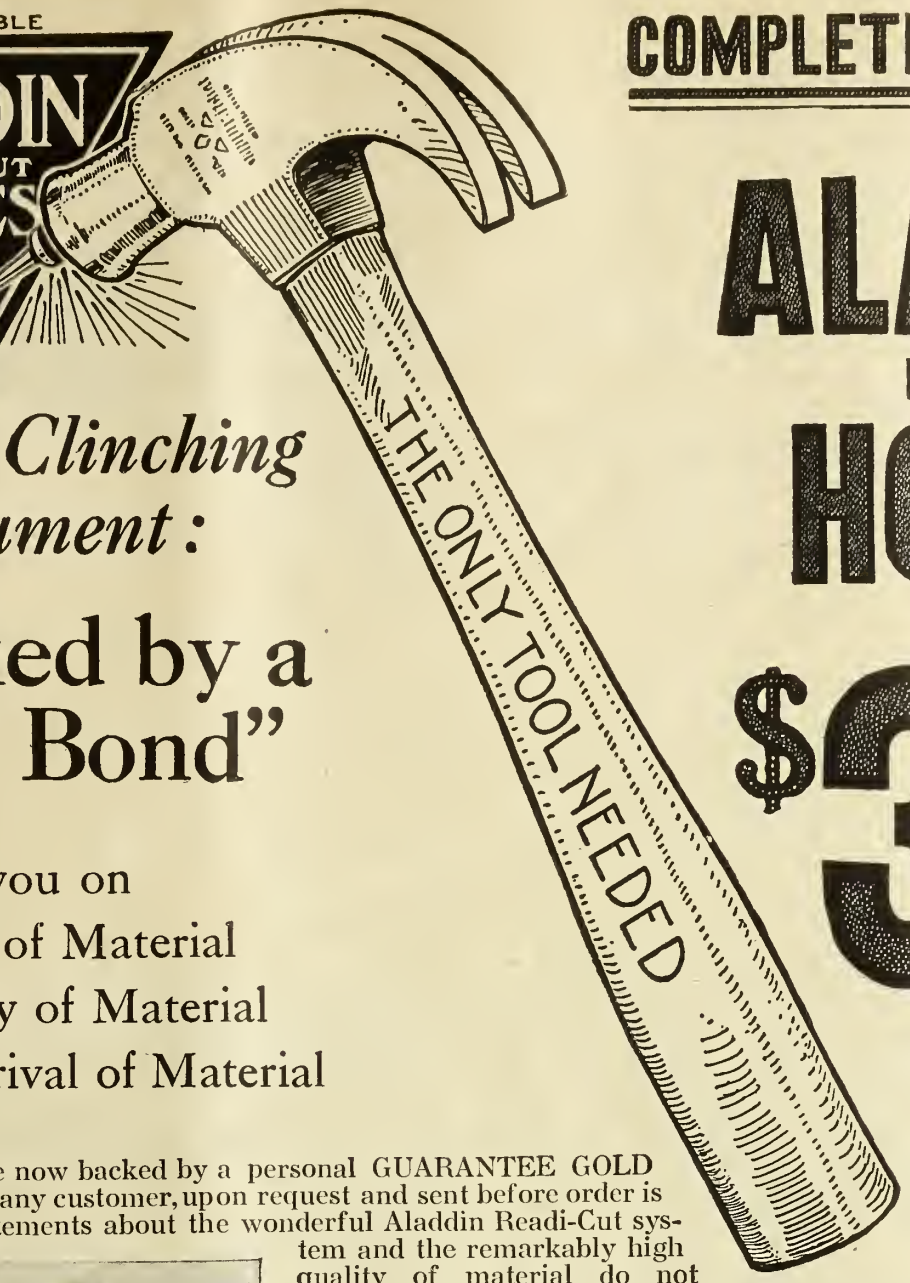
See the Triangle on the Radiator

HUDSON MOTOR CAR CO.

7299 Jefferson Avenue, Detroit, Mich.

NOT PORTABLE

ALADDIN READI-CUT HOUSES SAVE MONEY



COMPLETE 5-ROOM ALADDIN READI-CUT HOUSE

$388

Shipped Anywhere

The Clinching Argument:

"Backed by a Gold Bond"

Protecting you on
Quality of Material
Quantity of Material
Safe Arrival of Material

Aladdin Houses are now backed by a personal GUARANTEE GOLD BOND made out to any customer, upon request and sent before order is placed. If our statements about the wonderful Aladdin Readi-Cut system and the remarkably high quality of material do not square up with the facts, this bond absolutely covers and protects and may be realized upon. This selling policy has won for Aladdin houses the highest commendation and satisfaction from all customers.

Aladdin Houses can be built without skilled labor

Every single piece of lumber in an Aladdin Readi-Cut house is cut to fit in our mill by expert workmen and fitted. A saw is practically unnecessary in any part of the work of erecting and completing the house. Every piece of lumber, timber, etc., is numbered, lettered, and its size marked plainly. These marks correspond to the marks shown in the illustrations accompanying the instructions. You will not need to hire carpenters, or other skilled labor, but can do every bit of work easily, rapidly and in first class shape. Seven years' success of the Aladdin system have demonstrated the ease of erection, economy and money-saving value of Aladdin houses. There are 100 designs of houses, modern bungalows and barns to choose from.

Aladdin houses are not portable. They cannot be taken apart when once erected. They are exactly the same in every single detail as any well-built house when erected. Studding, rafters, and joists are 2x4, 2x6, 2x8 and 2x10 and placed on 16-inch centers exactly the same as in any well-built house. Sills vary from 4x6 to 6x8, depending of course on the size of house. Owners of Aladdin houses in such states as Minnesota, Montana, North Dakota and South Dakota write us that their houses are just as warm and comfortable all through the winters as any of their neighbors. Our Aladdin plaster board, taking the place of lath and plaster, is warmer than the best lath and plaster. It is composed of four layers of wool felt and three layers of gypsum plaster. You nail it directly to the studding and either paper on it or kalsomine over it.

A complete Aladdin house means all lumber cut to fit accurately for the foundation, timbers, the joists, studding and rafters, the siding, the flooring, the porch timbers, joists, flooring, columns, railing, steps, roof, sheathing, shingles, doors, windows with glass in place, window sash, window weights, pulleys, etc., inside and outside window trim and inside and outside door trim, moulded baseboard for all inside rooms, weather moulding, stairways, railing, newel posts, etc., all hardware, mortised locks for all inside doors; handsome burnished art brass locks and hinges for inside doors, nails for entire house, paint for two coats inside and outside, and plaster board for lining entire house inside.

Keep the middlemen's profits in your own pocket by saving 4 profits on the lumber, millwork, hardware, labor

Aladdin houses are sold under a positive and definite guarantee of satisfaction or your money back. We will give you the names of hundreds of satisfied customers in every state. The Aladdin guarantee also covers safe arrival of all material at your station in perfect condition. You take positively no risk. Send stamps for catalog "14" at once. If interested in farming buildings send for special pamphlet on this subject.

NORTH AMERICAN CONSTRUCTION CO., Bay City, Mich.

Shipments made direct from our mills in Michigan, Kansas, Texas, Florida, Oregon and Ontario.

TEAR OFF AND MAIL TODAY

NORTH AMERICAN CONSTRUCTION CO.
Bay City, Michigan

Please send me your Catalog 14 of ALADDIN HOUSES.

Name.....

Street.....

Town.....

State.....

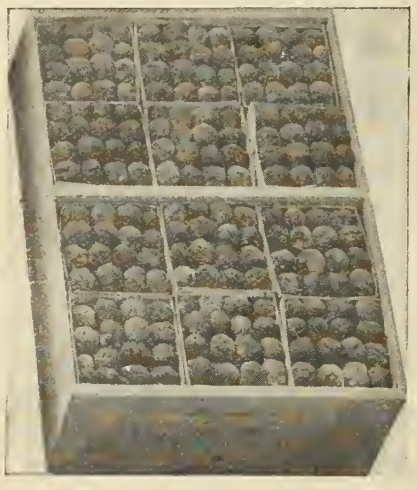
BERRIES IN NORTHWEST

Strawberries in Kennewick Valley, Wash., a Paying Crop When Properly Handled

In the Kennewick Valley, Wash., we begin a year ahead to prepare our strawberry beds. After the sage brush has been cleared and the land plowed and graded, a good cover crop of clover or alfalfa is grown and plowed under the following spring, as nothing builds up a berry patch like the turning under of a green crop. Barnyard manure is also used as a fertilizer, but a green manure is considered essential to secure best results.

In this valley, the best commercial berry is the Clark's Seedling. Many others have been tried but all have been found wanting in some particular. The Clark's Seedling is not a heavy bearer, but has excellent shipping qualities as it is firm and of good flavor and very attractive in appearance.

Our rows are usually about thirty inches apart, and the plants set from twelve to eighteen inches apart in the rows. The matted row system is the one generally used. For some reason the hill system does not give such



There is an appealing attractiveness about strawberries when they are packed in a manner like this.

good results in this particular locality.

Cultivation begins as soon as the plants are set and is usually done with a one-horse cultivator. Hand hoeing is done to cultivate the soil between and around the plants. A dust mulch from one-half to one inch in depth is necessary to keep the soil moist underneath. Cultivating is done just as often as necessary to keep the soil from baking—about every three weeks.

The profit made from a field of strawberries depends largely on the care given the young plants during the first season.

Opinions differ as to the best time to set a strawberry bed. Some set in the spring, and others in July and August, and even as late as September. If planted in the fall, they are not allowed to fruit in the spring but are kept pinched back to form sturdy plants. The best growers replant a part of their patch each season, as a bed three or four years old is often worn out. There are, however, some fields here seven and eight years old, where the fertility has been kept up and the weeds out, that are yielding just as heavy crops as the younger beds.

We use good, strong, clean plants and if possible from patches which have not been allowed to bear. We never use plants from a patch which has grown more than one crop.

We do not irrigate too much the first season, after the plants are set; just enough to keep them nice and moist, and each irrigation is followed by a thorough cultivation. The plants are not cultivated at all during the blooming and fruiting season, hence the necessity of the frequent cultivation beforehand. They are given continuous irrigation during the fruiting season because in this valley the soil is sandy, and the weather is generally quite hot at that time.

We turn the water on that part of the patch that has been picked just as soon as the pickers are done, so as to keep irrigated just one day ahead of the pickers.

The growers in the valley usually engage their berry pickers before the picking season commences, although it is not difficult to get pickers because many men and boys come here at that time. The field superintendent sees to it that the berries are picked clean and right. The berries should be picked with a stem one-fourth of an inch long. No berries should be pulled or snapped off the vines or mashed. All berries so picked must be discarded as culls as they will not stand shipping. A berry is ready to be picked when clear red on the upper side shading into pink on the under side.

The field superintendent sees that the pickers do not soil the small boxes or hallocks and that they do not carry the berries in their hands. Berries must be picked directly into the small boxes as too much handling injures them.

The berries are picked in six quart carriers. Each picker has a number, and when the carrier is filled, takes it to the packing shed where the packing superintendent credits him with the number of quarts picked.

The packing superintendent sees that the berries are handled as little and as carefully as possible. The berries are poured onto wire screens and all long-necked, over-ripe and small berries culled out—no berries should be packed unless perfect in shape and firm. Great care is taken to insure a solid pack. For the top tier berries of uniform size and color are selected, and packed four by four, four by five, and five by five. We never pack smaller than five by five. The crate should be a neat clean-looking package with every box uniform.

Our first berries are ripe about the last of April, and berry picking is in full swing in early May. Our first crate usually brings as much as $15, and $10 is not an uncommon price for our earlier berries. Our price during the entire season, averages net to the farmer better than $3.

The average yield per acre is about two hundred crates. Pickers are usually paid forty cents a crate, and packers get twenty cents. The crates cost about twenty cents each.

Getting a good crop of strawberries requires considerable forethought and much hard work, but there is a good demand for our berries and the results are very satisfactory in a pecuniary way.

MRS. E. M. SLY.

Washington.

Mulching the ground around trees with straw to hold the frost will not retard the blooming of the trees more than a day or so. The reason is that the leaves and blooms are forced, not by the roots, but by the temperature around them. To prove it, cut off a few twigs when the buds begin to swell, and see them open when put in a glass of water in a warm room.

The right location with reference to atmospheric drainage goes a long ways towards lessening the losses from late frosts in the spring.

SEEDS

The kind That Grow Successfully on Shorewood Farms. Every woman having a small piece of ground can profit by this offer. There is nothing more interesting than raising flowers and vegetables, and the woman who can point to her table and say: "This was grown in my own garden" is to be envied. Take advantage of our generous offer and also obtain a year's subscription to Park's Floral Magazine. It will tell you how to grow garden things successfully.

10 Pkts. Choice Flower Seeds, 10 cts.

Aster, Q. of Market, Mxd.; Pinks, New Japan, Mxd.; Larkspur, Stock-flowd., Mxd.; Poppy, New Shirley, Mxd.; Pansy, Giant Fragrant, Mxd.; Portulaca, Large-flwd., Mxd.; Petunia, New Bedding, Mxd.; Sweet Peas, Large-flwd., Mxd.; Phlox Drummondi, new, Mxd.; Mixed Seeds, 1000 kinds.

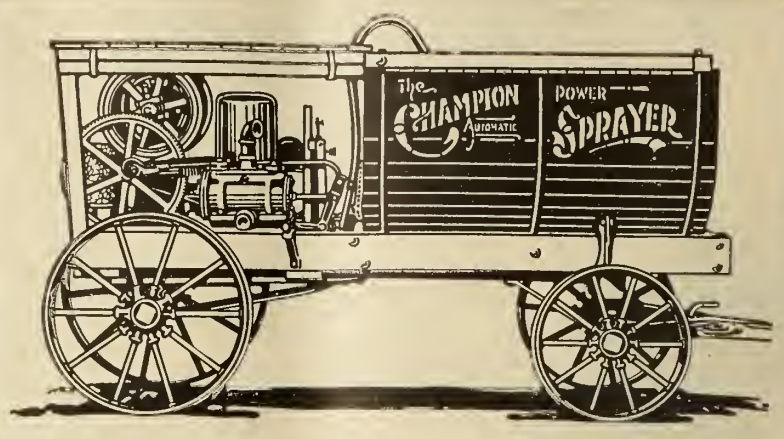
10 Pkts. Choice Vegetables, 10 cts.

Beet, Imp. Early Turnip; Cabbage, Early, Solid Cone; Cabbage, Late Flat Dutch; Cucumber, White Spine; Lettuce, Malta Drumhead; Onion, Danvers Yellow; Parsnip, Large Guernsey; Radish, Special Mixture; Tomato, New Matchless; Turnip, Purple-top Globe.

Magazine 1 year and 10 pkts. choice Flower Seed, 15c.
Magazine 1 yr. and 10 pkts. choice Vegetable Seed, 15c.
Magazine 1 yr. and 20 pkts. Flower and Vegetable, 25c.

In our selection of seeds, we have a variety of flowers that will make a most beautiful display and only such vegetables as are most in daily use reliabed by all. **Shorewood Farms Co., Saugatuck, Mich.**

Champion Sprayers



Special Offer to "Firsts"

WE HAVEN'T ADVERTISED much during the past few months because orders have been coming in as fast as we could take care of them.

CHAMPIONS SELL THEMSELVES. We have no traveling salesmen—don't need them to push Champions.

JUST PUT ONE in a section—let orchardists see how much better they spray than others—and the rest is easy. Orders come from neighbors without our solicitation.

THE CHAMPION IS CHAMPION, because it has the best motor, best pump and is simplest to operate. It gives plenty of force, and with our patented nozzle, sprays finer and more thoroughly than any other.

OUR SPECIAL OFFER—made to place **one** Champion, in sections where this sprayer has not previously been introduced—will interest you.

WE MAKE IT ONLY TO ONE—the first in each county. So write at once—else you may be second.

WE GUARANTEE Champion Sprayers—and stand back of our guarantee. Better write today—Now—for our special offer to "firsts."

Flanders Manufacturing Co.

PONTIAC, MICHIGAN

We Can Make Immediate Shipment

Telegraph, Telephone or Mail your order for a

Cushman "The World's Best" **Power Sprayer**

We have been running our factory night and day filling orders and putting a few extra machines away for late customers. **You don't have to buy an inferior machine—We can still supply you.**

ADDRESS THE NEAREST POINT

CUSHMAN MFG. CO., Factory, St. Joseph, Mo. BRANCHES: Spokane, Wash. Grand Junction, Colo.

COMPLETE SPRAYING GUIDE AND CATALOGUE FREE

FRESH WATER

WHEN YOU WANT IT— WHERE YOU WANT IT

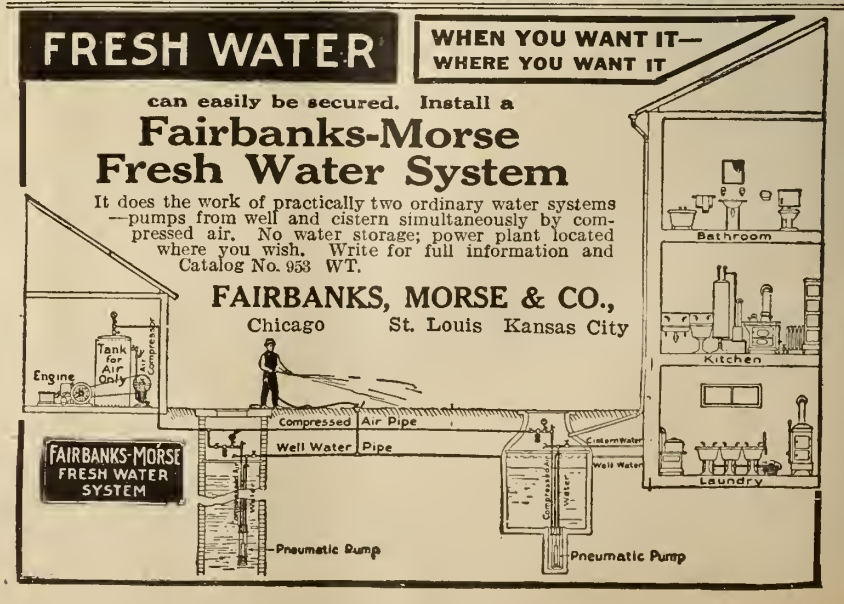
can easily be secured. Install a

Fairbanks-Morse Fresh Water System

It does the work of practically two ordinary water systems—pumps from well and cistern simultaneously by compressed air. No water storage; power plant located where you wish. Write for full information and Catalog No. 953 WT.

FAIRBANKS, MORSE & CO.,

Chicago St. Louis Kansas City



THE FRUIT-GROWER

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Volume 23 | ST. JOSEPH, MISSOURI, APRIL, 1912 | Number 4

LABOR-SAVING DEVICES

The Woman's Side of the Question of Labor-Saving Devices on the Farm

At the first Congress of Farm Women, held in conjunction with the International Dry Farming Congress, at Colorado Springs, the following paper was read by Mrs. John A. Widtsoe, Dean of Women, Utah Agricultural College:

It is with an unshaken belief in the great advantages of farm life and also with some little experience of it that this paper is written.

Farm labor, if performed rightly, gives health to the body, freedom and joy to the mind. Boys and girls raised on the farm, with proper home environment, are very apt to be strongest morally of any of our citizens. Farm life gives the greatest independence to the individual, for the farmer acknowledges no man master, but God and the elements. These are truisms that all accept, though they fail to convince many people of the superiority of farm life.

True, there are many disadvantages to farm life. The average farm is more or less isolated and humanity, being naturally gregarious, cannot endure isolation long, whether on or off the farm. The apparent loneliness of the farm, however, is partly due to a lack of training on the part of those who live there for the appreciation of the beauties of their surroundings and labors. They have not had their minds nor eyes opened to wonders of nature; to the beauties she has placed before their minds, nor to the mastery possessed by the farmer over the forces of nature.

Drudgery of a Woman's Life.

Man's work on the farm is intense while it lasts, and it may cover long hours, but when it is done, it is done, and the man rests while the earth rests. A woman works incessantly while the man does but she has no period of rest, for busy fingers must use even the evening hours in mending, darning or keeping the clothing in good condition. During the night, also, when the tired body should reinvigorate itself for the morning's toil by sound, unbroken slumber, the woman is more often than not disturbed by a restless, ill or nursing child. Her daily tasks include cooking, serving, scrubbing, cleaning, sewing, laundering, waiting on the sick; and many women add to this list the feeding of pigs and chickens and making the kitchen garden. The man usually has his Sunday free, when his mind rests as well as his body. He dons his Sunday best in the morning and has most of the day to visit friends, talk about the weather—to recuperate his strength. But he does not recuperate very much unless there is a fine hot Sunday dinner waiting for him after church. Meanwhile Sunday is often the hardest day for the woman, and most holidays add heavier burdens instead of lighter ones.

Besides the performance of her usual tasks, most women have the keen joy as well as the great strain of bearing and rearing a family of children. This alone could occupy most of a woman's energy if she did it well; but it must be done in addition to many pressing tasks and as a result many children "just grow." Most men would think it very bad policy to work their horses or use their cows to the last day before giving birth to young, but how many men ever think it necessary that a wife have a month's rest before that blessed period comes in her life?

Use the Brain to Save Labor.

It may be granted that women do not use in the best way all their advantages; that they lack special training for their labor, also that they fail to use the system and intelligence which makes joyous work. They may also lack that certain progressiveness which enables men constantly to use their brains in thinking out devices for saving energy. If men would do the housekeeping for a few years we would have as fine dishwashing machines and cookers as we have hay derricks and combined harvesters. It ought to be quite as easy to invent a dishwashing machine as one which cuts, threshes and sacks the grain with one turn of the wheel. Woman's very conservatism and content is often her worst enemy.

In one respect, that of money, woman cannot help herself; because in most cases the man holds the purse strings. Most farm women make their living out of their chickens and dairy; and ready cash is a thing they seldom see. Any help or labor saving device that costs money is, for that reason, forbidden. Now this is the case, not because men, as a class, are stingy, nor because they do not want to help their wives, but because they do not think about it and the women do not make them think.

Labor Saving Devices in the Home.

This is the day of labor saving devices in the home as well as on the farm. Scarcely any man would deny their place on the farm, because he sees in their use a saving to him in dollars and cents, and that always make a strong appeal. If a $60 mowing machine will enable him to cut as much grass in one hour as his father cut in one day with a scythe, the argument is complete. But if a $60 vacuum cleaner would enable his wife to do as much cleaning in one hour as her mother did in one day he would doubtless spend a few months thinking about the expenditure of the $60! Again, this is not necessarily because the man is hard-hearted, unfeeling, or stingy; but because if he thought of it at all he would feel that man is the bread winner, that through his labors the money and the wherewithal of life come into the home and any expenditure is therefore justified.

But is money the end of existence? What good is a large bank account to any man if he has the consciousness that a worn-out, ill-tempered wife and a cheerless home to greet him when his day's work is done? No woman whose energy is taxed to the breaking point by the ceaseless daily and often nightly grind of toil can be cheerful and companionable any length of time. Is there a money equivalent of the cheerful smile and life companionship of the woman that was once the best on earth? Can money pay for the lack of these things? Sometimes money does pay. It often pays coffin bills and undertaker's fees, and many a man has found that one hospital bill or doctor's fee would have bought many a vacuum cleaner. Is it not better to practice the ounce of prevention method.

Needs of the Farmer's Wife.

To determine the cost of labor saving devices on the farm and in the home, two Utah farms were examined for this purpose. Farm No. 1 is a fifty-acre hay and grain farm; No. 2 is an 1,800-acre hay and grain farm. Below is given the list of the labor saving machines found on each of these farms, with the cost of each machine specified:

COMPARISON OF COSTS OF LABOR-SAVING DEVICES ON A SMALL AND ON A LARGE FARM.

FARM NO. 1.

Implements used on 50-acre farm:

Self-binder	$175
Drill	100
Hay derrick	100
Mowing machine	60
Sulky plow	55
Disc harrow	50
Hay fork	40
Rake	30
Drag Harrow	20
Hand plow	18
Total	$648

Besides a possible $500 invested in some co-operative threshing machine.

FARM NO. 2.

Implements used on 1,800-acre farm:

Harvester	$2,500
Three drills	435
Gang plows	340
Four disc harrows	200
Two mowing machines	120
Two sulky plows	110
Hay derrick	100
Reaper	100
Two rakes	60
Three drag harrows	60
Hay fork	40
Hand plow	18
Total	$4,083

This machinery is seldom cared for in a thorough manner, and has to be replaced every five or ten years.

The labor-saving devices for the woman's work on these two farms, as ordinarily found, are tabulated below:

COST TO SAVE WOMAN'S LABOR.

HOME NO. 1.

Sewing machine	$50
Washing machine	10
Bread mixer	3
Total	$63

HOME NO. 2.

Bread and cake mixers	$65
Sewing Machine	50
Refrigerator	30
Washing machine	10
Oil stove	12
Total	$157

These machines, when once bought, are supposed to last a lifetime. The difference is evident. From about one-fourth to one-tenth as much money is invested in the woman's side of farm work, as in the man's side. The actual cost of helps for woman's work is low and considering the importance of the home in the welfare of the farm and the farmer, it is seriously to be questioned if justice has been done the woman in the few labor-saving devices provided for her.

Every farm home should be supplied with as many as possible of the following labor-saving devices:

Water system	$200
Heating system	200
Sewing machine	50
Refrigerator	50
Cement walks	30
Mangle	25
Vacuum cleaner	25
Dish washer	25
Fireless cooker	15
Coal oil stove	12
Washing machine	10
Dinner wagon	10

BEAUTIFUL AND PROFITABLE VINEYARDS NEAR HERMANN, MO.

The hills along the Missouri River are well adapted to growing grapes, and fruit of highest quality is produced. In the vicinity of Herman wine-making is an important industry and most of the fruit is disposed of in this way. Photo loaned by Missouri Pacific Railway.

Bread mixers	5
Alcohol iron	5
Total	$670

Any other device that comes on the market from time to time, the purpose of which is the saving of priceless life energy, should be added.

A Model Home in Utah.

It is possible to have any labor saving device in any farm home if the man of the house is sufficiently interested to go to the expense, for such houses are found occasionally. One such home is in Fielding, Utah. It belongs to Mr. W. S. Hansen, a type of the best farmer who boasts that all he has accumulated has come from the soil. The house contains all the labor-saving, comfort giving devices possible in any city home. It is a twelve-room, four-story, modern brick mansion, and the family is large; so that the equipment is larger and consequently more expensive than would be necessary for the average home.

The house contains these labor saving devices: A hot water heater system; hot and cold water for kitchen, laundry, two lavatories, and two bathrooms; an electric light system for the four stories; an acetylene gas lighting system for the entire house; a perfectly equipped laundry (including a large cylindrical washer, automatic wringer, two cold roll mangles, steam drying apparatus, automatic sprinkling nozzle and stationary tubs); a stationary vacuum cleaner in basement with pipe connections on each of the four floors; besides a dumb waiter, clothes chute to basement, ash tanks in basement for each grate; a complete cemented basement and cement walks around the entire house. The whole equipment is run by a three-horse-power gasoline engine, which cost $100. The engine also pumps water into a tank in the barn which is used for watering the animals. Before the engine was used, it cost $3 a day to water the animals; now it can be done for 10 cents a day. It costs 11 cents an hour to light the house with electricity; only 15 cents a day with acetylene gas.

The vacuum cleaner cost $150, and costs 3 cents an hour to run. One whole floor, consisting of five large rooms, can be cleaned in two hours, and cleaned as no human power could clean it. The cleaner has been used two years with perfect satisfaction. The laundry has been used six years and in all of that time the only repairs have been the tightening of one belt. It takes a woman four hours to wash for the entire family of twelve!

This home has two sources of water supply—the house and the yard tank; two heating systems—a stove and grates, or the hot water system; and two lighting systems—electricity or gas, the one to be used if the other is out of commission. The owner estimates that all of the machinery and appliances, including laundry fixtures, vacuum cleaner and plumbing fixtures (bath tubs, sinks, basins and piping) lighting systems and everything named above cost him in round numbers $2,000. This seems a vast sum of money to spend for home machinery; but when one considers that there is possibly $5,000 invested in farm machinery on this farm the proportion does not seem so large, especially when one considers that the latter must be replaced every ten years.

Necessary Equipment.

Every home should, if possible, be equipped with a water system. The practice of carrying all water into the house and then carrying it out again is the worst kind of extravagance.

Nothing need be said about the sewing and washing machines. It is to be wished only that electricity could be supplied in the majority of homes to run these machines without human power.

No really progressive woman will refrain from trying the bread and cake mixers, and if she persists in using them one month she would not want to keep house without them.

Much could well be said in favor of using the fireless cooker, particularly on a hot day when the farm hands must be provided with warm meals and when cooking over a hot stove is almost an unendurable process. Those who have used the cooker most declare that, after its use, food cooked on a stove is dry and tasteless. It is most highly recommended to housewives. There are many different kinds on the market, any one of which has advantages and disadvantages. The one in which the plates are made of iron, which may be placed inside the firebox to heat, will be found most useful. Success depends on getting the plates very hot. In the early morning when it is cool a fire could be made, the plates heated, and food for the hot meal at night put in the fireless cooker. The food will be found ready when wanted. The fireless is no longer an experiment; it is used in many homes with great success today. (See Bulletin No. 217, of the University of Wisconsin, "The Fireless Cooker," by Ellen A. Huntington.) Coal oil stoves are also used with success by many housewives in the heat of the summer. The steam cooker is very convenient in bottling fruit, steaming chickens and puddings and in countless ways familiar to every housewife. The alcohol iron can be used at a cost of a cent and a half an hour by using denatured alcohol at 60 cents a gallon. Care must be exercised in using this iron, but its use saves countless steps and is much preferable to the old journey between the table and stove. Of course, the electric iron is to be preferred if it can be used.

Every farm home should be supplied with some means of keeping the food cool, other than the one usually resorted to—the cellar, or the cool outhouse, many steps removed from the kitchen. A refrigerator or some kind of artificial cooler should be a part of every kitchen furniture, and should be as necessary as the stove. In places where ice is not to be procured it is possible to make a cupboard, in some instances where running water can be utilized; or where the cupboard has access to the outside air, the shelves being of wire netting, which permits the constant circulation of the air—this cupboard, of course, being on the north side of the house. The principle used in the African water bottle may be utilized—that of having a cupboard made of some absorbent material and allowing the cover to become saturated constantly. In our western climate evaporation of the water keeps the inside air as cool as could be desired.

The Dinner Wagon.

In homes where it is necessary to have a separate cooking and dining room it should be considered necessary to have a so-called "dinner wagon." This dinner wagon can be made by anyone who knows how to handle tools at all and is in reality a three-story table on wheels. This should stand near the kitchen stove and on it should be placed everything required for the meal. It can be wheeled into the dining room at the last moment, the things put on the table and the wagon then set aside again until required to move everything from the dining table back to the kitchen. Think of the countless steps saved by the use of such a simple little appliance as this! Cement walks are listed among the labor-saving devices. They should almost be listed among the necessities. House labor should not only include getting dirt out of the house but preventing it from getting in. A wise woman should stipulate that cement walks be built as soon as possible after the building of the house. This seems to be strange doctrine to preach to farmers' wives who live in isolated districts many miles from the railroads. But if possible get the cement walks and cellars. Half the cleaning of every home could be saved if cement walks were used. The cost is not prohibitive and, even in districts where railroads have not yet penetrated, cement could be hauled at an additional cost of a few cents per hundred pounds. As a matter of fact, when the cement walk is considered a necessity, the cement will be found as easily as are building materials.

Last Call *for* Planting Winfield Pedigreed Trees

PLANTING TIME is right at hand—the crucial moment that shall decide whether or not your planting shall be profitable—depends entirely on the trees you get. We have been trying continuously to impress upon you the absolutely undeniable truth or fact, that there is just as much difference in the breeding of trees as there is in the breeding of live stock, and as much difference in the crop as there is in results from planting selected grain and "run-out" seed. Shall our appeal fail to awake your investigation—to save you from a great chance of planting drone or unprofitable bearing trees?

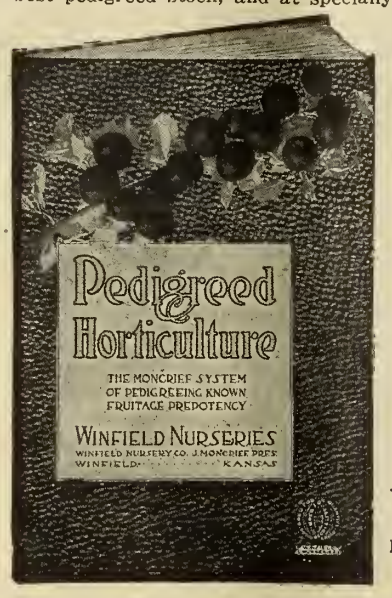
APPLE	2 Yr. Extra	2 Yr. 4-6 ft.	2 Yr. 4-5 ft.	2 Yr. 3-4 ft.
Gano	5420	5500	3920	3510
Jonathan	8520	12670	8230	5050
M. B. Twig	1640	1480	290	440
Newtown Pippin	130	60	180	180
Rome Beauty	2910	1380	1780	990
Spitzenberg	440	580	510	390
Stayman Winesap	1780	3030	780	620
Winesap	2620	2780	3930	2920
W. W. Pearmain	2810	1230	640	530
McIntosh Red	280	....	560	400
Ragan (Black Ben)	6340	3130	3270	1560

PEACHES	5-6 ft.	4-6 ft.	4-5 ft.	3-4 ft.	2-3 ft.
Japan Blood Dwarf	280	490	1330	930	840
Hottes Elberta	1260	1230	4750	5110	5280
Phillips Cling	...	....	200	260	410
Orange Cling	...	....	150	190	400
Mamie Ross	...	380	210	50	140

CHERRY	5-6 ft.	4-6 ft.	3-4 ft.	2-3 ft.
Early Richmond	100	1070	1200	200
Montmorency	370	760	2070	580
Royal Duke	1070	3080	310	550

QUALITY BEARING
QUANTITY BEARING
HABITUAL BEARING

trees are the only kinds that you can afford to plant—even if other qualities of trees were given you free of charge. You can still get strictly pedigreed-grown trees which have all the above requisites for successful fruit growing. We are still able to take care of orders, in limited quantities, in best pedigreed stock, and at specially low prices.



Last year we grew an unusually large amount of the best varieties by our exclusive pedigreed method—every one of the trees was grown from a very select scion off of a very select heavy bearing tree of very fine quality of fruit and a very regular bearer. There are no other trees on the market of this class. We want a sample order of these trees in your community and the offer that we will make you is one you can't afford to reject.

MAIL YOUR LIST TODAY

This will not put you under the least obligation to purchase a single tree, but if you expect to plant any trees, you can't afford to place your order until you get our big sample orchard offer. Get your pencil right now, make up your list and mail today.

BIG COMMERCIAL PLANTERS

Our method gives you in trees that which has been given the live stock growers and seed growers years ago. No drone trees—every one a quality-bearer, quantity-bearer, and regular-bearer. Any one of these trees will make you five times as much profit as an ordinary tree and doubles the selling value of your land.

Address all correspondence to

WINFIELD NURSERIES
WINFIELD NURSERY CO. J. MONCRIEF, Pres.
Box FG WINFIELD, KANSAS, U. S. A.
Originators and the Only Nursery in the world growing exclusively by pedigreed method.

You will notice that in the list given a mangle is mentioned. I suppose there is hardly one home in a thousand in this great country provided with a mangle; and yet, in the older countries of Europe, the poorest possible house-worker would feel she was imposed upon if she had to iron by hand her so-called "flat work." Three-fourths of the ordinary washing can be passed through a mangle and can be done in one-tenth of the time. Considering the cost of the mangle, from $6 to $25, no home in which weekly ironing is done should be considered equipped without one.

The Vacuum Cleaner.

Many different kinds of vacuum cleaners are on the market; the hand cleaners cost from $8 to $25, the electric from $25 to $125. Too much cannot be said in favor of the use of the vacuum cleaner, even where the hand machine is used, as a great deal of time and energy is saved by its use. Aside from the saving of energy is the saving of the furniture and utensils. While you are wearing out your brooms you may be sure the carpets and furniture are being worn to the same extent. Besides, no room is cleaned unless the dirt is gathered and burned. The ordinary process of sweeping and dusting does not destroy much dirt, it merely changes its place.

The successful dish-washer is possibly a machine for the future. A few different kinds are on the market, but, for the small family, they seem not yet successful. Some people contend that we should use paper dishes and burn them.

Few farm homes, of more than four rooms, know the luxury of being warm in winter. It is much cheaper to heat an eight-room house with a furnace than with stoves, to say nothing of the saving in labor and dirt. This is known by actual experience. If one cannot afford to keep a large house warm during the long winter months one ought not to afford to build it. It is not healthful to have one or two rooms warm and all the others icy cold. A furnace to heat a six- or ten-room house can be installed for $150 to $600, and the actual running expense is less than heating with a stove.

TEST YOUR VINEGAR with the Kirk Vinegar Test in 20 seconds, and know you can sell your vinegar guaranteed to meet State Food Laws. No complications. 24 tests, $1.00; postage 12c. **KIRK VINEGAR TEST COMPANY**, 62 East Logan Street, Germantown, Penn.

In order to have any and all of these appliances in the home it is not necessary to be extravagant. If, as some political economists tell us, a woman is entitled to spend one-third of the yearly income, she can plan to get first those things which mean most to her. Cement walks should be more important than the showy, costly front porch, which is seldom used except on a warm Sunday afternoon. A vacuum cleaner is much more necessary than the velvet "parlor set" or a showy mahogony mantel. A well equipped handy kitchen ought to be much more desirable to every housewife than a well furnished, showy parlor. Both are desirable, but if something must be sacrificed, let it be the things for show.

Advice to Farmers' Wives.

A word ought to be said to farmers' wives, particularly those who live in villages, about the advisability of co-operative ownership of expensive labor-saving devices. If each man who could not afford to own a threshing machine raised only as much grain as he could thresh by hand, how fast could he get ahead? It is just as feasible for half a dozen women to own a large vacuum cleaner and take turns in the use of it. In the same way a laundry could be equipped and used by different families on different days. Also a brick oven could be built and some one employed to bake bread for all the families interested. It could be done much cheaper and with what a saving of labor! If women could only be permitted to handle a little of the income of the farm and wake up to their opportunities they could make life much happier for themselves and their loved ones.—Dry Farming.

ROGUE RIVER VALLEY

A Section of Oregon Noted For Its Fine Fruit, Especially Pears—The Climate Ideal

Entirely surrounded by mountain ranges in Southwestern Oregon, the Rogue River Valley enjoys the distinction of possessing a climate which renders possible the production of more different deciduous fruits in perfection than perhaps any other portion of the American continent. Before the advent of the railroads, while there were no commercial orchards, the local growers fancied themselves immune from all fruit pests. Visitors from the Eastern states to the local county fairs saw displayed a general exhibit of fruit which the world today would find it hard to duplicate. The coming of the San Jose scale and the codling moth resulted in the old family orchards going into decay. About 1887 the first commercial apple and pear orchards were set in the valley by practical orchardists from the Middle West, and the succeeding ten years may be called the "experimental stage" through which all leading fruit districts must necessarily pass.

It so happened that the principal orchards passed into the hands of men of sufficient capital to live through this experimental stage and determine beyond further doubt the varieties adapted to the valley conditions and sure to result in the most profitable returns. The apple proposition soon settled down to the Spitzenberg and the Newtown Pippin, and even at this time those two varieties comprise more than ninety per cent of the apple acreage in the valley and adjacent foothills. Within the last two years there has been more of a tendency to set Jonathan, Ortley, Rome Beauty and Delicious, but the valley will undoubtedly continue to be distinguished as one of the main sources of supply for Spitz and Newtown.

The Pear Situation.

In pears it was demonstrated beyond question that the fire blight could easily be controlled and as conditions are well-nigh perfect for success in pear culture, and it so frequently happens that a bumper crop here obtains the high prices incident to a short crop east of the Rockies, that a very large proportion of the orchards set during the last ten years have been composed of staple Bartletts, Howell, winter Nelis and the fancy French pears, Doyenne du Comice, Buerre d'Anjou and Buerre Bosc. Assisted by government pathologists and experiment station bulletins, for the past six years exceedingly good judgment has been displayed in the matter of associating varieties, with reference to best pollenation, etc., and today the Rogue River Valley is the principal pear district on the continent, with a very large acreage of fine young orchards just approaching the bearing age, and a "tonnage in sight" proposition which is very attractive to railroad men, as most of the output of the valley takes the transcontinental haul. At present the Southern Pacific system affords the only outlet, but within another year connection will be made at Medford with the Hill system, through Central Oregon.

There is a wonderful crop set on the apple and pear trees in the valley for the year 1912. The regularity of crop production in this valley accounts for the fabulous returns each year reported from our best orchards. The record Anjou pear tree of the world stands in a neglected old family orchard four miles from Medford, the output one season from this tree having sold in New York City for $226; and yet this is not the most remarkable thing about this tree, for during a succession of thirty-six years since it began to bear fruit, it has never missed a single crop. This condition of bumper crops when high prices prevail assures the annual breaking of records in this valley for years to come, for the best orchards in the valley are not yet in full bearing. There is something in it for the practical orchardman in this valley, for the man who realizes the value of the choice developed young stuff now approaching maturity, as the "get-rich-quick" lure has induced many to go beyond their means in setting large orchards, which the practical man knows to be a very expensive thing to bring to full maturity.

A Perfect Fruit Belt.

Good business sense has been displayed in the orchard operations of the valley, the county authorities of Jackson county, comprising within its boundaries the major portion of the valley, having for a number of years past employed Prof. P. J. O'Gara, the government pathologist, to assist and supervise the work of the county fruit inspectors and to advise with and assist in field work the orchard men of the valley, the horticultural and fruit associations, etc., and the professor has proven one of the best investments the county has ever made. He was recently offered double his present salary of five thousand dollars to promote a syndicate orchard land deal and development to the north, but his loyalty to the home of his adoption induced him to turn down the offer without further consideration. The professor makes the following unqualified statement about the Rogue River Valley as a fruit section: "I have examined and studied all the fruit regions of the United States, Southern Canada and Northern Mexico, as well as all the principal fruit regions of Europe, and I can truthfully say that nowhere in the world are conditions for fruit so favorable as in the Rogue

One and one-half acres of these Newtowns averaged the owner an income of $1,250 per year for a period of ten years, and one year netted him a return of $2,100.

A TYPICAL COMICE PEAR ORCHARD.
The owner bought eleven acres of Bosc and Comice trees in bearing seven years ago; paid for the tract in two crops, and each year obtains increased returns from the trees.

NO WORDS WASTED
A Swift Transformation Briefly Described.

About food, the following brief but emphatic letter from a Georgia woman goes straight to the point and is convincing.

"My frequent attacks of indigestion and palpitation of the heart culminated in a sudden and desperate illness, from which I arose enfeebled in mind and body. The doctor advised me to live on cereals, but none of them agreed with me until I tried Grape-Nuts food and Postum.

"The more I used of them the more I felt convinced that they were just what I needed, and in a short time they made a different woman of me. My stomach and heart troubles disappeared as if by magic, and my mind was restored and is as clear as it ever was.

"I gained flesh and strength so rapidly that my friends were astonished. Postum and Grape-Nuts have benefited me so greatly that I am glad to bear this testimony." Name given by Postum Co., Battle Creek, Mich.

"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

Ever read the above letter? A new one appears from time to time. They are genuine, true and full of human interest.

One Year's Growth of a Pear Tree in Joseph Renot's Orchard at Wiggins, Mississippi

The Fruit Grower's Paradise—
You Can Raise More Fruit and Make More Money if You'll Come to
MISSISSIPPI

Do you realize that there's a wonderful new fruit country now being settled where your knowledge and ability will grow more fruit and finer fruit, and give you and your family a better living than ever before?

In Mississippi they're raising grapes, pears, strawberries, blackberries, Japanese plums, figs, apricots, Satsuma oranges, French prunes—land at present selling at extremely low prices—rich soil—high, well-drained, healthful locality. Abundant rainfall. No irrigation or drainage necessary. The water is pure and plentiful. Hundreds of Northern settlers are in this region near Wiggins and Powers, Mississippi, 35 miles from Gulfport, a deep water harbor. They're enjoying the delightful climate—warm and pleasant the year 'round—and they're making big money from small investments.

Rapid and dependable shipping facilities to Chicago and the East. An active cash market fostered by a Growers Association of over 300 farmers and fruit growers. This with the local canning factory guarantees quick purchase and good prices for everything you grow. A $50,000 Demonstration Farm and Nurseries right on the tract insures your success. Experts in charge—advice free.

Come to Mississippi—you can make a good living right from the first. A truck garden will keep you and yours comfortable while your fruit is coming into bearing. Then you'll make money on a scale impossible in the older, less favored regions.

Mail This Coupon for the Proved Facts

We are doing more to make our farmers and fruit growers successful than any other land company doing business in the South. Think of this and the fact that you can buy land in this fertile district at only $2 per acre down and 50 cents a month per acre thereafter. No interest. No taxes. Guaranteed title.

Mail the coupon or send a postal or letter for all the proved facts illustrated from photographs; bank references, letters from settlers now here, etc. Write today. Address

MISSISSIPPI FARMS COMPANY,
1120 Commercial Nat'l Bank Bldg., Chicago.
Fleming Building, Des Moines, Iowa.
Wiggins, Mississippi

Mississippi Farms Co.
1120 Commercial Nat'l Bank Bldg., CHICAGO
Please give me the facts about your Mississippi fruit lands.
Name .....
Address .....
City .....
State .....

Gasoline Engines are Dependable They always finish the job. Don't break down or act balky when you can least afford a delay. Loss of time to yourself and men makes the so-called cheap engines the most expensive. You are assured the best of material and workmanship in an Otto. They have been the standard everywhere for 36 years. Own the best, it is the cheapest, the most satisfactory. Descriptive bulletin mailed upon request if you state size that interests you.

The Otto Gas Engine Works 1205 Union Ave., Kansas City, Mo. 3314 Walnut St., Philadelphia, Pa.

River Valley. It is the most perfect fruit belt in the world."

It is not alone the practical orchardman to whom this valley appeals as an orchard section. Men of wealth in larger numbers each year are seeking homesites and orchard lands, for themselves and especially for their grown sons, the pick of America's population, men carefully schooled in our universities and agricultural colleges, to wrest from nature under modern conditions the toll which will one day make of Southern Oregon the richest agricultural section of the continent. Nowhere on earth is there a more beautiful valley, and certainly nowhere can there be found the equal of the Rogue River Valley climate. Not only is this valley the beneficiary of the Japan current, but it is sheltered by the mountains which begirt it on every side to such an extent that a ten-mile-an-hour breeze is about the limit in wind, and less than ten windy days in the year. Think of it, you dwellers in the blizzard belt! During January and February of 1912 at no time at Medford did the mercury get below 20 degrees above zero, and yet there has been sufficient frost at night to hold back the fruit buds and today, March 14, it is apparent that neither peaches, pears nor apples will be in full bloom before April 1, assuring a phenomenal crop. Orchard heating on low ground is the rule here now, and all are ready for emergencies, with oil pots in place and tanks filled with oil, but it is a question if any of it will be used this year, there being very little snow in the mountains and the vitality of the trees being so high.

Strawberries constitute an important crop in the Rogue River Valley, where water is available for irrigation.

Intercropping the Orchard.

During recent years more attention has been given to the matter of expense crops, during the growth of the young orchards, and as the conditions are equally good for peaches, apricots, table grapes and sweet cherries here, many orchard-men have pursued the course of planting peach tree "fillers" among both apple and pear trees, a large number of these fillers being now up to the producing age. This affords an inviting field for cannery-men in the valley, as it is a recognized fact that this is the best tomato section of the coast, no pests, more pulp, less seeds than elsewhere; and all pickling products, onions, peppers, cauliflower, cucumbers, and all kinds of melons, thrive to a degree unknown in most other sections. Berries thrive also, but only enough produced to supply local markets. Where water is available berries give as large an income here as any fruit.

This is not a semi-arid section, the precipitation being approximately 28 inches annually. Yet the more progressive orchard-men now realize the immense value of water in orchards after the trees are older than ten years, and a market is opening up for water which will enable the existing ditch company to extend their systems, and put in their high-line ditches, affording the opportunity to irrigate the younger foothill orchards. By government concessions the canal company has been enabled to hold water in reserve in two mountain lakes near Mt. McLaughlin sufficient to irrigate fully sixty thousand acres of orchard. This, with private water rights and private reservoir possibilities from lesser mountain streams will afford means to irrigate most of the orchards of the foothills and all the valley, in a few years. There is such a wealth of water available in the timber belt at the head of Rogue River that doubtless in time all the better improved tracts will have water under pressure from a pipe-line. All over the valley men are even now installing electric lights and the topic most discussed is that of good roads, to improve country life conditions. Precipitate action was taken last summer, when, at a special election called for that purpose, the people of Jackson county voted by a large majority to issue bonds to the extent of one and one-half million dollars to install a thoroughly modern road system in the valley. The supreme court decided that such action could only be taken under our initiative law at a general election, and action is deferred by a few months. With more than 90 per cent of the population of the valley American born, the citizenship of the valley appeals to the prospective settler almost as much as the fine climate and fruit productiveness.

A fair type of Anjou pear tree as grown in the Medford district. This variety usually nets the grower from $3 to $4.50 per bushel box at the orchard.

Produced Apples for a King.

While there has been a marvelous development of orchard lands in this valley during the last ten years, the Medford or Rogue River Valley fruit district has not been as much in the limelight as some of the other Northwestern districts. Local orchard-men have entered into competition in but three of the National Apple Shows, in the car lot classes. In 1909 at Spokane, a car of Spitzenbergs from this valley captured the sweepstakes prize as well as all box class specials on Spitz from the same orchard. Local growers contend that at any time for ten years past as good a car of Spitz could have been obtained from this orchard. In 1910, a car of Newtowns from this valley was entered at Vancouver, obtaining first in the Newtown class. In 1911 a car of Newtowns which had been sold for use of the court of the King of Denmark, was exhibited in class at Spokane, capturing first on the Pippins, and incidentally the ten-box display from same orchard scored higher than any exhibit ever passed upon at an apple show. It would be better for the valley if more interest was taken by local growers in these contests, but the growers are somewhat swelled up over the fact that there is no room for competition with this valley on pears, and are content to rest on their laurels and point to the wonderful diversity of deciduous fruit production here, and the attractiveness of the valley aside from its productiveness. The regularity of crop production, with its great winnings when other districts have lean years, have induced many to go beyond their means in handling too large orchards, and the present season will see many of these choicer orchards pass into the hands of practical men from the Middle West, who know that the bearing orchard, with its quick return, makes easier sled-

Hupmobile Long-Stroke "32" Touring Car, $900

F. O. B. Detroit, including equipment of windshield, gas lamps and generator, oil lamps, tools and horn. Three speeds forward and reverse; sliding gears. Four cylinder motor, 3¼-inch bore and 5½-inch stroke. Bosch magneto, 106-inch wheel base, 32x3½-inch tires. Color, Standard Hupmobile Blue. Roadster, $900.

Two cars whose name is your guarantee

We refer to the two leading Hupmobiles—the Long-Stroke "32" Touring Car, and the Standard 20 H. P. Runabout.

Both the product of the same engineering skill and the same shop organization that originated the Hupmobile.

Both incorporating elements of value not found elsewhere at the price or near it.

Each the sign and symbol of the highest and best construction of its particular type.

The Long-Stroke "32," with its cylinders cast in one piece, its three bearing crank shaft, its enclosed valves — a motor of extraordinary pulling power and sturdiness and absolute silence, perfectly dust- and oil-tight.

Multiple disc clutch, 13 in. in diameter.

Three-speed transmission, large enough for a 40 H. P. car.

Each a feature for the equal of which you must go beyond Hupmobile price.

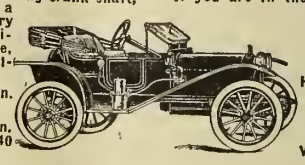
And a full floating rear axle of especially strong construction.

Fifteen thousand owners, the world over, testify to the worth and serviceability, the staunchness and durability, of the Runabout.

It, too, has a unit power plant; multiple disc clutch; and sliding gear transmission.

All the power you will ever need or want and to spare.

If you are in the market for a touring car around $900, or a two passenger car, around $750, get in touch with the Hupmobile dealer.



He will show you the actual value in these cars; the value that sets them above other cars of their prices.

Write for complete catalog.

Standard 20 H. P. Runabout, $750

F. O. B. Detroit, with same power plant that took the world touring car around the world—four cylinders, 20 H. P., sliding gears, Bosch magneto. Equipped with top, windshield, gas lamps and generator, oil lamps, tools and horn. Roadster with 110-inch wheel base and highly finished steel box mounted on rear deck, $850.

Hupp Motor Car Co., 1210 Jefferson Ave., Detroit, Mich.

HARD TO DROP
But Many Drop It.

A young California wife talks about coffee:

"It was hard to drop Mocha and Java and give Postum a trial, but my nerves were so shattered that I was a nervous wreck and of course that means all kinds of ills.

"At first I thought bicycle riding caused it and I gave it up, but my condition remained unchanged. I did not want to acknowledge coffee caused the trouble for I was very fond of it.

"About that time a friend came to live with us, and I noticed that after he had been with us a week he would not drink his coffee any more. I asked him the reason. He replied, 'I have not had a headache since I left off drinking coffee, some months ago, till last week, when I began again, here at your table. I don't see how anyone can like coffee, anyway, after drinking Postum!'

"I said nothing, but at once ordered a package of Postum. That was five months ago, and we have drank no coffee since, except on two occasions when we had company, and the result each time was that my husband could not sleep, but lay awake and tossed and talked half the night. We were convinced that coffee caused his suffering, so he returned to Postum, convinced that the coffee was an enemy, instead of a friend, and he is troubled no more by insomnia.

"I, myself, have gained 8 pounds in weight, and my nerves have ceased to quiver. It seems so easy now to quit the old coffee that caused our aches and ails and take up Postum." Name given by Postum Co., Battle Creek, Mich.

Read the little book, "The Road to Wellville," in pkgs. "There's a reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

ding than the development of a young orchard, profitable as that has proven.

The great advantage which results from the conditions prevailing in this valley can only be comprehended by even the practical fruit grower by a visit to the valley. The charm of a good climate is only appreciated by one who has passed a winter here. On the morning of January 1, when the mercury sank to 17 degrees above zero at Los Angeles, damaging the orange crop of Southern California not less than 40 per cent, a balmy spring morning opened at Medford, with the mercury at 28 degrees above. Such are the vagaries of the Pacific coast climate, of which the Medford district, with practically the same latitude as Milwaukee, possesses the best. You have only to live once; why not live in a good climate?

WM. M. HOLMES.

The Real Marketing Problem.

Mr. Karl J. Stackland, Cove, Ore., writes The Fruit-Grower to say that it is not strange that the consumption of apples does not increase, when one considers the cost to the consumer. He calls attention to the fact that with an apple crop estimated to amount to about 30,000,000 barrels last year, there was much uneasiness as to the outcome of the marketing problem. He says that some concerted action must be taken to get apples in hands of consumers.

"It is not strange that apples are consumed in such limited quantities," continues Mr. Stackland, "when it is known that the retailers, the country over, demand a profit of from 100 to 400 per cent on the money they put into this fruit. There may be many exceptions to such exorbitant charges, but the fact is, that in, by far the larger portion of the country, the above figures are correct. For instance, in most Dakota towns the merchants lay in a supply of the lower grades of box and barrel stock, such, that one year with another, cost them less than $1.50 per box or $2.50 per barrel, laid down in their stores, and I have yet to learn of a place there where they sell such apples for less than $3.00 to $4.00 per box or bushel, and in smaller quantities at the rate of $5.00 to $8.00 per box.

"Our 4½ tier Spitzenbergs, with 165 to 200 apples to the box, retail for 5 cents each or 50 cents per dozen, nearly anywhere, making about $8.00 per box, when these apples are purchased for something like $2.00 per box. Other varieties and other markets will show up on a par with the instances cited. Is it, then, any wonder that the consumption is radically reduced?

"Whatever fruit may be in competition with the apples gets the preference. We have seen first-class Bing cherries bought on an eastern auction for $1.50 per ten pound box, and have seen them sell to the retailer for $1.75 to $2.00, who put them up in two ounce packages and asked 10 cents each, or 80 cents per pound for same, when peaches were flooding the same market and being retailed and peddled for about 2½ cents per pound. The purchaser then had the choice between four pounds of peaches and two ounces of cherries for his 10 cents. Therefore, could many cherries be sold, under such circumstances?

"The whole future of the fruit business demands immediate and general control of the selling price to the consumer, so the market may not be destroyed at his hands. It is up to all jobbers, wholesalers and producers to devise means for and secure a remedy for this condition."

The points made by Mr. Stackland are all well taken. Apples undoubtedly cost too much when they reach the consumer. We may again refer to an experience which was related to The Fruit-Grower several years ago by Mr. W. H. Garvin, Delta, Colorado, selling agent of a number of shipping associations.

Mr. Garvin was in an Ohio city and called on a large fruit dealer and found him putting a dozen apples in a Climax basket, and after putting a few sprays of greenery over the fruit the package was ready to sell for $1.00—and it contained only a dozen medium-sized apples.

Knowing that the apples had cost the dealer not to exceed $2 a box, delivered at his store, Mr. Garvin suggested that a selling price of about $8 a box yielded a big profit, and likewise reduced the quantity of the fruit sold.

The dealer admitted that this high price cut down sales, but justified his course by saying that he would rather sell one box and make $5 profit than to sell ten boxes and make the same profit. He preferred to sell a limited quantity of fruit at very high prices, rather than to do a larger volume of business.

From his standpoint he may have been right, but from the standpoint of apple-growers, who are interested in increasing the consumption of this fruit this policy is all wrong. Something must be done to correct this condition. It may result in shipping associations maintaining warehouses in all important cities and distributing fruit direct to retailers, as long as the latter will be content with a reasonable profit, and when they charge too high a price, thus shutting off consumption, to go direct to the consumers. Certainly something must be done, and that quickly, or apple-eating will be entirely out of fashion.

New Organization in North Carolina.

A fruit and truck growers' association called the United Fruit Growers' of Western North Carolina, has just been formed at North Wilkesboro, with an authorized capital stock of $100,000, modeled very closely after the famous Grand Junction Fruit Growers' Association, and for the same purposes. This association intends to cover the Brushy Mountain and Blue Ridge fruit sections for fruit, and the fertile, protected valleys for truck and produce; including Wilkes, Watauga, Ashe, Alleghany and Alexander counties which have for their outlet the Southern Railway into North Wilkesboro, N. C.

This association will handle all the products, both fresh and manufactured, of the members of this section, and also carry in stock and distribute to its members all supplies they may need besides doing what every such association should do—co-operate in education and educate in co-operation.

With such an association ably managed in a section so peculiarly adapted to horticulture, there is no question of doubt but that Western North Carolina will soon become one of the most famous fruit centers in the whole country.

Something
Extra Good
For
Breakfast,
Lunch or
Supper—

Post
Toasties

Served direct from package with cream.

Surprises
Pleases
Satisfies

"The Memory Lingers"

Sold by Grocers.

Postum Cereal Company, Limited
Battle Creek, Michigan

THE farmer who knows the plain truth about paint is not at the mercy of either paint fakirs nor fake painters. He knows what to ask for in his specifications and how to get what he specifies.

The "Handy Book on Painting" gives in concise and practical form the plain facts about the most durable of all paint, made from

Dutch Boy Painter
Pure White Lead

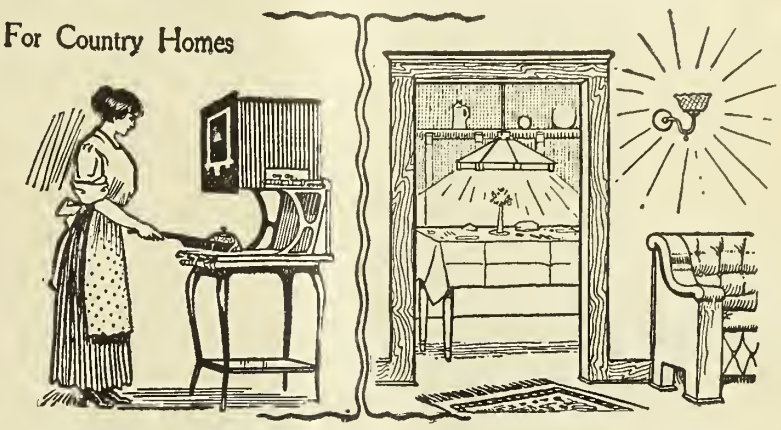
When competent help isn't handy, the farmer who understands paint can do a pretty good job himself, especially on the small painting, such as fences, sheds and tools.

Ask for Farm Helps No. 272 and if there are children in your family or your neighbor's family, ask for the Dutch Boy Painter's Book for the Children.

NATIONAL LEAD COMPANY

New York Boston Buffalo
Chicago Cincinnati Cleveland
St. Louis San Francisco
(Philadelphia, John T. Lewis & Bros. Co.)
(Pittsburgh, National Lead & Oil Co.)

For Country Homes

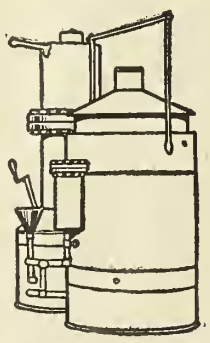


Cooking Fuel and Illuminating Gas
Made at Home with a
Little Machine
Like This

ABOUT once a month this machine must be refilled with gas-producing stone and wound up like a clock.

When obediently it stands idle until you start to cook or turn on the lights.

Then, with no attention whatever, it gets busy and makes gas automatically—just enough to keep your stove and your lights going.



The stone, known commercially as "UNION CARBIDE," gives up its gas when the machine drops a few lumps into plain water—a little at a time as the gas is wanted.

The gas is genuine Acetylene. Burned in handsome chandeliers it gives a flood of brilliant pure white light.

Burned in the kitchen range, it makes a hot blue fire that can be instantly turned up or down, on or off.

For both cooking and lighting it is used exactly as city gas is used by over twenty million city people.

As a fuel, it flows right into your stove without handling and burns without soot or ashes.

As a light, its white, sunlike beauty is unrivaled. Reflected from handsome globes suspended from brass or bronze chandeliers, it supplies the up-to-date city-like appearance of refinement and elegance which the average country home lacks.

Moreover, it is not poisonous to breathe, and the flame is so stiff the wind can't blow it out.

* * *

The UNION CARBIDE you dump in the machine once a month won't burn and can't explode.

In a nutshell, one of these gas machines installed in the cellar or an outbuilding of a country home solves the *lighting* and *cooking* problems for all time.

And they are so easy to install in any home without injuring walls or carpets that there are now over 180,000 Acetylene Gas Machines in actual use.

We manufacture and our agents arrange for installing thousands of them every month in all parts of the world.

There are, of course, many crude imitations of our machine on the market, but the genuine is easily distinguished by its name and our trade-mark

"Pilot" Acetylene Generators

On the first return mail we will send you free literature telling how Cornell University has been growing plants by our light — why oculists recommend it for eye-strain — why the Insurance Engineers pronounced it much safer than kerosene — how the lights can be placed in barns and outbuildings — how they can be equipped to light up without matches — and how the gas range shortens kitchen hours and makes cooking a pleasure.

With these booklets telling all this wonder story, we will send figures showing how little a "PILOT" lighting and cooking equipment will cost in your case.

Just write us how many rooms and buildings you have to light and where you are located. Address your letter to the ACETYLENE APPARATUS MFG. CO.— 123 South Michigan Blvd., Chicago, Ill.

Ask your neighbors to subscribe to The Fruit-Grower.

PRUNING THE ORCHARD

How to Prune a Commercial Orchard—The First Two Years' Work the Most Important

In pruning our commercial orchards of thirty-six thousand trees, located near Nampa, Idaho, we endeavor to develop some fruit the fourth year and increase the amount the fifth season. Trees should yield from two to six boxes to the tree the sixth season. We find our cultivation of sixteen times each season sufficiently effective to grow the trees with such vigor and rapidity as to be strong enough the sixth year to yield a profitable crop.

In pruning the orchard the first two years are the most important. The major portion of our Western commercial apple orchards are planted with strong one-year-old trees instead

No. 1. A two-year-old King David apple tree, pruned to fruit at the age of four years.

of using two, three, four or even five-year-old trees, as was our habit in Nebraska.

Why does the Western planter select the yearling tree?

Under irrigation and with the longer season of the intermountain basin and on the Pacific coast a well grown one-year-old apple tree may have nearly as much vigor as a medium two-year-old in the Central and Eastern states. To select a yearling tree for planting enables the orchardists to prune in a uniform manner and have practically all of the trees headed at the same height. The nurseryman favors the sale of trees at the age of one year because he gets a speedy return for labor and for capital invested. The one-year-old trees can be afforded at a lower price than the older trees.

How to Prune One-Year-Olds.

In pruning the one-year-old tree at time of planting it is well to leave the top bud on the windward side, here the north or northwest side of the tree, to cut the tree at perhaps the height of twenty-four to thirty inches, being governed somewhat by the position of the stronger buds on the trunk. The aim is to grow three to six shoots the first season to form the branches of the future tree. At the end of the first season it is not well to cut back too close to the trunk. Aim to prune in such form as will develop four, five or six main branches, and these so distributed that each branch will have plenty of room to develop. Avoid two branches coming out nearly together, since these forking at one point are liable to cause one branch, which, when heavily laden with fruit, to split down. Some scientific pruners aim to start the head of the future tree with three main branches. It will be evident, however, that the greatest number of boxes of apples can not be borne on a three-branch tree.

In the orchard of Manville and Hurst, near Boise, on sixteen-year-old trees, each of which produced sixty-two and sixty-three boxes of apples last fall, we noticed that the most productive trees were trained with five or six main branches, and that the after pruning has been such as to give very large and well branched heads, capable of supporting two thousand five hundred pounds of apples.

At this age of the tree in pruning it is well to bear in mind the direction from which the stronger winds blow. Near Nampa they come from the northwest. Aim to save strong buds pushing to the north and northwest; encourage the tree to grow strongly to the north and west and lessen the weight of the growth on the south side.

What to Do Second Year.

In December of the second year's growth of the tree we again prune, leaving from twelve to twenty inches of new wood. Profs. Paddock and Whipple, with long experience in Colorado advise allowing each shoot to make two more the succeeding season, and let the tree gain annually about fourteen inches in length of branch. The Grand Junction, Colorado, orchardists advise to allow, on thrifty vigorous trees, twenty inches gain in length of branch. The question of how many branches to leave is a matter of good judgment and experience. Aim continually to keep the trees strongly to the north.

If early fruit is desired, at the end of the season's growth we prune to throw the trees into bearing the fourth summer. We should remember the lateral branches are more likely to set fruit buds than upright branches. The tendency of the most vigorous growth is to the terminal shoots of the upright branches. Vigorous growth of upright shoots means wood, not fruit. We therefore leave the lateral branches nearly untouched, oft times full length, because under this method of pruning the lateral branches are very likely to set fruit buds the third summer and to fruit with more or less freedom, according to the condition of the tree, the fourth season.

Treatment the Third Year.

At the end of the third year's growth we prune in similar method, leaving yet more lateral wood to set fruit buds the fourth season, and come into bearing the fifth year. In pruning our trees we are careful to leave all short twigs and many of the minor branches within the head, since the stronger branches now dominate the

No. 2. Jonathan apple tree grown three seasons and pruned to fruit freely at the age of five years.

growth, take more of the sap and dwarf the inferior shoots. This oftimes causes these to develop fruit buds and later to develop fruit close to the principal branches of the tree, where the fruit can be safely supported, properly nourished and developed.

The Fourth Season.

Under the system of cultivation we give, the tree has made a sufficiently strong growth with an ample root system and trunk, to prune the four-year-old tree in such form that it should set a considerable number of fruit buds the fifth year and be ready to bear from two to six boxes of fruit the sixth year. Remembering the

Stop the Waste
Can Them at Home

Get our Steam Pressure Boilers and can your fruit and vegetables. Supply your own table the year around, sell the rest at three to five times what they bring in the raw state and make a snug little sum every season. Sell as long as the markets are good. Can the balance and get big profits.

Canning at home, as an industry, is now recommended by the United States Department of Agriculture, and by every Experiment Station and State University in the Union. It is only a matter of a few years when home canning outfits will become as popular in the farming and fruit raising districts as the cream separator now is in the dairy districts.

Millions of Dollars' Worth of Fruits and Vegetables Annually Wasted

caused by poor markets and insufficient shipping facilities. Fruits of all kinds—corn, peas, string beans, pumpkins, tomatoes, fish, pork and beans, etc., can be canned as easily as cooking eggs or boiling potatoes, if you have the right apparatus, in either glass jars or tin cans.

HOME CANNING OUTFIT $15.00 Complete

These Home Canning Outfits are the regulation Steam Pressure Boilers with safety valve, steam gauge, etc., same as are used in every modern canning factory in the world, only made in smaller sizes to be used on the kitchen range or in any convenient shed or building. Nothing complicated, intricate or at all difficult. Hotel and Factory sizes are of same principle, only larger in size and capacity.

"Secrets of the Canning Business"

This book lays bare the inside secrets of the canning industry. It exposes the simplicity of the art of canning and shows how every grower or farmer can accomplish the identical results in the same way. It explains fully the methods of canning—how to do it; and tells how you can greatly raise the value of your products.

Start in the Canning Business

No special training or skill required. The Home Outfit enables you to can enough for your own table and sell to your relatives, friends or groceryman. Going into it on a larger scale with Factory Outfit, pays big. Fruit growers add $500 to $1,000 to their yearly incomes with very little work. Investigate the big possibilities.

Agents Wanted We are constantly on the lookout for active agents to sell our Canning Outfits in every locality. This is a great proposition for fruit tree agents. We offer special inducements and make a very liberal proposition. If interested, write for our Agents Offer. Write now.

Northwestern Steel & Iron Works

640 Spring St. Eau Clare, Wis.

strongest sap pressure is upward and the buds on the upright growing branches are best supported and will develop the longest and most vigorous shoots, to make sure of a formation of a considerable number of fruit buds during July, August and September of the fifth season, we leave a considerable number of lateral branches. If the wood is well ripened we may perhaps leave these branches their entire length. If not well ripened shorten them. Because the heaviest growth is thrown into the upright shoots the lateral branches will force a less vigorous growth and usually develop fruit buds ready to bear a considerable crop the sixth season.

It is more difficult to describe on paper than to show in actual work in the orchard, how pruning should be performed upon the older and bearing trees.

East of the Rocky Mountains the character of the months of April and May may be such that only a moderate percentage of the bloom sets fruit. The amount of fruit set may be lessened by unfavorable weather, rainfall, fungus diseases or freezing weather.

The orchardists of the central portion of the United States have not yet, only in comparatively few instances, felt compelled to thin fruit. West of the mountains, however, with the greater probability of favorable weather during the blooming period there is a strong probability that more fruit will be set than can be safely carried by the tree. This compels us to thin the fruit in June and July and sometimes in August. Since the number of apples must be lessened something can be done in pruning to lessen the amount of fruit bearing wood and lessen the amount of fruit that must be carefully removed in thinning. The intermountain and Pacific coast orchardists therefore would leave a smaller amount of bearing wood, fruit spurs, and fruit buds than would be left by the orchardists of the central portion of the United States or the far East states. These considerations have weight and are taken into account in deciding on methods of pruning.

The pruning during the life of the tree should be such as not to leave

No. 3. Jonathan apple tree of four seasons' growth. Height, ten feet; spread of branches, eight feet.

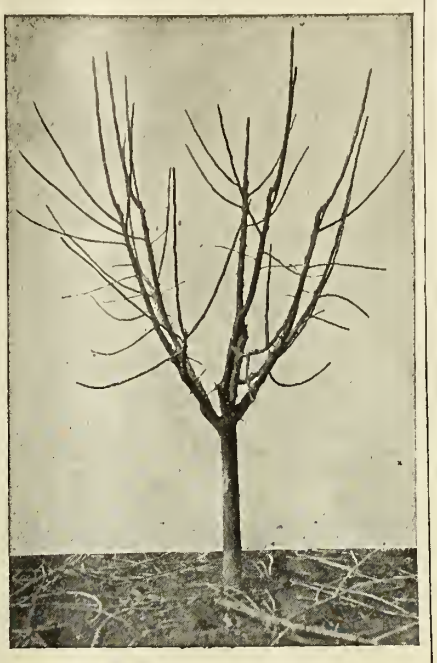
long naked branches. Guard against this by pruning annually. Endeavor to have bearing twigs and branches distributed well over the tree in such manner that the tree is well able to support the load of fruit without the necessity of props or the danger of breaking down.

In the Manville and Hurst orchards near Boise, we notice they have been particularly successful in distribution of the fruit well over the tree and have developed fruit-bearing, short branches and small limbs on the main and minor branches of the tree, the fruit being near enough to the stronger branches to bear very heavy loads without breaking down.

It is of the utmost importance that apple trees should receive annual pruning, otherwise long shoots four, five and six feet in length may be thrown out. The fruit is ultimately borne away out on these long branches, which bend under the great weight and ofttimes break. Trees suffering from this lack of pruning were very noticeable in the Payette valley in the fall of 1910 when many over-laden and improperly formed trees were badly broken.

The Time of Pruning.

Based on our forty years' experience in Nebraska with the largest commercial interests in that state, it has been our habit to utilize all good weather from late November on. The cultivation and care of the trees should be such as to ripen the wood in early October, after which the trees may be pruned whenever dormant or



No. 4. The same Jonathan apple tree as the preceding, after it has been pruned for larger wood growth and greater ultimate size than the tree shown in No. 3. This tree should fruit moderately in its sixth year.

not severely frozen. We prefer late November and December pruning because at that season we are likely to have good weather. Our men worked all through this last December, rapidly and with comfort. By the end of December we had pruned our own orchard of thirty-six thousand trees and some four hundred acres for other parties.

In January we had deep snow followed later by deep mud, making the conditions tiresome for our workmen in walking from tree to tree. So far we have pruned something more than 1,300 acres of orchard this winter and we yet have a force of men engaged in pruning for other parties. It is important that the pruning of the orchard should be completed before the sap starts in the early spring and before the busy orchardist is engaged in other work. E. F. STEPHENS.

Idaho.

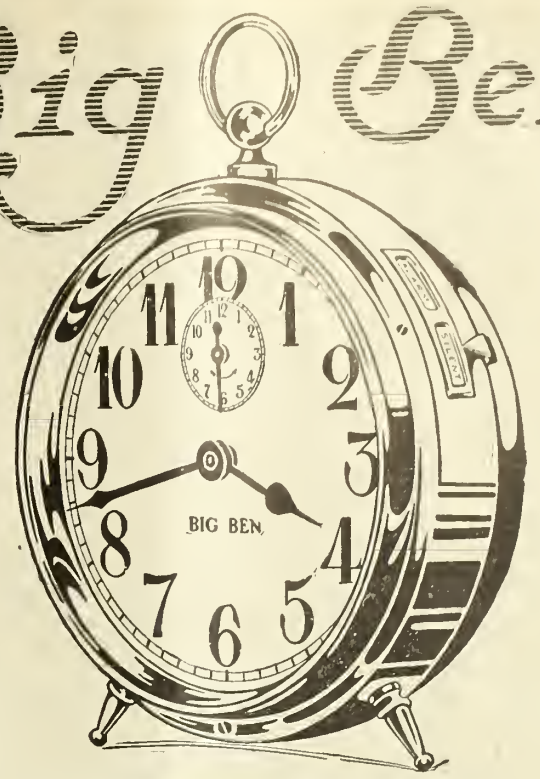
Crop Bulletin Discontinued.

The bulletin which was started a year ago to be issued twice each month and furnish crop reports at more frequent intervals than those in The Fruit-Grower, will be discontinued. There was not sufficient interest in the way of reports along the line followed by The Fruit-Grower and the Bulletin, to warrant the continuance of the reports three times each month.

Monthly reports will appear in these columns each month during the summer. For several years these reports have been of distinct advantage to those who grow fruit and to the dealers. These reports come directly from the orchard men, and represent the conditions as seen by the man who grows the fruit rather than the dealer. On this account The Fruit-Grower's crop reports have been by far the most valuable. By reading the reports regularly you can be better informed as to the crop conditions throughout the country than many of the buyers are, and you will be in better position to sell your fruit at a better profit than when you depend upon the buyer for your information. We know this to be true from the mass of letters that come to us every season.

Get your neighbors to subscribe.

Big Ben



If you'd rise early just say when
And leave your call with me—Big Ben.

BIG BEN has something to say to people who like to get up promptly in the morning.

He guarantees to call them on the dot whenever they want, with one prolonged steady call or with successive gentle rings.

And he guarantees to do it day after day, year after year if they only have him oiled every year or so.

There are 16,000 jewelers in the country who have known him since he was *that high* and who'll vouch for everything he says.

Big Ben stands 7 inches tall. He rings steadily for 5 minutes or intermittently for 10. His price is $2.50 anywhere.--If you cannot find him at your jeweler's, a money order sent to *Westclox, La Salle, Illinois*, will bring him to you express prepaid.

These Fruit Lands

in the justly famed

GRAND RIVER VALLEY

Of Colorado and Utah

Yield Enormous Profits

We have a tract of the CHOICEST FRUIT LANDS in the famous Grand River Valley, where all conditions—including climate, soil, altitude, irrigation, drainage and shipping facilities—meet absolutely every requirement for the growing of the Finest and most bounteous crops of Apples, Peaches, Pears, Apricots, Plums, Cherries and Grapes.

These fruit lands are on the main line of the Denver & Rio Grande Railroad, about forty miles west of Grand Junction, Colo., the greatest fruit distributing town in the United States. They are located

In the Same Section as the Well Known Morrisania Fruit Ranch

and only a few miles from it. If you are a reader of The Fruit-Grower, it is not necessary for us to dwell on the wonders of this Grand River Valley country, for they have been told time after time in the columns of this paper by James M. Irvine, its capable editor, and other recognized authorities.

The construction of our great dam, reservoir and canals is completed, and the land is ready for cultivation and planting. The water is mountain water, free from alkali, and we have a greater supply than can be used. On our tract there are two railroad stations, none of the property is more than 4½ miles from one or the other of these stations, and every ten-acre plot is on a road.

Big Profits the First Year

You don't have to wait for returns until your orchard is bearing, as this magnificent soil produces abundantly the finest yields of potatoes, sugar beets, cantaloupes and other vegetables and small fruit, returning an average profit per season of $100 per acre. This is not theory, but fact; and all we ask is an opportunity to prove it to your satisfaction.

These profits you can make throughout the first five years, and after that your ten-acre orchard will be in full bearing and pay you at least $5,000 per annum.

This is THE garden spot of the West. Bearing orchards here are selling at from $2,000 to $4,000 per acre—and pay big returns on the investment. We have the finest proposition, for either fruit grower or investor, that has yet been offered. Our prices, positively limited to the sale of the next 400 acres, are away down—and mind you, every foot of this land is Choice fruit land, positively the finest in the West. Be fair enough to investigate, that's all we ask—and we promise faithfully to present the biggest opportunity ever placed before you. For absolute proof address

Grand Valley Fruit & Water Company

EQUITABLE BUILDING, DENVER, COLORADO AND 25 BROAD STREET, NEW YORK CITY

THE FRUIT-GROWER
ST. JOSEPH, MISSOURI

Title Registered in U. S. Patent Office. Bro. Jonathan—Trade-Mark—Registered

Copyright, 1912, by The Fruit-Grower, St. Joseph, Mo.

Address all communications and make remittances payablo to "The Fruit-Grower," Eighth and Charles Sts., St. Joseph, Mo.

WM. G. CAMPBELL, General Manager JAMES M. IRVINE, Managing Editor
E. H. FAVOR, Associate Editor

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....J. C. BILLINGSLEA.....First Nat'l Bank Bldg.
New York Office..... A. H. BILLINGSLEA.....No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS.....New York Life Bldg.
St. Louis Office.....A. D. McKINNEY.....Third Nat'l Bank Bldg.
Minneapolis Office..... ROY R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents Agate Line. $7.00 per inch. Fourteen Lines to an Inch.
Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
No advertising in class generally termed "Objectionable" accepted under any conditions. Editions mailed on first day of month. Forms close on 20th of preceding month, i. e., January forms close December 20th, etc.

An Advertisement in The Fruit-Grower will place you in touch with One Hundred Thousand of the Most Prosperous Farmers in America

SUBSCRIPTION RATES

Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c, or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list.

Remit Coin, Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 APRIL, 1912 Number 4

Improved Machinery Is Economical.

Recently the manager of a large electrical company said that he had to replace nearly all the machinery in his plant every few years, not because the old machinery was worn out, but because is was so far out of date he could not afford to continue to use it. New machinery is expensive, of course, but to continue to use inefficient machines would cost a much greater sum, and so it was a matter of economy to buy modern equipment.

How many farmers reason in this way when considering the problem of farm machinery? Few farmers think they can afford to discard machinery until every part is about worn out, when as a matter of fact they would save money by throwing the machinery away and installing modern equipment. When farmers adopt a system which will enable them to tell just what it costs them to produce various crops, they will follow the lead of manufacturers in practically every line.

Heretofore farmers have been chiefly concerned with the problem of increasing the size of their crops. They have reasoned that the only way to make more money was to grow more stuff to sell. Now, however, they are coming to adopt the idea of the modern manufacturer, and they not only strive to increase their output, but to decrease cost of production at the same time. In order to do this improved machinery is needed.

Let's take some concrete examples: Lots of farmers still plant their garden seeds by dropping them by hand, claiming that they cannot afford to buy a seed drill. On the contrary, they cannot afford to waste time and seeds by planting by hand. The use of a good seed drill and garden cultivator combined will increase the crop and at the same time decrease cost of producing it. And good business policy requires that the improved machinery be used.

Again: It's well to harrow the soil immediately after plowing, if at all possible. Soil works better when freshly turned, and soil moisture will be conserved. There are plows with harrow attachments, doing all the work at one operation. More horses are needed to draw these modern implements, but the time of one driver is saved, and the results are more satisfactory in every way.

Then there are those who have orchards large enough to justify their using a power sprayer, but who hesitate to buy one, on account of the cost. Therefore they are putting in more time spraying their trees with a barrel sprayer. Now, barrel sprayers are all right, and have their place. But if one has twelve or fifteen acres of good-sized apple trees it will be found more economical to spray them with a power machine. Time is saved, and that's a consideration; the greater pressure will do better work, and that is of importance.

And how about labor-saving machinery in the home? There are modern improvements which can be installed there, to lighten the burdens of the housekeeper. No saving of money to be effected here? You say that the time of your wife doesn't count? Maybe there will be no actual saving of money; maybe your wife's time doesn't count, as measured by dollars and cents. But modern conveniences will save real flesh and blood—and sometimes they will even save the souls of the womenfolks. It does count, and the time has come when water systems, heating and lighting plants, etc., should be considered as improvements needed in every farm home. Not to save money, perhaps, but to save life itself.

Look at your home and your farm as a manufacturing plant. Study the cost of production, and you will find that labor-saving machinery is really a good investment. Read advertisements of manufacturers to keep posted on newest improvements, and if you can increase your yields or decrease cost of production by using them, then it will be usually found a good investment to buy. And don't forget washing machines, power churns, vacuum cleaners, water systems, heating and lighting plants, etc., for the women folks. A well-managed farm requires that attention be given to all these matters.

Does the Farmer Lack Business System.

In a religious publication recently appeared an article by a clergyman on the financial problems which confront the average country church, in which the writer attempted to explain why country churches, as a rule, do not have sufficient revenue to do the work they really should undertake. At the outset of this explanation the writer says:

"First, we must take into account the fact that the farmer, as a rule, has little system about managing his affairs, has no knowledge of his own business. He cannot tell you what it costs him a year to live; the cost of a bushel of corn; or a pound of butter. He takes whatever he can get for his produce and pays the merchants whatever they ask for what he has to buy. It is not surprising that a man like this should be loose when it comes to managing the affairs of his church. Again, the country people, as a rule, have not had a large conception of the work of the church held up before them. They do not know what it costs to run the church a year—or what it ought to cost."

Is this statement concerning the lack of business system on the part of most farmers too strong? Maybe so. But isn't it a fact that few fruit-growers know what it costs them to produce a bushel of apples, one year with another? Isn't it also a fact that the price at which most of them sell their fruit is fixed by the buyers, and has no regard to the cost of production?

There can be no doubt that great improvement is being made, and various agencies are at work to bring about better conditions. The Fruit-Grower still wants to hear from those who have cost systems which enable one to know just what it costs to produce any crop on the farm. If you have such a system, send us an account of it, and if you have special blanks to use in keeping account with your different crops, send us samples of them. We have some articles on this subject promised, and we want to hear from other subscribers. What are you doing to introduce more business-like methods in your farm bookkeeping?

Some Facts for Missouri Apple Growers.

It is a well known fact that the prices paid for apples in Missouri vary a great deal. Of two growers having similar locations with respect to soil, climate and market, one receives a fair price for his surplus while the other does not realize the cost of picking and packing. Why is this true? There are several factors that bring about these results, the most important being the care given the orchard, the manner of marketing and the business ability of the grower. Just to what extent each of these factors operates will depend, in a large measure, at least, upon the season and the supply of fruit.

In order to secure some figures which would show as nearly as possible the relation of prices to orchard care and method of marketing, the State Board of Horticulture some weeks ago sent out to a large number of fruit growers cards of inquiry containing the following questions:

Did you sell on the trees or deliver at the packing table or to the car or storage? At what price per barrel, box or hundredweight? Who furnished the barrel or box? Was price for orchard run or graded stuff? Did you spray, and how many times? Spray materials? Did you use a power sprayer or a hand outfit?

Responses have been fairly prompt and at the present time several hundred replies have been received from which the following data regarding prices received, etc., have been deduced; it being understood that in order to maintain uniform conditions, the cost of package when furnished by the grower has been deduced:

	Av. price per bu.
On trees	42.5c
Delivered	57.2c
From storage (cost of storage included)	98.3c
By the bushel	67c
By the barrel	58.5c
By the hundredweight	38.7c
Sprayed	61.7c
Unsprayed	49.3c
Graded	62.7c
Orchard run	43.4c
	Per cent.
Orchards reported sprayed	37
Orchards reporting no crop, no cause given	12
Orchards reporting fruit unfit for market, due to diseases and insects	2.5
Orchards reporting no sale, due to lack of buyers	1

Of the growers reporting, 50 per cent sprayed twice, 25 per cent sprayed three times, and of others, some sprayed once, others three and four times, and one eight times.

Some significant facts are brought out in the above figures. Perhaps the most important are: First, the difference of 12¼ cents per bushel received for sprayed over unsprayed fruit; and second, the failure of 2.5 per cent of the orchards to produce salable fruit.

The Cash Value of Spraying.

A fair estimate of the cost of spraying an orchard is seven cents per tree each application, or according to the Nebraska station, twenty-four cents per tree for four applications, making a total cost of $12.00 per acre for fifty trees.

According to a four-year test conducted by the Nebraska Station the yield of sprayed fruit over unsprayed fruit (four sprayings) averaged two bushels per tree while the average gain of merchantable fruit was 2.6 bushels. This, based on prices received by the Missouri grower the past season, would mean an increase of $1.63 per tree at an outlay of twenty-four cents for four sprayings, leaving a clear profit of $1.39 per tree or $69.50 per acre of fifty trees. The New York Station in a similar test found an increase of thirty-two barrels per acre which for the Missouri grower the past season would have been a profit of $60.00 per acre.

F. W. Faurot of the Missouri State Fruit Experiment Station, shows that sprayed trees (six applications) gave thirty to fifty per cent increase of merchantable fruit, while ninety-three to ninety-five per cent of the culls were perfectly sound, being thrown out because of lack of color or small size; and that ninety-five to one hundred per cent of culls from unsprayed trees were wormy or blemished by disease.

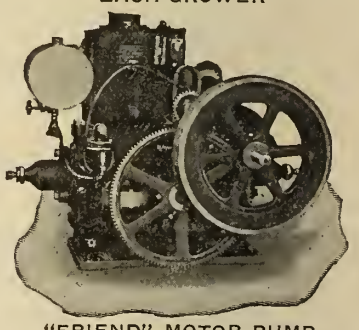
Viewed in the light of these experiments and the above data, it becomes apparent that spraying as a general

A "Friend" Nozzle Free

A Strictly $1.00 Nozzle
TO INTRODUCE THE
Fruit Grower's Best Spraying Outfits for 30 Days Only

Send us $1.00 for one of these and we will Mail 2 NOZZLES. State which are wanted. We simply want you to see our new catalog, which shows our MOTOR PUMPS in two sizes, COMPLETE OUTFITS in several sizes, HAND OUTFITS, HOSE, FITTINGS, Etc., Etc.

ONLY ONE FREE NOZZLE TO EACH GROWER



"FRIEND" MOTOR PUMP
Two sizes, 7 and 12 gallons per minute

The Simplest, Strongest, Smoothest Working Power Unit on Earth. Put it on Your Old Sprayer and SPRAY WITH PRESSURE.

IMMEDIATE DELIVERIES IF ORDERED NOW.

ORDERS NOW FAR EXCEED PREVIOUS RECORDS—DON'T WAIT.

"FRIEND" MFG. CO.
GASPORT, N. Y.
WORLD'S BEST SPRAYERS.
See Our Jan., Feb., March Ads.

GUARANTEED PAINT

Good Paint is the only thing that will save your house from decay. We sell it at **factory prices and guarantee it for 5 and 7 years.** You save the dealer's profit. We mix our paint—ready to use, and **pay the freight.** We offer **two gallons, free** to test, out of an order. Return balance at our expense if the two gallons are not satisfactory and get all your money back. Write today for our **Free** paint book, color cards and instructions how to paint. Don't buy stale paint with no life in it. Buy **fresh made to order guaranteed** paints from

O. L. Chase, The Paintman,
Dept. 39, 1220-24 Liggett Bldg.,
ST. LOUIS, MO.

orchard practice is a paying proposition and must be adopted by those who expect to become successful fruit-growers. The Missouri growers who sprayed their trees last year, not only received 12¼ cents more per bushel for their apples but they also harvested a much larger crop. Nor is this all. Their expenses for picking and sorting were proportionately less, since there were fewer culls to be thrown out. And we should not forget to add to all this the feeling of satisfaction and personal pride that rightly comes to the grower who places a superior product on the market.

What the Lazy Men Lost.

What about the 2.5 per cent who report their fruit unfit for market due to lack of spraying? There were no doubt more than this number who raised just such fruit, but the data collected gives the per cent as quoted. There are about 15,000,000 apple trees of bearing age in Missouri. If 2.5 per cent of all the trees in the state failed to produce merchantable fruit last year, it would mean the total failure of 7,500 acres counting fifty trees to the acre. Many growers have reported to this office a net profit of $100 per acre from their apples the past season. Now, if these 7,500 acres had been managed similarly, they should have yielded to the Missouri apple growers a net profit of $750,000.

Fifteen per cent of our correspondents report selling apples by the hundredweight. The figures show that they received 28.3 cents less per bushel than others who sold by the bushel or 19.8 cents per bushel less than those who sold by the barrel.

Does It Pay to Grade and Pack?

The cost of sorting and packing will vary considerably and there are no very reliable figures available. However, such data as is at hand places the cost at from five to ten cents per bushel. Even should the cost exceed this, the difference in price of sorted, packed apples over bulk apples will always be enough to pay a fair profit for the additional labor, provided, of course, the apples come from well-managed orchards. Apples sold by the hundredweight are usually of inferior grade. They are either culls or the product of uncared-for orchards, unfortunately the latter class making up, by far, the greater part. Only fifty per cent of our correspondents sold graded fruit. The returns show that the average price for graded fruit was 19.3 cents more per bushel than for orchard run. It might be wise in some cases to sell apples ungraded, but if the trees have had proper care, and the season has been at all favorable the per cent of culls will be relatively low and the grower cannot afford to market his crop ungraded. The difference in price will pay for grading besides leaving a handsome profit, and this profit rightly belongs to the grower.

The twelve per cent who report no crop, assigning therefor no reason, represent a relatively large acreage. It is highly probable that with proper management, some, perhaps many, of these orchards could have been made to yield a fair crop.

Helping the Grower Sell.

The Board of Horticulture did some excellent service the past season along the line of bringing buyers and sellers together, as shown by many letters received at this office. It is the intention to continue this work another season. It is believed that, with last year's experience as a guide and our increased knowledge concerning location and size of orchards obtained through the orchard census, greater efficiency will result and that this service can be extended to a much greater number of growers. Judging from observation and from the tone of many letters received from growers throughout the state, one chief drawback to apple growing in Missouri is the fact that when there is a fair crop so many growers are unable to market it to good advantage. Consequently the problem of profitably marketing the apple crop is a serious one and must be solved if Missouri is to maintain her reputation as a producer of the big red apple.

The Board of Horticulture is ready to do all in its power to assist in the solution of this problem, and, as a preliminary step, has begun the collection of data for a complete orchard census. This will enable us to keep in touch with growers informing them as to crop prospects, market conditions, etc. However, co-operation among the apple growers can do far more to better the situation than any other one thing. The organization of co-operative associations among the strawberry growers of South Missouri has solved the problem of marketing the strawberry, while the younger organizations among the peach growers of the same section are demonstrating the value of co-operation in the peach marketing business.

From the writer's viewpoint, the whole situation may be summed up in this one statement. A large per cent of the apple growers of Missouri must either resort to better practices in orchard management or else many of them will be forced out of the business.

W. W. CHENOWETH.

Missouri.

THINGS TO DO IN APRIL

Several readers of The Fruit-Grower have requested that a column be opened for the purpose of making timely reminders of things to be done during the coming month. It is hard for the busy man to always think of the innumerable things that are to be done, and get ready for it just at the right time.

In this column an effort will be made to indicate the important work to be done in the orchard during the next few weeks, and refer to past issues of The Fruit-Grower which contain articles full of details and covering the subjects mentioned. To get the full benefit of these reminders, save your copies of The Fruit-Grower. Don't throw them away or tear them up, but keep them where you can refer to them when needed. There are articles in every issue that you will want to read over occasionally, and many of the best of them will be called up several times during the coming season in this column.

Get the orchard heaters ready.

Make the application for San Jose scale now. See page 16, January Fruit-Grower.

Get your supply of arsenate of lead ready for the codling moth spray immediately after the petals fall.

Get the pruning work finished before the blooms open. See February Fruit-Grower, page 24, and page 32, March issue.

Cultivate the orchard before it gets dry to conserve the moisture.

Get your irrigation flumes and ditches cleaned out and repaired before the water is turned on. Make cement flumes. See March Fruit-Grower, page 62.

Top-working can be done at any time now. See page 35, February issue.

If the season is cold and wet during apple bloom, be prepared for an attack of apple scab. See January Fruit-Grower, page 12.

At the first opportunity, fill up the hollow places in your fruit and shade trees with cement. See January Fruit-Grower, page 24.

Nurserymen are now delivering trees for spring planting. Be ready to receive yours. Take care in laying out the new orchard. Read page 43, November; 34, January, and 58, March Fruit-Grower.

Keep an account of your farm expenses. See page 41, January and page 18, this issue.

Make money out of idle hours by spraying your neighbors' orchards, as others have done. See page 73, January, and page 39.

Be sure your spray hose is in good shape. If you need new hose, read page 74, January Fruit-Grower, before buying.

In the garden, have your stuff come early, and then can the surplus. Read again pages 5, 10, 14, 21, 36, 43, 51, 52, 53, 54, February Fruit-Grower.

Take care of the old orchard. There is money in it. Others have made big money by doing so. See pages 6, December, 48, 49, 60, 69, of January, and page 56, February Fruit-Grower.

Strawberry planting season is at hand. Excellent information about varieties, planting and culture are contained in the March Fruit-Grower.,

Small fruit plantations can be protected from damage by late frost. See November issue, page 5.

Wood fires scattered through the orchard are often effective in preventing frost. A method of using is described on page 39, November Fruit-Grower.

How Boys and Girls Can Make Money

IN EVERY community there are dozens of persons who should read The Fruit-Grower regularly, and we want agents to represent us in securing their subscriptions. We will pay liberally for the work, and a boy or girl can make a snug sum of spending money by representing The Fruit-Grower.

In the past we have received thousands of subscriptions from our "men folks," but not nearly as many as we should have received. Now we want to get in touch with our young folks, for we know they can get many subscriptions. In so doing they will confer a favor on the person who subscribes, will help The Fruit-Grower, and will be repaid liberally for their time.

Boys and girls, here's the situation: A stranger cannot come into your neighborhood and get many subscriptions for The Fruit-Grower. It will take him some days to learn just what farmers are interested in growing fruits, or in gardening, or in poultry raising.

But **you** know who are interested, and you can go and get the subscriptions in a very short time.

We want you to represent us and will pay liberally for doing so. It will not take much of your time. We will furnish sample copies, to show to your neighbors, and when you leave a sample copy of The Fruit-Grower with them it will be easy to get their subscriptions.

Now is the time to get started. Write for the agency in your neighborhood before it is taken. You can make good money by devoting your spare time to this work—other boys and girls have earned bicycles, watches, and two or three have even earned automobiles by taking subscriptions for The Fruit-Grower.

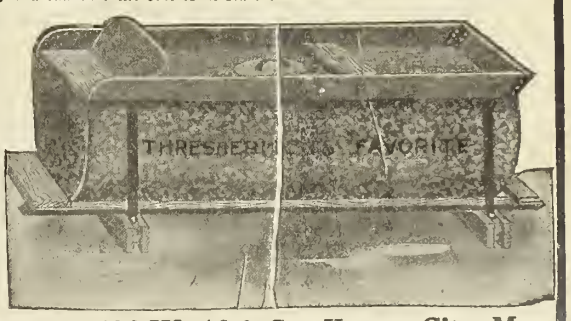
Write us about this work today, and we will send full particulars. We know you can do the work we want done, at odd times, and you will be pleased with results. Address,

THE FRUIT-GROWER
Subscription Dept. ST. JOSEPH, MO.

Make One Sprayer Do the Work of Two

By using one of our Columbian Wagon Tanks, you can keep your power sprayer at work in the orchard all the time, and can save the cost of at least one machine. This tank wagon can make the trip from loading station to the orchard while the sprayer is discharging a tank full of mixture, and there will be no lost time; one power sprayer will do the work of two. You will save the labor of at least two men, and the difference in cost of one of our Columbian Tanks and a modern power spraying outfit.

Our wagon tanks are constructed of heavy galvanized steel, with double seams, heavily soldered; tanks are lined with asphaltum paint and will resist action of spraying chemicals. They are now used by many up-to-date orchardists, and can profitably be used by a great many more this season. Write for prices at once, and be ready for the spraying season. We do not handle sprayers.



Columbian Steel Tank Co., 1600 W. 12th St., Kansas City, Mo.

STRAWBERRY PLANTS THAT GROW

A booklet describing a full list of varieties with prices. Also **INSTRUCTIONS FOR PLANTING AND CULTURE** of STRAWBERRY, RASPBERRY, BLACKBERRY, CURRANT, GOOSEBERRY and GRAPE PLANTS; also ASPARAGUS and RHUBARB ROOTS. All Stock Warranted First Class and True to Name or your **Money Refunded.**

C. E. Whitten's Nurseries, Box 9, Bridgman, Mich.

APPLE BOXES

If you want to find a ready market for your apples and at a much better price, pack them in standard bushel **BOXES.** They cost no more than barrels if you buy them from us. Now is the time to make your arrangements. Our mill capacity this year 500 cars. We ship all over the United States.

Write at once for size and price delivered to your station. **L. J. NELSON & COMPANY, 39th and Pacific Sts., Omaha, Neb.**

AGENTS! BIG PROFITS

The only strop per that strops any razor diagonally Guaranteed for Life.

Brandt patented Automatic Razor Stropper. Automatically puts a perfect edge on any razor, old style or safety. Big seller. Every man wants one. Write quick for terms, prices and territory.

G. R. Brandt Cutlery Co., 84 W. Broadway, New York

In writing advertisers please mention The Fruit-Grower.

SHIPPING STRAWBERRIES

How the Pierce City, Missouri, Association Overcome Marketing Difficulties

It has been said that "necessity is the mother of invention." This has certainly been demonstrated in the marketing of strawberries at Pierce City. In the beginning we had a few good growers and a great many slovenly ones. The good ones and the others brought their fruit into the same shipping shed, where is was loaded into the same cars, with the crate tops securely nailed, to be opened and inspected only at the other end of the line. These berries were always consigned, sometimes to Omaha, Lincoln or Denver, and sometimes to Sioux Falls, Minneapolis or Chicago. They were supposed to sell on their merits, but the sales varied so much, from a fair return to almost nothing at all, that the commission house usually averaged the sales accordingly, allowing each grower the same return per crate without reference to the quality of the berries. Here is where the trouble began.

The grower who had been careful to plant good varieties, cultivate well and pack honestly, received no more than the one who neglected his fields, planted poor market varieties and let his pickers do the packing. Pickers soon learned to "fill their boxes," sometimes with rubbish of all kinds mixed in with their berries. This was an eye-opener to the progressive grower and practically started the movement to inspect at one shipping shed.

At first our system was crude and imperfect. As most of the berries were brought in at the close of the day, it was often difficult to properly examine the berries by lantern light. Again, growers who wanted to deceive us would often do their chores and eat their supper before bringing in their berries, and in this way would evade the inspection as much as possible. Some of our largest growers would load their rejected crates back into their wagon and return with them as a part of their next load. Others would criticize the inspection as useless and unnecessary.

All of this was embarrassing to the management. In order to help out, we requested a report from the commission house as to the shortcomings of any grower whom we had failed to detect. They reported the name and extent of the deception. These reports were very beneficial, as we could call a grower to one side and "show him" in black and white just how his stuff looked at the other end.

We soon erected portable grading tables and put in a system of electric lights. At this stage we were getting down to business and were attracting the attention of the trade. Soon competition was so strong with the buyers that we began to sell an occasional car on track.

At first the price was low, but the results were always better than the consignments. These few track sales enabled the management to get in some good work on better packing and more thorough inspection. We gained knowledge as we proceeded, and one accomplishment suggested others, and always our customers got the benefits. We defined points of merit for our grades, named them "fancy" and "Number 1," and insisted on an honest pack of sound and perfectly formed berries.

Prices got better as the quality improved. Sometimes two buyers for every car were on the ground early every season, eager to take all we had to sell at our price, which was from twenty-five to fifty cents per crate above that of our neighbors who were consigning most of theirs.

It became necessary to line up the buyers like going to mill, in order to treat all alike. This enabled us to steadily advance the price until we sold cars on track some years at from $2.65 to $3.25 per crate. We spent money liberally for telegrams and tried to keep posted as to the city markets. In this we were greatly handicapped for the want of an organization such as that of the Ozark Fruit-Growers Association. If it had not been that we had a limited supply of the best quality of the country, our prices and sales would not have so satisfactory.

These successes developed quite a good deal of enthusiasm among our growers. The policy of the management had been vindicated and everybody had been "shown." New ideas as to varieties and packing were promulgated. The individual grower became responsible for his pack. This brought about the invention of the culling pan, into which the berries from each quart must be dumped. This pan is a flat tin scoop, tapering from a width of from eight to ten inches at the handle end to something like four and one-half inches at the other. It is about one inch deep and twelve inches long and has a round handle like a grocer's scoop. This enables the packer to see the berries which should be culled out and prevents damage to the others by handling. It also saves much time by enabling the packers to promptly return the selected fruit to the box.

Every grower at Pierce City uses from three to half a dozen of these pans. Our packers are careful to settle the berries well on returning them to the box, and then finish by rounding the top of the box well. When the boxes are packed they are placed in the crate, which is then "touched up" a little to make a neat solid red appearance. Our association has become famous for its full pack. Our package is always full when it reaches its destination. Several years ago we were warned by the trade to avoid competition with Hood River in such markets as Denver and other western cities. But since that time we have met them on the big markets and are proud of the results.

We hinge all our crates with a metal hinge, in order to encourage inspection at any and all times. This also prevents them from being broken and mutilated by the inspectors or buyers on the market who want to see what they buy, and see it in a hurry, too.

It would be a long story to tell all the trials and difficulties we have met, and in a measure overcome. The management has spent many weary hours pondering over these difficulties and their solution, but the reward is to the faithful, and we feel that we have had a just measure of reward.

Missouri. R. F. GEORGE.

Something New In Timepieces.

The alarm clock of today is about thirty-five years old. It is essentially American, being first invented and patented by an American.

It has been but little changed and improved during its life. Perhaps it is slightly lower in price and cheaper in construction but otherwise the same old noisy day-starter.

Battered by years of competitive strife, flimsy, noisy, unsightly, it has become a short-lived bargain, the constant butt of the cartoonist's joke. But out of Illinois has come a candidate for national favor along this line that is sweeping the country. This master alarm timepiece—the newest development in time recording instruments—is known as the Big Ben. It is made by the Western Clock Company, of La Salle, Ill. It is a clock of most pleasing appearance, a thin, beautiful, punctual sleepmeter with a quiet running motor, selective alarm calls, a mellow pleasing voice and a frank open attractive face.

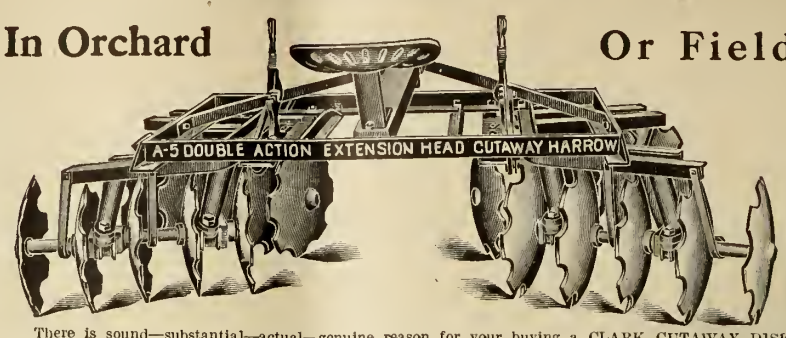
Big Ben is mounted in a massive dustproof, tripleplated case; with large, easy-winding keys and reinforced suspension points. Farmers whose time means money to them cannot afford to rely on a cheap, inaccurate, uncertain alarm clock.

The Western Clock Company states that Big Ben is sold by jewelers only at the uniform price of $2.50. They publish some very interesting literature about Big Ben that would be well worth while sending for. The address of the Western Clock Company is La Salle, Illinois.—Adv.

There's a fine chance for boys and girls in homes reached by The Fruit-Grower to make some spending money this summer by introducing The Fruit-Grower into new homes in their respective neighborhoods. We have a dandy proposition, boys and girls. Write for it today.

This Harrow Saves Labor

In Orchard Or Field



There is sound—substantial—actual—genuine reason for your buying a CLARK CUTAWAY DISK HARROW. Regardless of how much you pay, you can not possibly buy any better one. It works and pulverizes the soil so thoroughly that with less labor you secure better cultivation than with other machines.

You can buy one in any style or size you want. They are made in **double action** or **single action**, with 3 to 12 disks per gang of any diameter you need. The gangs of either double or single action may be extended for orchard work or closed up for field cultivation.

And in any style or size you buy you get the best there is in harrow material and construction. Twenty-five years of hard use in every section of America and many foreign countries has proven Clark Cutaways to be the best there is in any disk tool. **Clark Disk Blades** are the standard others strive to equal but never do. They are **cutlery steel** with **forged edges**. In design of construction CUTAWAY DISK HARROWS are **right**. Infringements and imitations should convince you of that. Ask your dealer to show you a Clark.

We want every reader of The Fruit-Grower to have our new catalog, "Intensive Cultivation." A postal will bring it.

CUTAWAY HARROW CO., Box 968, Higganum, Conn.

Clark's is the original Double Action Cutaway. All others are Imitations or infringements.

Insist That Your Pruning Be Done With The MONARCH

It insures a neat, clean job. Note the guidearm and cutting edge. Place guidearm against limb and thrust forward. It will surprise you how it works. Cuts smoothly, easily, and no time is lost or limbs bruised, as with the old style pruners. It's faster, too. All shear pruners cut directly across the grain of the wood, thus bruising and crushing the limb. Use the Monarch and avoid this. Saw attachment for extra large limbs. Hand forged. Built for service. Money back guarantee. Express prepaid. Price $3.25. Circular on request.

THIS COUPON IS WORTH 50c on purchase price of the MONARCH. Mail this coupon with $2.75 and this pruner will be sent to you prepaid by express.

Name .....

Postoffice..... State.....

Express Office .....

MONARCH PRUNER & MFG. COMPANY, INC.
Box 1463 SPOKANE, WASH.

THE FRUIT GROWER'S FRIEND

No climbing. Great labor saver; 2 sizes, 8 and 12 ft. Leading orchardists use them. Made of best saw steel. Agents wanted. Write for circular and prices. **The Ideal Pruning Saw Co., 788-90 Mt. Hope Av., Rochester, N.Y.**

The "Lou Dillon"

Tandem Garden Cultivator

It can be set to stir the soil any depth desired and to cultivate astride the row or between the rows. One-third quicker and easier than any other garden cultivator, easier to push than a lawn mower. No gardener can afford to be without one. If your local dealer does not handle them, write to us for descriptive catalogues and special **INTRODUCTORY Price.**

THE SCHAIBLE MFG. CO.
Dept. 2
Elyria, Ohio

Campaign Offer!

The great Daily and Sunday KANSAS CITY JOURNAL

SIX MONTHS $1

This startling half-price subscription offer is made by THE JOURNAL strictly as a **trial** and on a **cash-with-the-order basis.**

This is campaign year.

Every wide-awake citizen of the Southwest wants the news and he wants it **straight.** THE KANSAS CITY JOURNAL long has been known for its fairness. It prints everything that happens the world over and never colors the facts to serve private ends. We say: "Here's the truth; draw your own conclusions."

In this offer we furnish seven papers a week, including the Great SUNDAY JOURNAL. Every day THE JOURNAL will give you a complete telegraphic report of the World's doings; a large volume of general news; a large volume of miscellaneous news; a splendid editorial page; short stories of the day; a splendid daily market report covering every range of the market on all kinds of produce, grain and stock. All this service

SIX MONTHS, FOR 1 DOLLAR

Clip the coupon below, attach one dollar and mail today direct to

THE KANSAS CITY JOURNAL,
KANSAS CITY, MO.

No commission to news agents or postmasters.

The Kansas City Journal,
Kansas City, Mo.

I enclose one dollar. Send me The Daily and Sunday Journal for six months, beginning immediately.

Name. .....

Address. .....

.....

F.-G.

Cow Peas

A money-making crop—valuable as a fertilizer. Cow pea hay is relished by all animals. The increased yield per acre of the crop following will delight you. Ask for prices—also copy of 1912 Seed Book—FREE.

COW PEAS

Ross Brothers Seed House

326 E. Douglas Wichita, Kansas

In writing advertisers please mention The Fruit-Grower.

PROTECT YOUR TREES

FROM ALL CLIMBING INSECT PESTS by banding them with a harmless, sticky substance. Cheaper and more satisfactory than fly paper. Formula 25 cents.

WAHL SUPPLY CO.,
Ft. Sq. Station. Indianapolis, Ind.

GUARANTEED ALFALFA SEED

Absolutely Pure and free of weeds—vigorous and hardy—endorsed by Experimental Stations and Alfalfa Authorities everywhere; *sold on approval.* Alfalfa will grow on your land. Write for Free sample.

HENRY FIELD SEED CO.,
Box 15 Shenandoah, Iowa.

4 BUGGY WHEELS FREIGHT PAID STEEL TIRES **$8.75**

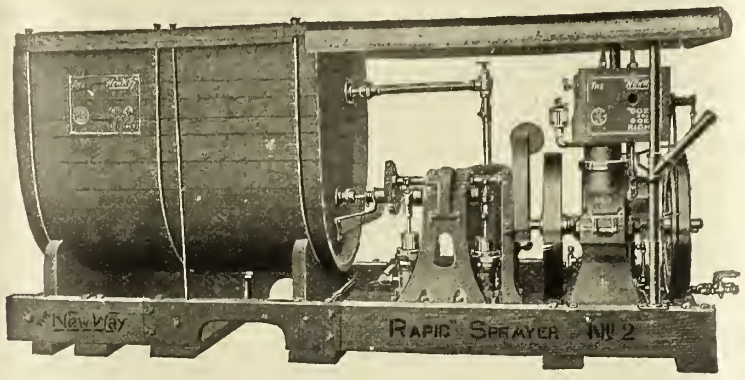
With Rubber Tires, $18.45. Your Wheels Rerubbered, $10.30. I make wheels ¾ to 4 in. tread. Tops, $6.50, Shafts, $2.10; Repair Wheels, $5.95; Axles $2.25; Wagon Umbrella free. Buy direct. Ask for Catalog Q

SPLIT HICKORY WHEEL CO., 530 F St., Cincinnati, Ohio.

If You Want Beautiful Apples and the Greatest Quantity, Insure Having Them By Using

THE "NEW-WAY" "RAPID" Sprayers

Wenatchee, Wash., June 7, 1911.
Gentlemen:
Two years ago I bought a "NEW-WAY" Spray Outfit, large size, and this spring one of your smaller size. Neither one has given me any trouble. If I was to buy another it certainly would be a "NEW-WAY."
Yours truly,
(Signed) O. G. FRANCE.



Watson, Ill., Nov. 12, 1911.
Gentlemen:
I am now through packing my apples and will say I am well pleased with my "NEW-WAY" twin cylinder sprayer. I sold our apples at $4.00 per barrel at the packing house, and the parties that bought them say they are the finest apples they have ever seen.
Yours truly,
(Signed) JOHN W. WALLS, Supt.
Wright & Co., Orchard.

It is guaranteed to stand hard, continuous, high pressure work and is built complete in our factory which insures its high quality.

Pump, either two or four cylinders, gear driven with crank bearings one inch apart which eliminates all chances of breakage of crank shafts, a very common complaint with other styles of spray pumps with bearings wide apart.

Pump pressure dome is drawn steel tested up to 600 pounds pressure. No danger of bursting under high pressure as with cast iron domes.

Engine is our celebrated "NEW-WAY" Air Cooled, the highest quality engine made. Most all other sprayers are equipped with the cheapest engine the sprayer makers can buy and will not stand up to heavy duty work like the "NEW-WAY".

Write for Our Catalogue S-1 giving full description

THE "NEW-WAY" MOTOR COMPANY
LANSING, MICHIGAN, U.S.A.
25 ASH STREET

JOHN DEERE PLOW CO.
Kansas City, Mo., U. S. A.

NOTES FROM COLORADO

Our small fruit growers throughout the inter-mountain states are not taking advantage of the unusually good markets which exist for dewberries. At present, the demand right here at home is not being protected in full, while the cities along the Missouri River and throughout the intervening country would consume large quantities at good prices if the berries were supplied to them.

The dewberry is a splendid fruit to follow after strawberries and the resultant change from strawberry to dewberry is an agreeable one to the consumer. The high qualities of the dewberry as a dessert fruit, together with the facility with which it can be converted by the housewife into delicious jams, preserves, etc., causes the berry to attain instant popularity upon its arrival at the market stalls.

The dewberry in general use throughout the Northern states is the Lucretia, a member of the Rubus Canadensis species, and its hardiness is quite pronounced. There are other varieties, but they are more or less variable in character and, for a time at least, it is well to stay by the Lucretia for commercial planting. This variety is a heavy producer of well shaped blackberry type fruit and the vines put out a vigorous growth.

The fruit is firm and has most excellent shipping qualities. In this respect it is not surpassed by any berry. When the fruit first turns black, however, it is not ripe by any means as the bitter taste will indicate, and the berries should not be picked for home market until they begin to sweeten. When they are to be shipped to a distant market, then they may be gathered shortly after they have turned to a full black color, but the exact degree of ripeness can be ascertained only through experience.

Down in the Plateau Valley, south of De Beque, Colorado, the dewberry is grown quite extensively in a commercial way, and also to some extent in the Grand Valley and in the vicinity of Canon City and Denver. Some commercial plantings are also being made this year around Steamboat Springs.

Dewberries may be profitably grown in practically all of the mountain valleys where the altitude is not above 7,000 feet. From close observation of the culture of this fruit, it has been determined that at the lower elevations, where the extremes of summer heat are found, the dewberries produced are somewhat small in size and generally speaking rather seedy as compared with the long luscious berries produced at the higher altitudes. But it is likely, however, that the adverse conditions at the lower elevations may be largely mitigated through more abundant use of irrigation water and particularly when the berries are filling out. Quite a variation in seasons may be found in different sections of altitudes and the fruit from different sections will not necessarily come into competition. Around Canon City they come into bearing along in early July, while at Steamboat Springs the bearing season will come about thirty days later, when the Canon City season is about over.

The yields under normal conditions are very satisfactory, and when in full bearing should produce from 250 to 350 crates per acre. Prices generally prevailing are from $2 to $2.50 per crate f. o. b. shipping point, and the returns fully justify liberal planting.

Culture of the dewberry is about the same as that given other small fruits —thorough cultivation and watering being the important essentials. A northern exposure of field is preferable although not necessary. The plants should be set out early in the spring in rows five feet apart with the plants four feet apart in the row. The vines are of creeping habit, and during the first year should be permitted to run along the ground but kept in the row so as to not interfere with cultivation. When growth starts the second season, lift the main stalk and tie it to a post or stake about two and one-half feet high. This serves to keep the fruit off the ground and facilitates picking. After the fruit is off, the vine may be dropped back to the ground which makes it very convenient for winter mulching when that is necessary. In localities where there is a considerable snowfall, mulching is not required as the vines, lying close to the ground, are sufficiently well protected by the blanket of snow.

After the second year, systematic pruning should be practiced and the vine should be trimmed down to three or four main runners, after fruiting season, permitting the newer stalks to remain. Propagation consists of burying the tips late in summer when they will take root readily.

❦

For years the strawberry growers have made little or no advancement in the cultivating tools employed in the fields. The same old one-horse harrow, tooth and bull tongue cultivators are being used generally by large and small growers alike, and the expense of horse cultivation of strawberry fields has, if anything, increased rather than decreased. The same disregard of progression, in these days of increasing labor cost and active market competition, would mean ruin for any other business. The general farmers and the orchardists have been greatly benefited during recent years through improved machinery and it behooves the small-fruit grower to climb into the band wagon.

A vigorous demand by growers for improvement in small fruit cultivating machinery would undoubtedly result in the implement manufacturers meeting the demand, but in the meantime, there are general purpose cultivators on the market which will give results far ahead of the old tools we are at present using.

For instance, during last season, I saw one up-to-date grower of small fruits using a cultivator that was perfectly adapted to his needs. It was a 1911 type of David Bradley two-horse riding disc cultivator. There were two gangs of three 14-inch discs, with flat blade and rake, soil leveling attachments to follow the discs. The gangs can be set at many angles to increase or decrease the amount of soil thrown by the discs and to throw the soil to or from the plants. It can be adjusted to straddle any ordinary strawberry row and it has a depth regulator. The levelers following the discs leave the surface of the ground in a most excellent condition.

A few minutes work by a blacksmith fitted up a pair of prongs for use in pushing strawberry runners into the row line when that was desired.

The outfit as above described cost, I believe, about $35.00 f.o.b. Chicago, and interchangeable shovel or spring tooth gangs are obtainable at a reasonable additional cost.

This cultivator was being used in a strawberry field and was certainly doing grand level and hillside work at a very rapid rate. I resolved then and there that my one-horse five-tooth and harrow cultivators would go into my collection of antiques so far as work in the open strawberry field is concerned. The riding disc cultivator, with a few special attachments, means better work with less outlay for labor.

❦

Now while we are on the subject of farm tools, I want to say a word about the two-way plow. It is a John Deere creation and for hillside fields out in this mountain country, it is the best thing yet produced in the plow line. It is a riding plow on the frame of which is hung a right hand and a left hand plow, either of which may be lowered into the ground at will. It is a horseflesh saver and there is no laying off of lands or plowing around a field. Neither are there any back furrows to level down or dead furrows to fill up. It is no harder on a team than any riding plow, is reasonable in price and if there are none in your locality to examine, your dealer can show you an illustration of it, by the aid of which you will readily recognize its worth.

Colorado. H. J. GERMAN.

CENTRAL SALES SYSTEM

A Solution of the Low Prices of Products—Organization and Proper Distribution

Much has been written and printed during the past few years regarding the high mark reached in practical co-operative marketing operations by the grape growers of the Lake Erie valley, better known in commercial circles as the Chautauqua grape belt. It is true that for fifteen years or more here, the grape growers have had a co-operative organization, forced into it for self-protection by the utter failure of shipments on commission to take care of a fruit crop, amounting annually to six to eight thousand carloads, valued at upwards of two million dollars, and these growers have and still continue to operate one big co-operative company in the section, The Chautauqua and Erie Grape Company, doing a hig husiness, in fairly successful manner, and under conditions said by Harold G. Powell, the federal department of agriculture expert, to he one of the hest organized he finds anywhere east of the Rockies. But while this is true, it has proven to he an equally evident fact, and one of even more importance, that this system has of late years proved entirely inadequate to the real needs of the situation, and incapable of taking care of marketing a crop of the kind, size and value of the Western New York grape crop.

The object of this article is to tell the real conditions in the grape industry for the douhle purpose of pointing out the further organization necessary here, and for the enlightenment of fruit, vegetable and truck growers elsewhere, who are now organizing marketing associations, or else struggling with the same problem which the grape growers are facing.

The Association's Shortcomings.

It is a fact that the object of co-operative selling associations is two-fold; first, the elimination of actual handling and sales expenses; second, the elimination of unnecessary competition and price cutting in market. Under strict interpretation of some federal laws, a shadow of a question has been raised, relative to the status of the last feature of the proposition, but in as much as no organization in this field yet pretends to control more than a meager fraction of the product this question can be forgotten with impunity. Having the two objects of co-operative associations in mind, the real point of the situation will become plain when it is stated that the co-operative grape shipping association this past season shipped but a little over 25 per cent of the grape crop. That is, while it did save in selling cost for those growers who are its memhers, and its contract growers, it failed entirely in eliminating the wasteful competition in the general market, necessary to provide a sale for its offerings, for the grapes shipped hy the C. & E. Grape Co. had to be sold in competition with not alone the Michigan crop, and the local offerings of many small areas, but also in competition with the offerings of three times as many other grapes grown and shipped from the same loading stations as the Union grapes. This resulted in two things; first, lower prices than might have heen realized if markets could have heen handled with the certainty and knowledge coming from having the control of the crop in hand, and its distribution properly and scientifically planned, and, second, duplication and triplication of sales expenses, coming from having a half dozen organizations in the field selling, instead of the single sales force representing the growers themselves, which will be possihle when a real complete co-operative organization is organized and in working order. Where is the trouble? Too few growers belong to the co-operative association. The memhership and the acreage has been dwindling from year to year. Individuals, looking for their own interests only, become disgruntled. Someone wants an office, and does not get it, and drops out. Someone else does not want another to have an office, and he gets it, then the kicker drops out. All these things operate to constantly reduce the total memhership in the co-operative association, particularly when under present conditions the co-operative operators can not get any more in the market than can the independent shippers, and so the outside grower realizes as much per pound, and per acre, as the union man.

These are the conditions existing today in the grape belt. They are the same conditions that exist in the Michigan grape belt, if well informeed correspondents are to be credited.

The Greatest Evil.

When fruit growers, or truck growers, or dairymen organize, the above situation must he expected, and must be fought at every hand. The attitude of the commission merchants, who would prefer to break up all co-operative organizations, must also he expected, and combatted from the outset. Greatest of all the evils, however, must be fought the competition and active enmity of other and similar organizations to your own, engaged in marketing the same kind of products in the same markets.

It is this kind of competition which has done more hurt in the grape marketing deal than almost any other. Between competition from other smaller growers' organizations, and the competition of cash huyers of grapes, buying with funds supplied hy big commission men in the large markets, the co-operative company has had a hard row to hoe, and were it not for a conservative and patriotic body of growers who realize that the co-operative company is the backbone and safety valve of the industry, and stick to it, some of them, at a real loss in time and money to themselves, the C. & E. Grape union would now be a thing of the past.

There are in the Chautauqua and Erie grape belt today three association in the town of North East and one in the town of Portland, which are actually co-operative associations in competition with the big company. They are not so named, hut the plan is to put the fruit in the hands of one man to sell at his best judgment, and pool the proceeds, charging a fixed and understood fee, per pound or per hasket, for his services. This is just the scheme followed on a larger scale hy the C. & E. Company, its hoard of directors replacing the individual salesman of the smaller companies. Besides these four organizations, there has heen formed this year a big organization of truck and small fruit growers, ready if they see fit to get into the grape deal this coming fall. Besides these there are at least ten cash buyers in the belt, buying grapes for cash, or selling on the market, at the same fee per basket as the hig company charges. This is the real situation, and the ten buyers and four small companies have handled three-quarters of the fruit, and the co-operative company one-quarter, the past year. Yet the co-operative company dominates the field, really fixes the prices, without douht stands as almost the only element in the market which works or should he expected to work continuously for hetter prices, and is, as said before, the backbone and the safety valve of the situation.

And this situation means the bread and butter, the living and the comfort of 5,000 families, over 40,000 acres of vineyards, valued easily at $16,000,000, and producing fruit which sold the past year for $2,250,000, even at the low prices then prevailing.

The Percent Dividend.

Last year's crop sold for a fraction under 10 cents per eight-pound basket, season average. Figures are on file with this association to show in numberless cases of good vineyardists and good methods it costs seven cents a hasket to grow the fruit and get it to the car door. This leaves a fraction over two cents per basket to pay interest, depreciation and profit, a return of less than three per cent on money invested in the vineyards the past year. The industry can not live on a three per cent basis.

Yet the people of the markets stand ready to pay 20 cents per basket for grapes in nearby markets, and 25 cents in farther away markets. This selling price will work no hardship to consumers, according to well gathered and digested information received from the market men, commission merchants and grocers approached by grape salesmen the past season. Where does the pinch come? Why is but 9 cents of the consumer's quarter reaching the grape grower?

Plainly and evidently because competitive selling results in price cutting; inadequate market information results in poor distribution, and inadequate information results in glutting markets with consigned, unsold fruit, which cannot be sold except at low prices because of the glut. Now how can these conditions be remedied?

First, is there a market? Figures prove that there is a market for twice the amount of grapes annually produced in the United States today, if properly and evenly distributed. I have the figures on file to prove this assertion.

Then the answer is that the fruit must be properly distributed to the market which exists.

How to Solve the Problem.

We have now reached the heart of the situation not only as it affects the marketing and the price which the producer receives for his grapes, and for his fruit of other varieties, but also of the whole problem of the present

We Learned How to Build Spray Pumps By Using Them

For years we have experimented with our own machines in real orchards to see just how they work. We conduct tests for ourselves and get reports from expert fruit growers who use Deming Outfits; thus we can study the matter from every standpoint. Whenever a point suggests itself where improvement can be made, we add it and then try it out.

Of Course YOU Want a

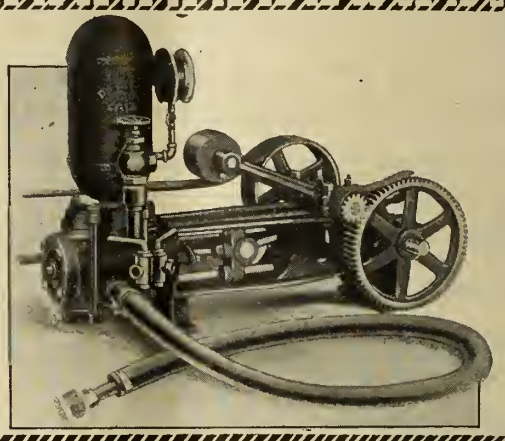
Deming Spray Pump

—so let's get together. We make over 20 styles: gasoline engine machines for big places, traction pumps and big hand pumps for medium-sized ones. All have hrass working parts.

Ask For Catalog and Name of Deming Dealer Near You

Complete particulars in our new catalog—free on request. Deming Spray Pumps are handled through our agencies in principal cities, and hy hardware and implement dealers almost everywhere. Consult your dealer; insist upon getting DEMING Sprayers. If he refuses, we will supply you direct.

The Deming Company, 330 Success Bldg., Salem, Ohio



SPRAY with the LEADER Gasoline High Pressure Machine

Has 3½ Horse-Power, 4-Cycle Engine and Hopper Jacket for Cooling

It supplies 10 nozzles at a pressure of 200 lbs., and this service can be increased without overtaxing the engine.

A Complete Spraying Rig and it will refill the tank, saw wood, grind feed, run your repair shop, shell or clean your grain, run the cream separator or the churn, and is safe, simple and satisfactory. Also 2-Horse Power Rigs with Triplex Pumps—Also a full line of Barrel, Knapsack, and Power Potato Sprayers with Mechanical Agitators, etc.

Catalogue FREE.

FIELD FORCE PUMP CO. The Leader "OSPRAYMO" LINE OF SPRAYERS ELMIRA, N.Y.

FIELD FORCE PUMP CO., 58 11th Street, Elmira, N. Y.

SPRAY *The* IRON AGE Traction Way

If you grow field crops in rows, you need this traction sprayer. We claim that our Iron Age Traction Sprayers are equipped with the best single or double acting pumps of any field sprayers made. They have less slippage than any other. The solution is always kept thoroughly mixed and delivered at high pressure in a fine spray, regulated by our adjustable relief valve.

IRON AGE Traction Sprayers have 55 and 100 gallon tanks, 4 or 6 row sprayer equipment, special rigs for grain, pickles and other crops, wind shift attachment, adjustment for different width rows, pressure gauge and center drive from both wheels.

See this sprayer on your dealer's floor. Write us at once for special booklet. You owe it to yourself to know all about this machine. A post card will bring the information. We make a complete line of potato machinery, garden wheel hoes and drills, etc.

BATEMAN M'F'G CO., Box 5069 Grenloch, N. J.

unjust and unequal increase in the cost of living. Admitting that the cost of production of food stuffs on the farm has increased, which is true in almost every branch of agriculture and horticulture, the increase in the final cost of these food products, most of which are necessities of life, to the ultimate consumer, has increased by leaps and bounds above the increased return to the farmer, and the reason is found only in the poor, antiquated, unequal system of distribution. And it affects the manufacturer almost equally with the agriculturist and the horticulturist. In view of these conditions it is not to be wondered at that immense combinations of manufacturers have been formed to simplify distribution, and eliminate competition in selling, and that operating under a simple and comprehensive system of distribution, the Standard Oil Co., the best example of this system, has made and accumulated hundreds of millions of dollars in profits on a capital originally represented only in minor millions.

The real solution of the problem of the grape men can be outlined by comparison with this great monopoly, although no union of sales efforts on the part of any sectional body of grape growers, fruit growers, truck raisers, or farmers in any line, can ever form a "combination in restraint of trade" as the Standard Oil Company has been designated. But to sell grapes and make a profit for the grower, there must be union of sales effort. Five competing co-operative concerns and ten or fifteen brokers and buyers cannot handle the selling of an 8,000 carload crop of grapes in eight weeks and not run into each other to their own detriment, and hence the detriment of every grower who depends on them for their money, unless they work in absolute harmony.

Central Association Needed.

To organize for this working in harmony, two things are necessary, presupposing that the growers have been educated to the point of seeing and agreeing upon the necessity. First a contract between a number of growers, large or small, to organize a local association, a stock company, preferably, which shall contract with its members to market their grapes through a central association to be formed between this association and all other similar associations formed for the same purpose. These smaller associations must be formed throughout the belt until every grower of grapes is enabled to be in touch and membership with one of the associations. Then step No. 2, the organization of the central sales agency composed of representatives of all the associations, and the working out of the practical selling plans. The smaller associations would handle the preliminaries, get the packages, lend assistance in securing help, load the cars, and possibly even inspect the fruit when at the car door. The central association takes the grapes when loaded, and sells them in the markets. Handling the whole crop, it knows to a car what the daily pick and pack is, and can control it within certain limits; having a business of sufficient magnitude it can afford information from every market center, and can send the grapes as loaded daily to the points where the market will absorb them at the best possible price and least possible pressure. That scheme is the one to which the grape industry must come if profit comes to the grape growers, and harmonious work for better conditions is the end to be reached.

But at the outset it has been demonstrated that for both personal and business reasons the buyers and the brokers do not want this kind of harmony. It would mean the loss of their jobs, and for the few that still tried to stay in the game would mean that they would be compelled to pay higher prices for the fruit they buy, and while they stay in the game they want to buy cheap. So they can be set down at the outset as opponents of progress. The broker and the cash buyer must either be eliminated or else relegated to so small a corner that he cannot influence the situation. Thus far the effort to do this has resulted in failure.

Next, the prejudices of the individual growers must be overcome. The growers must be convinced that the success of the entire industry depends not on the success or failure to get a cent or two more the first year, or the possibility of high prices occasionally and low prices sometimes, but on the whole industry sticking together, and selling together. Let the present company continue to handle grapes as it has done for fifteen years. Let the growers in each community, large or small, as they may see fit, organize their own companies, if they do not affiliate with the C. & E. Company, contracting with the growers to sell their crop solely and only through the central sales organization to be formed of the representatives of all the companies to cover the entire grape belt. This sort of three-sided contract is possible, feasible, and is in actual operation as the foundation stone of the great California Fruit Growers' Association, which is in fact a working concern representing the sales end of many smaller associations which deal with the individual grower in the problems having to do with picking and packing the crop, securing packages, getting competent help, inspection, etc.

When the grape growers of Western New York, the potato growers of Long Island, or New Jersey, the peach growers of Connecticut, and others learn that through a central selling agency only can the great and complex problems of distributing and selling a big crop of fruit or vegetables be handled, then there will be hope in sight for both more equitable prices to the consumer, less waste in transit and more of the consumer's dollars coming into the hands of the producer.

Can Save Half Million Dollars.

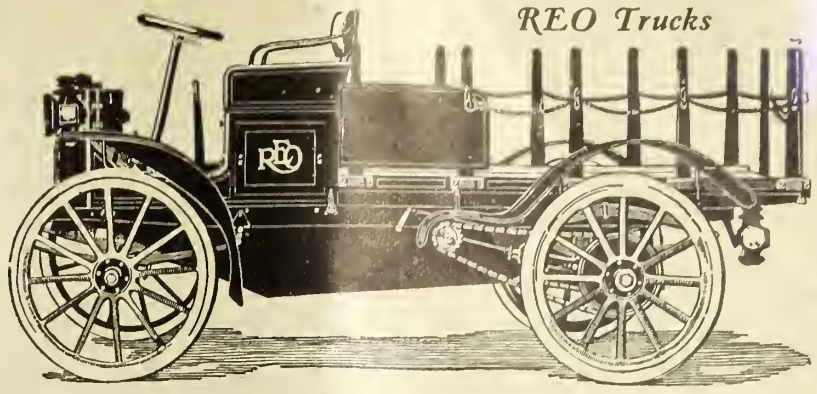
The Chautauqua County grape belt today has every essential necessary with which to build a successful central selling agency. It already has the local associations, and has had the necessary experience in organizing and conducting them. It has the unity of interest to bring about the union of effort. It has geographical unity also, for no part of the belt is more than forty miles from the most distant other point, and the means of communication and transit are absolutely unequaled. It has had the bitter experience of ruinous prices, and the experience also, in other years when there was a small crop, of high prices, indicating what the markets will do when properly supplied with only what fruit they will take. It has a home market for all waste and poor quality product in its sour wine plants, and a home market also for a large surplus of the best fruit in the great grape juice plants. Absolutely every condition is right and ripe for the organization, except the confidence of the grape growers themselves in their own powers of initiative and organization. Lacking this they seem to prefer the prospect of another ruinous year of competition, rather than the short, aggressive campaign of education and organization necessary to perfect a sales agency which will in the one year save at least a half million dollars in money wasted last year in duplication of sales machinery and wasteful cut-throat competition.

In conclusion it is well to observe that almost the same conditions confront every specialized industry. Truck growers, potato growers, strawberry men in the South and Southwest, celery raisers, even the enormous apple producers, could profitably take the lesson to heart. And it may be well worth remembering that when organizations of the size and importance that might be formed on these foundations, demand better freight conditions, reasonable express rates, cheap parcels post, etc., they will be heard and heeded, as the California orange men are now heeded when they get before the Inter State Commerce Commission.

New York. A. M. LOOMIS.

In sending check for his subscription, H. H. Shellenberger, Pennsylvania, says: "I am surprised at the great quantity of reading matter and illustrations in The Fruit-Grower.

REO Trucks



Wheel base, 90 inches—Horsepower, 10 to 12—Length behind seat, 6 feet—Capacity, 1,500 pounds. Front seat top, $25 extra.

Only $750

And Built by R. E. Olds

Please mark that price, and note this truck's capacity.

Most trucks which do what this truck does, cost from $1,200 up.

We are building trucks on a business basis—at a dray-wagon profit.

They are built in a separate factory, with a capacity of 5,000 trucks per year.

And they are sold through the thousand dealers established on Reo cars.

To pay more than we ask for a truck like this is rewarding inefficiency.

The Famous Designer

It goes without saying that R. E. Olds knows how to build a truck.

The dean of designers, with 25 years of experience. The builder of myriads of pleasure cars. The creator of Reo the Fifth.

Mr. Olds should be—and he doubtless is—the best qualified man in the business.

Mr. Olds' method of perfecting this truck was to put hundreds of them into use.

They were operated in city and country, on hills and plains, in all sorts of business service.

One loaded truck ran from New York to Oregon. Two carried the baggage in the Glidden Tour from New York to Jacksonville.

These tests have now covered two years. And never has a truck of this size and capacity shown better records in service.

50 Cents a Day

This truck is built so a 12-year-old boy can drive it. There is nothing to get out of order—nothing to do but steer.

It is immensely economical. On a six months' test, covering 4,553 miles and making 3,773 stops, the cost for gasoline, oil and repairs averaged 50 cents per day.

The average of many accurate tests shows the cost of delivery by Reo truck to be 60 per cent the cost of delivery by horse.

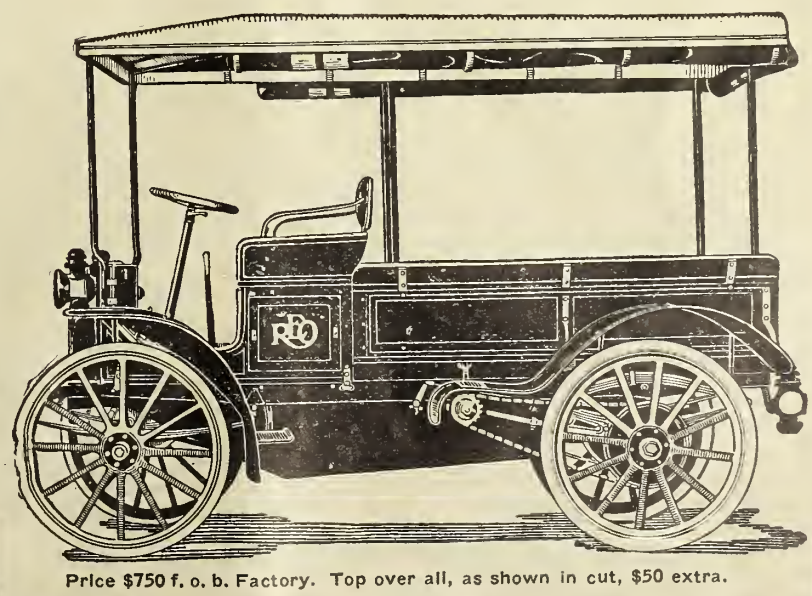
It does five times the work of a one-horse truck and does it three times as quick.

It is always ready—never gets tired. Nothing can feaze it—heat or cold, rain or snow.

The Reo dealer—right in your town — will demonstrate the truck. He will teach your men to run it. And he is always there to take care of it.

Write us for information.

R. M. OWEN & CO., General Sales Agents for REO MOTOR TRUCK CO., Lansing, Mich.



Price $750 f. o. b. Factory. Top over all, as shown in cut, $50 extra.

KEEPING BOOKS ON FARM

A Simple System Should Be Kept on Every Farm to Show the Profit and Loss

Farming is the oldest of occupations. It has been followed during the whole history of man as an occupation and it is only now and then that we find it as a business in the sense that that term is now used. Most farmers know, in a general way, whether they are making progress. If they are they succeed in buying a little more land, new machinery or have more money in the bank. They don't know, however, whether they made the money on crops, or cows, or grain, provided they attempt to do "general farming." The term general farming, to the New Englander, at least, signifies an attempt to run a small dairy, keep a few hens, grow a little fruit, raise a few vegetables, cut a little wood in the winter, and so on almost without limit. In this day of specialization such business is antiquated but not yet shelved by hundreds of hard working soil tillers.

At the end of a successful season many farmers fail to correctly analyze the reason for their success and to give credit where credit is due. If a season has been unsuccessful there is bound to be that pessimistic, helpless, hopeless feeling of the man with a too strong tide setting against him and who realizes too late that he can find no foothold to help him to hold his own. Under such circumstances he is not in a position to commence a new season with an assurance that he can correct past errors, and make more distinct past successes. The only way to know definitely the reason for success and for failure is to have a definite record of the costs and receipts with reference to the various phases of the business.

Cow Testing Association.

Perhaps the work of the cow testing associations established in many sections of the country gives a better illustration of the value of farm accounting than anything else. Expert investigators from State Experiment Stations have shown the dairy farmer how to find out what each dairy cow is doing for him. They have frequently discovered that of two cows standing side by side one was a profit maker and the other a money loser and worse than this, the farmer was entirely ignorant of this fact. It is now becoming the common custom for farmers to unite and support a "cow testing association." As a result of the work accomplished the unproductive cows are weeded out and the farmer finds himself very much better off to sell three non-producers and buy one producer.

The principle worked out in this way can be applied to other types of farming with equal success. To make farming a stable business it is necessary that this be done. Take the business of market gardening for another example. The market gardener raises fifteen different crops for market. His season results in financial loss which he knows is due partially to peculiar seasonal conditions. And yet, he is satisfied in his own mind, that a number of the crops gave him substantial profit. His problem is to determine what crops offset his profit, and why. He can't well base his final opinion on one season's work but he needs to know if those crops which failed to give a profit this season gave one last, and if those which gave a profit this poor season gave a proportionately larger profit in a good season. In order to make a success the obstacles must be overcome and an unprofitable crop is the easiest of obstacles to eliminate if we know its real standing. The same is true with the fruit business, grain growing and most branches of practical agriculture.

The development of systematic accounting has probably done more to make possible the development of such large business firms as are now so common, and at the same time keep such accurate record of the costs and expenses in the various departments that the profits and losses can be speedily traced to their sources. The farmer who is progressive, who really thinks for himself, invariably arrives at the place where he feels that he at least ought to know the detailed costs and returns from his business If he is as progressive as he should be he studies the problem to determine how to find out these costs.

"Where Have My Profits Gone?"

This situation confronts every business man in whatever line of work he may undertake. It is so clearly shown in that most excellent work "Where Have My Profits Gone," recently published by the American Sales Book Company, that it seems wise to include the following quotation taken from the first chapter of that work. "Sooner or later every business man takes his pencil and tries to find out why he is not making more money. He knows the business that he is doing. He believes that he is running that business carefully. He thinks that his employees are honest. Although he realizes that competition is sharp and that conditions may not be as favorable as he would wish, yet he sees no reason for his profits being so small. He expected them to be larger. He cannot understand where they have gone.

So he goes to figuring. He figures on the total amount of his business. He figures what the average profit ought to be in his kind of business. He totals up his fixed charges. He then adds up all his bills to find out what he has paid for during the year. He subtracts that from the total amount of money that he has taken in, and finds that the balance is not at all the same as the theoretical percentage of profits that he expected to get. What is the trouble? It certainly is puzzling. Then he goes over it again in another way and again finds a discrepancy. There is always a difference between the profits which he thinks he ought to have and the profits he actually gets.

Some men simply scratch their heads and wonder where the difference in profits has gone. Other men are ugly and try to 'take it out' on their employes. Still another kind of man says: 'Ah! I don't believe it,' and lets it go at that. But the business man who really wants to grow to be a better and a bigger success will look around for ways of finding out what the actual facts are, and what has caused the loss of his profits."

These remarks apply as truly to the farmer as to manufacturer, printer or grocer, and a solution of the accounting problem for the farm will do more to show the way to success than any other single thing.

Stick to a System.

The average farmer, by nature, and because of the character of his business, finds it difficult to set himself to the task of account keeping and particularly of accurate accounting. He must have a definite enough conviction of the value of such work to undertake it with sufficient determination to keep at it until it becomes a habit. Webster defines 'system' as "regular method," and accounting must be done according to a system. It should be accurate, as simple as possible and complete. A person need not know the science of bookkeeping, it is not essential that they be experienced, but it is necessary that the work be done in a regular systematic way; and a system once adopted should be held to throughout at least a season.

The object of farm accounting is to find out the value of the productive units of the business. In the dairy the cow is the productive unit; in the market garden the crops, as lettuce, beets, tomatoes are each productive units; on the fruit farm it would be the peaches or apples or currants. The accounting system must be so arranged that the farmer can find out the cost of production; his receipts are easily reckoned and the net profit or loss plainly shown for each productive unit.

Overhead Charges.

Every business is subject to what are called "overhead charges." This includes taxes, interest on the money invested, costs of general supervision such as salary for the general manager and other officers whose jurisdiction is over the complete plant and whose attention is not centered in one department or on one type of operation. There are these overhead charges on the farm. They cannot be properly charged to any single crop or productive unit and so they are lumped together and must be subtracted from the receipts before the profits are found. Careful thought will indicate what the overhead charges should include. Whether the farmer should vote himself a salary or a wage for his work makes little difference for he must have his living and in the business where one man is proprietor the net return is his.

Outside of the overhead charges nearly all farm expenses can be traced to the productive units and this value as productive units determined. For instance, the horses on the farm are there to do certain work. The work they do is to further the dairy business or to prepare the soil for a crop and keep it in condition for the best growth of that crop, or one of a dozen or two other tasks. To determine the cost of this horse labor it is necessary to know how much money in grain and labor it takes to care for the horse. It is necessary to know what

BOOKS FOR THE

Farm Library

No home is complete without its library of at least a few good books. The progressive farmer realizes that it is a waste of time to learn through his own experiments, facts which have already been learned and recorded by others in the many good books on agriculture. The following list contains the best of the latest books covering many of the important phases of farming:

Gardening

The Principles of Vegetable Gardening, by L. H. Bailey.....$1.50
Treats of equipment and capital, making hot-beds, cold-frames, soil and its treatment; seeds; laying out and management of the garden. Discusses treatment of each kind of vegetable.

Vegetable Gardening, by Samuel B. Green $1.00
A manual on the growing of vegetables for home and the market. Well illustrated.

The Forcing Book, L. H. Bailey..$1.25
The most complete treatise on the forcing of crops under glass during the winter. Discusses greenhouses, hot-beds, temperature, light requirements. A book for the winter gardener.

Bean Culture, by Glen C. Sevey..$0.50
A complete treatise on growing beans on a commercial scale. Treats of soils; seed selection; insects and diseases; harvesting methods; marketing, garden beans.

Tomato Culture, Will W. Tracy..$0.50
Complete treatise on tomato growing. History of the tomato; soils for maximum crop; hot-beds and cold-frames; starting the plants; cultivating; staking; production for canning, etc.

Celery Culture, W. R. Beattie...$0.50
A practical treatise of the principles involved in the production of celery for home use and for market, including the selection of soil, production of plants, cultivation, control of insects, marketing, etc.

Home Vegetable Gardening, by F. F. Rockwell $1.00
A book which tells what the average man wants to know in order to raise a successful crop of vegetables in his garden. A book that will answer every question and prove a reference of unfailing value.

Manual of Gardening, L. H. Bailey. $2
A complete manual on planning and planting the flower, fruit and vegetable garden, and decorating the home grounds.

The Landscape Garden Book, by Grace Tabor $2.00
This book shows just how to plan the home grounds; how to plant the trees so that they will give the most value in shade and beauty, how to group shrubs, etc. Beautifully illustrated.

Fruit Growing

Popular Fruit Growing, Samuel B. Green $1.00
A thoroughly practical book treating on the factors of successful fruit-growing, orchard protection, insects injurious to fruit, fungous diseases, and spraying. Illustrated.

Principles of Fruit-Growing, L. H. Bailey $1.50
A complete treatise on the practice of fruit-growing, comprising an inventory of fruits and a full discussion of the tillage, planting and fertilizing fruit lands and the protection of fruit plants from disease, frosts and other dangers.

The Nursery Book, L. H. Bailey.$1.50
A complete guide to the multiplication of plants. A standard work for nurserymen. Revised and enlarged.

American Fruit Culturist, by Thomas $2.50
A standard work on fruit culture, giving descriptions of all the leading varieties of cultivated fruit, together with principles of successful cultivation and marketing.

Bush Fruits, by F. W. Card.....$1.50
The purpose of this book is to furnish reliable descriptions of cultivated varieties and the necessary instructions on the cultivation of bush fruits.

Fruit Harvesting, Storing and Marketing, by F. A. Waugh.....$1.00
A practical guide to the picking, storing, shipping and marketing of fruit evaporating, canning, cold storage, fruit package laws, etc. Illus.

Systematic Pomology, by F. A. Waugh $1.00
A volume presenting clearly and in detail the whole methods by which fruits are studied, giving a comprehensive treatment of the subject.

The Fruit-Growers Guide-Book, by E. H. Favor $1.00
A guide to the cultivation of orchard fruits, giving method of selecting location, soils, planting, varieties to use, packing, marketing, combatting diseases, etc.

Poultry

Artificial Incubating and Brooding	.50
Asiatics, Brahmas, Cochins and Langshans	.50
The Bantam Fowl	.50
Ducks and Geese	.50
Eggs and Egg Farms	.50
The Leghorns, All Varieties	1.00
The Orpingtons, Black, Buff and White	.75
The Plymouth Rocks	1.00
Poultry Houses and Fixtures	.50
Rhode Island Reds	.75
Turkeys, Their Care and Management	.75
The Wyandottes	1.00
*Poultry Secrets	1.00
*The Million Egg Farm	1.00
*$100,000 A Year From Poultry	1.00
*Turkey Secrets	1.00
*Corning Egg-Book	1.00
*Duck Dollars	1.00

*Includes 4 years subscription to Farm Journal.

Bees

A B C & X Y Z of Bee Culture. Most widely known book on bee keeping. A standard for beginners and experienced bee keepers $1.50

Advanced Bee Culture	1.00
Cook's Manual of the Apiary	1.30
Doolittle's Queen Rearing	1.05
How to Keep Bees, Anna B. Comstock	1.20
The Bee People, Margaret W. Morley	1.60
The Honey Makers, Margaret W. Morley	1.60
Life of The Bee, Materlinck	1.50

The Townsend Bee Book. For beginners and experienced bee keepers ..... .50

First Lessons in Bee-Keeping, Newman-Dadant. An invaluable little volume for the beginner ..... .50

Miscellaneous

Domesticated Animals and Plants, Davenport	$1.25
Biggle Berry Book	.50
Produce Markets and Marketing, Seibels	2.50
A B C of Potato Culture	.85
Home Water Works, Lynde	.85
Audel's Answers on Automobiles.	1.50
Self Propelled Vehicles, Homan	2.00
Audel's Gas Engine Manual	2.00
The Farm and Garden Rule Book, Bailey	2.00
Business Organization, Sparling	1.25
Text Book of Entomology, Packard	4.50

Address Your Order to Book Department

The Fruit-Grower, St. Joseph, Mo.

the cost of horse furnishings, harnesses, blankets, whips, etc. This can be determined with reasonable accuracy. Perhaps it is found that the horse labor costs 35 cents an hour for a team and man which always has to go with it; for a single rig with man, 25 cents an hour. With this fact known, two hours work with the team in the orchard will necessitate a charge of 70 cents against the orchard.

The cost items in the production of any crop will be included in the following list: manure and fertilizer, horse and hand labor in preparation for the crop, seed and labor. Again, if the farm planting be systematically arranged, as it may well be, to determine the manure and fertilizer costs will not be difficult and the cost of seed is easily recorded. The other item, labor, is the most costly and the one which requires most attention for accurate accounting.

A Simple System.

The following system of keeping track of it has proven fairly satisfactory. A blank book which will measure 6x8 or 8x10 inches is ruled across the long way into several spaces. Half an inch space is left at the top of the sheet and the other spaces need not be more than a fourth of an inch wide, simply wide enough to accommodate plain figures. If the page is not already ruled the short way, lines at right angles to the others are drawn to provide spaces enough to accommodate the different tasks. Each sheet is devoted to an individual and at the top of each vertical column is noted the name of a crop or task which cannot be directly charged but is a regular chore. At the left hand side of the page the columns are numbered according to the dates of the working days of the month. At the right hand corner is placed the name of the month. If Tony is paid 15 cents an hour and works on lettuce for four hours the 10th day of May such is recorded on line marked 10th under lettuce on Tony's page. At the end of the month the lettuce column may foot up 63 hours. Then Tony's work must be charged against lettuce during May at $9.45.

The next step is to charge the work on lettuce in May to the crop. Possibly five other men have worked on lettuce and the total charge may be $43.00 for the month. In a book where a page or two is devoted to each crop this charge against lettuce is put in the cost column when the bookkeeping is done the first week in June. If 300 boxes of lettuce have been sold in May the item 300 boxes lettuce, with the amount of cash received is put in the receipt column. At the end of the lettuce season the expenses and receipts for this crop stand side by side month by month. In order to record the sales the salesman, whether he be the farmer himself or a hired man, must keep a careful record in a sales book which should be carried with him and the record made at the time of the sale.

How are we to know that Tony worked 63 hours on lettuce in May? Simply by recording his work day by day. A foreman might have this as a part of his task or the farmer himself can do it with less trouble than would seem necessary, if he systematically cultivates the habit. If ten men are at work and each is changed from task to task it would be difficult to keep accurate account and much time would be wasted. Such management would be unwise. As much system should be incorporated in the labor management as is possible and chores of daily occurrence need to be performed by the same individual day after day. In that way he is able to systematize his work in turn, and we soon learn that such a task can be correctly performed in so much time. It is for the management to see that this work is so done. The recording of it then becomes simple. John Dean works in the horse barn one and one-half hours every morning and one-half hour every night. Under a column, headed horse barn, on John Dean's page, the figure 2 appears every day and there are 8 eight hours more to account for of John Dean's work.

Enough has been written to indicate how this work may be done. If the business is large a foreman should be given the task of recording the work of his men. This record should be handed into the office daily and the bookkeeper files it away until at the month's end a summing up and final record made as has been indicated.

Account keeping on the farm does more than make the proprietor sure of his expenses and receipts. It instigates better management, the curtailing of unnecessary expense and the saving of time. H. F. TOMPSON.

Massachusetts.

Tony Nielson — May

	Chickens	Tomatoes	Celery	Lettuce	Running	Spraying	Spread Manure	Cultivating
1	3				7			
2	3				7			
3	4				6			
4	2		1		7			
5	3			2	5			
6	1		1		8			
7	4						6	
8	3	1	1	1			4	
9	3							
10	2			4				
11	1							9
12	4							6
13	1							9
14	4					6		
15	3					7		
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
Total								

The sheet on which each employe keeps a record of the amount of time spent at each kind of work during each day. The horizontal columns represent the days of the month; the vertical columns the kinds of work done.

Motor Trucks for Hauling Farm Produce.

The article published in the March Fruit-Grower, giving the comparative cost of hauling fruits in auto trucks and in horse drawn vehicles has attracted much attention from our readers. Everyone who has studied the question at all knows of the advantages of using the motors, so far as the physical condition of the fruit is concerned. What was surprising to many, however, was that it is really much cheaper to use the motor trucks, when service is considered.

We now have another report, of an Iowa farmer who used a motor truck to haul farm produce, and who has a statement showing the comparative cost of this service and where horse drawn vehicles were used. This statement considers simply the money side of the question. Nothing is said about the saving of fruits or the time of the owner of the farm. Nor is any reference made to another point which is often overlooked, and that is the saving of horses. Everyone who uses horses for heavy work in hot weather is really distressed to see how hard the horses work and their condition. If one could put a cash value on the nervous strain sustained by those who drive horses under such conditions, the showing would be much stronger in favor of the auto trucks.

Here are the figures submitted by the Iowa man:

COMPARATIVE COST OF INVESTMENT AND UP-KEEP BETWEEN HORSES AND WAGON AND MOTOR CAR

Original investment, 1 Dart Delivery car, $650.

Up-keep for one year, based on 50 miles per day 310 days, or 15,500 miles:

1033 gals. gasoline at 12c gal.	$ 123.96
40 gals. oil at 35c per gallon	14.00
Grease, alcohol and glycerine	5.00
Tires, 3 sets per year	138.00
Interest on investment, 5%	32.50
Insurance	50.00
Driver at $14 per week	728.00
License and registration fee—wheel tax	12.00
Current repairs and yearly overhaul, 5%	32.50
Depreciation, 15%	97.50
Total up-keep motor one year	$1,233.46

ORIGINAL INVESTMENT

4 horses at $200 each	$ 800.00
3 wagons at $175 each	525.00
3 sets harness at $40 each	120.00
Other equipment	75.00
Total investment	$1,520.00

UP-KEEP

4 horses, feeding, stabling, shoeing, veterinary services, etc., at $22.08 per month each	$1,060.00
Interest on investment, 5%	76.00
Depreciation, 20%	304.00
Insurance	75.00
Three drivers at $8 per week	1,248.00
Wheel tax	15.00
Repairs on wagons and harness	75.00
Total up-keep of horses and vehicles, one year	$2,853.00

Cost per day for motor car, $3.97.

Cost per day for horses and wagons, $9.

Saving in favor of motor car, per day, $5.03, or $1,559.30 per year.

We are very anxious to hear from other Fruit-Grower subscribers who are using motor trucks in handling their fruit crops. We know that many of them are using these vehicles; tell us about your experience, whether favorable or unfavorable. We are especially anxious to hear from berry growers who have used motor trucks in hauling tender fruits.

AETNA DYNAMITE

Blows Stumps Into Kindling Wood

FARMERS: If you are not good business men, *you ought to be.* Efficiency and economy on the farm turn *waste* into *profit.* For every hour of labor you employ some hand to perform, you pay out so much money. Sometimes it's *absolute waste.*

It is particularly waste when it is paid out for *stump pulling.* AETNA DYNAMITE can remove your stumps and boulders in *one-tenth the time* it requires by the old way, and it only takes *one man to do it,* and mighty few dollars. A stump filled field that would take weeks to clear by the old method can be cleared in a few days by the use of AETNA DYNAMITE.

You don't need stump-pullers. That's boys' work. You don't need horses and men. That's pure waste. A few pounds of AETNA DYNAMITE will turn a wilderness into a productive field. It is *the highest grade explosive manufactured in the world* for farm and commercial uses.

We have several mighty interesting booklets describing the uses of AETNA DYNAMITE—showing how it saves money and promotes efficiency—and we will send them to you, *free of all cost,* for the mere asking. Send us a postcard today and you will hear from us by return mail. AETNA DYNAMITE is as old as dynamite It is famous throughout the world It is the one dynamite which does its work thoroughly. We have no competitors.

THE AETNA POWDER CO.
General Offices—Tribune Building, Chicago, Ill.
FOR QUICK ATTENTION ADDRESS DEPARTMENT R

SAMSON WINDMILLS

Different than all others and better because of the double gears, big oil boxes, drop-forged wrist pin, removable bearings, center lift. No side strain, no noise. Big, heavy and powerful. 4, 6, 8, 10, 12, 14, 16, 18, 20 ft. diameters. Send for catalog. Also feed mills, pump jacks and gasoline engines.

STOVER MANUFACTURING CO.
260 Samson Ave., Freeport, Ill.

KOUNS' Steel Stackers Rakes and Sheds
make good hay. Let me show you.
Kouns Steel Rake, Salina, Kansas

TRAINING FRUIT TREES

How to Built Up a Fruit Tree For Best Future Usefulness By Proper Trimming Methods

In the following article I shall try to tell in words and pictures how to grow and build up the future "frame or skeleton" or fruit trees by means of rational trimming methods.

Most fruit trees which we see during the growing season, especially pear trees, when laden with fruit, are a pitiful sight, being broken by their burden. What is the cause of it is the question. The general answer is that the tree has too much fruit, being unable to bear up its weight. Why? Because the tree has not been properly trimmed from the very start of its life. The trees which are set out at one or two years of age are at the mercy of the planter's knowledge of trimming, and who generally is afraid to cut too much from the newly set tree.

How much shall be cut off? This is a question which depends on the size of the tree to be planted. A one-year-old tree will generally represent nothing else than a so-called "whip." This is very easy to trim, and the height at which the cutting is to be done depends on how high the future head is to be. The most desirable height is from eighteen to twenty-four inches from the ground. At this height we start the branches that are to form the head.

Of what consists a properly started head? In answer to this question I shall have to go into details, as it is essential for every owner of a tree to know of what it consists. If we take a one-year-old shoot of an apple or pear tree and observe it closely we will find that the sixth bud is always standing in the same direction as the first one, and each of the others point in other directions. (Fig. 1.) On this account six buds are needed to form an ideal head. The first bud is to form the lowest lateral branch, the second bud the second lateral branch, and so on. But the sixth bud is the most important, as it is the future leader. (Fig. 2.)

Make Straight Branches.

If we want to work with exactness and correctly, that is, if we want to have specimen trees, and have the always squeezes and never makes a smooth, sharp cut.

After the six buds which are to form the head have been selected, the sixth is held firmly between the fingers and all buds above it are removed to a height of about four to six inches. The stub will die back to the sixth bud, and is removed in August or September of

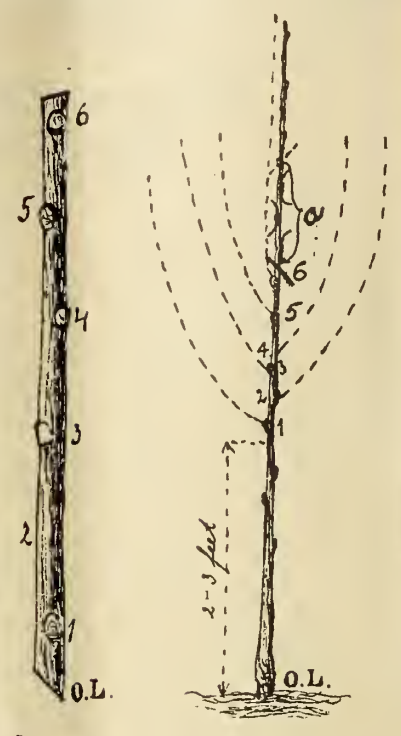


Fig. 1 Fig. 2.

Fig. 1. A young shoot with six buds necessary to form a head.

Fig. 2. A one-year-old tree showing buds 1, 2, 3, 4, 5, 6, which are to form the head. The top is removed above bud 6, except that a stub "a" is allowed to remain. All buds below 1 are removed.

the same year, after which time the leader is perfectly straight. If the tree is cut in this manner we shall have the foundation for a proper head the first year after planting.

(This statement applies particularly where a tree is wanted with a central leader. Where an open-center tree, or vase-shaped tree is desired, the leader

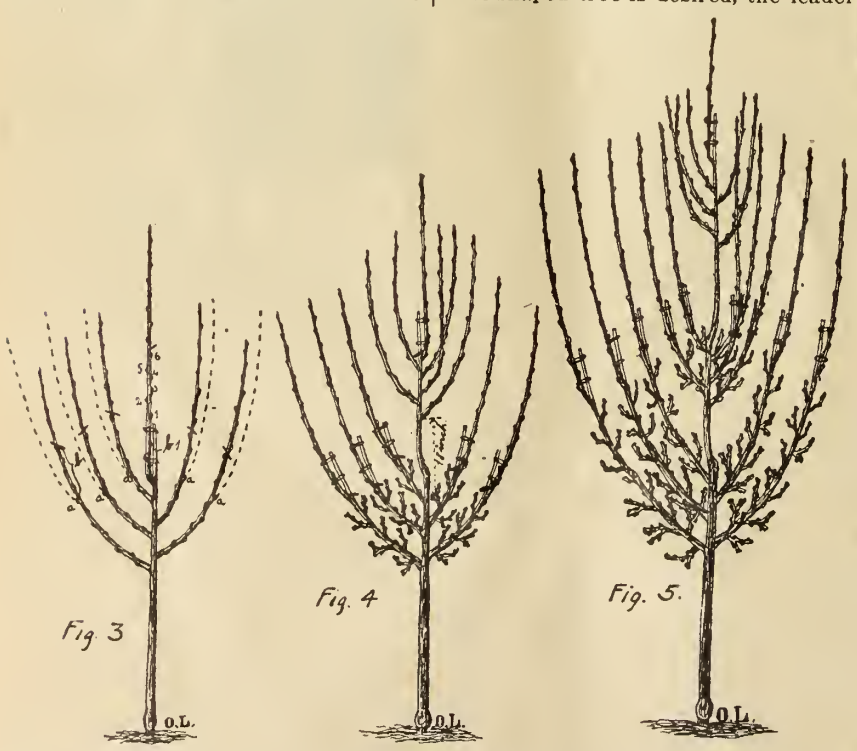


Fig. 3—A two-year-old tree, showing how to cut the limbs so as to form the second set of branches. The outside buds marked "a" are to form the terminal, and the stub "b" is to be left, where needed, and cut off perfectly smooth the following August or September.

Fig. 4—The same tree after it has made the second set of branches. The fruit-bearing wood has been cut short, to two or three buds only.

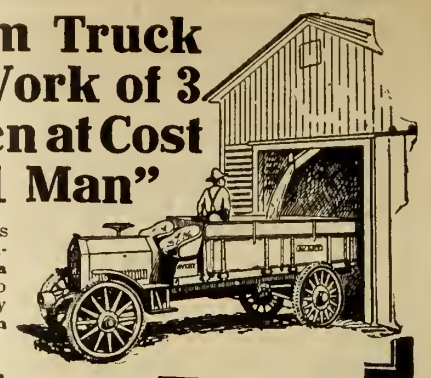
Fig. 5—The same tree after the third season's growth.

time to spare, we leave above the sixth bud as pointed out, a stub onto which we fasten the forthcoming new shoot in order to make it grow perfectly straight, as the branches coming from lateral buds have a tendency to grow sideways. The best tool to use for this sort of trimming is a good pruning knife, which must be kept as sharp as a razor. Shears are no good, as it can be cut out, and each of the lateral branches continued in the manner described for the central leader.

While the system of pruning as given in this article applies most directly to the trimming and training of fruit trees in ornamental form, or espalier, the underlying principles are based on sound facts, and represent the solid foundation of all pruning. A thorough understanding of these principles will enable the orchardist to prune his trees in a more sane and rational manner than many now practice and produce stronger, better formed and more fruitful trees than we are accustomed to find in the majority of even the better pruned orchards of the country.—Editor.)

The trimming which must be done in the second year requires a little more skill, but if common sense and judgment are used there will be little difficulty. I assume that the head was perfectly developed and is strong enough to be cut for the next set of branches. The distance between each set of branches is about fifteen inches, which gives ample room for the admission of light and air. From the last lateral we measure about fifteen inches and start again to count six buds (Fig. 3.) for the next year's head, which will develop in the same manner as before. The next is to cut the lateral branches. It is safe to say that at least two-thirds of the last year's growth on young shoots should be cut off, making the cut immediately above a bud pointing to the outside. On these

"My AVERY Farm Truck is Doing the Work of 3 Teams and 3 Men at Cost of 1 Horse and 1 Man"



THAT'S one owner's opinion. Others are having similar results. No wonder farmers are **selling their extra horses** and getting Avery Farm Trucks to do hauling and general farm work. Avery Trucks **make money for owners right from the start** and save them hard work.

AVERY Farm Truck

hauls fruit, milk and cream, grain, live stock, hay, building materials and any other kind of farm produce or merchandise. Speed 2 to 12 miles an hour according to road conditions and load hauled. Does country hauling cheaper, quicker and easier. The Avery Truck also does field work and belt work. Pulls **plows, discs, harrows, packers, seeders, binders.** Drives **threshers, clover hullers** and other belt machines. Does work of 6 to 10 horses.

FREE Book on Hauling and Farming With Avery Trucks

This Avery Book tells about power hauling in the country and power farming—it's free. **Write for it today,** saying what hauling you do, how many acres you farm and how many horses you use. Ask for Avery Farm Truck book. Address

Avery Co., 2150 Iowa St., Peoria, Ill. *Also manufacturers of Avery Gas Traction Engines, Undermounted Steam Traction Engines, "Self Lift" Engine Gang Plows and "Yellow Fellow" Grain Threshers.*

The More You Look

into the tire question, the more certain you will be to insist on getting

Firestone TIRES

"Most Miles Per Dollar of Cost"

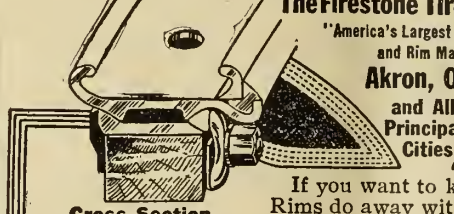
They are built extra durable to withstand extra hard service on rough roads. The fact that Firestone Tires hold the world's record for durability is proof that they are best for the hard service demanded by automobile-owning farmers.

The Firestone Tire & Rubber Co.

"America's Largest Exclusive Tire and Rim Makers"

Akron, Ohio and All Principal Cities

Write for Our Book on Tires and Rims—Free!



Cross Section View of Firestone Demountable Rim

If you want to know how Firestone Demountable Rims do away with tire trouble delays and road repairs, and cut down tire expense, write for our Demountable Rim Book—FREE.

The Safe Investment of Your Money

A company that has withstood the test of time for fifteen years, growing stronger each year through prosperity and panics, is a safe place for your funds. Our record is one of uninterrupted success for a long period under one management, with increasing strength and security assured. Our

7% Gold Bonds

provide an absolutely safe investment with a fixed income. Interest is payable semi-annually. These bonds are in the denomination of $100 and have coupon attached. They are secured by first mortgage on our real estate and all other property, including The Fruit-Grower.

If you are considering the investment of funds, the security of principal is the first requirement and we can satisfy you, as we have many other readers of The Fruit-Grower, who are now drawing interest on our bonds. Send check for the amount you have to invest and we will forward the bonds by registered mail or express; or we will send the bonds to your banker and you may give him the money for them. Write today for some of these bonds. We refer you by permission to the First National Bank of St. Joseph. Address

THE FRUIT-GROWER, St. Joseph, Mo.

lateral branches we also are to leave stubs, if we are to work to perfection, and which have the same duty as the one described before.

Top-Heavy Branches.

Out of these selected buds a strong shoot will come which is the next year's lateral branch. All the other buds below this new lateral will send out shoots which are to form the fruit bearing wood. The figures 6, 6a, 6b show the result of leaving a new shoot uncut or too long. That is the reason why so many trees are broken in such places as indicated by the space "c" to "d" in Fig. 6a. This part of the branch will stay bare and get weak, while the part above will bear fruit, get heavy and break.

In order to transform these shoots into fruit spurs we must proceed in the following manner: As soon as these shoots are about four or five inches long (see Fig. 7) we pinch them off with the finger nails, as they are very tender. We allow just two or three buds, or rather leaves, to remain. After a few weeks, we will discover that out of these pinched shoots a new shoot will come (Fig. 7a) which must in turn be pinched when four or five inches long, pinching back to two or three buds again. If the season is favorable a third pinching will be necessary (Fig. 7b). By this operation we will force and transform the lowest buds into fruit buds, which can be readily seen, as they have a much rounder appearance than the leaf buds (Fig. 7c).

The above described method is for trees which, under favorable conditions, have grown to perfection and have formed an ideal head the first year. But there will be lots of exceptions where this is not the case. If we cut the one-year-old shoot as described before, it will often happen that not all five side buds will push out evenly as desired. In many cases only the three or four upper buds will sprout out properly, as the tendency of the sap is to go up into the highest buds. To avoid such an irregularity beforehand, it is advisable to cut a notch (Fig. 8) above each of the lowest two or three selected buds. This cut will bring the desired result, without injuring the upper ones. By these means the flow of sap is checked to a certain extent and is forced to supply the lower buds as well as the upper ones. Should one or the other shoot get too much ahead of the others during the growing season, simply pinch the tip out of the most vigorous, and bring the necessary balance into the branches. Sometimes we will find the bead which was formed during the first year will not be strong enough to be cut for the second set of branches. Such a head must be cut according to the growth it has made, cutting rather severely in order to get strong, stocky growth. The stronger some of these shoots are the more severely they should be cut in order to give the weaker ones a chance to catch up.

OTTO LOCHMANN.

Pennsylvania.

Fig. 6—A lateral branch, not cut back.

Fig. 6a—The bare space on the limb, from "c" to "d," is where the limb will break when loaded with fruit.

Fig. 6b—The same sort of a lateral branch cut back properly and made thick and stocky, and well set with fruit spurs.

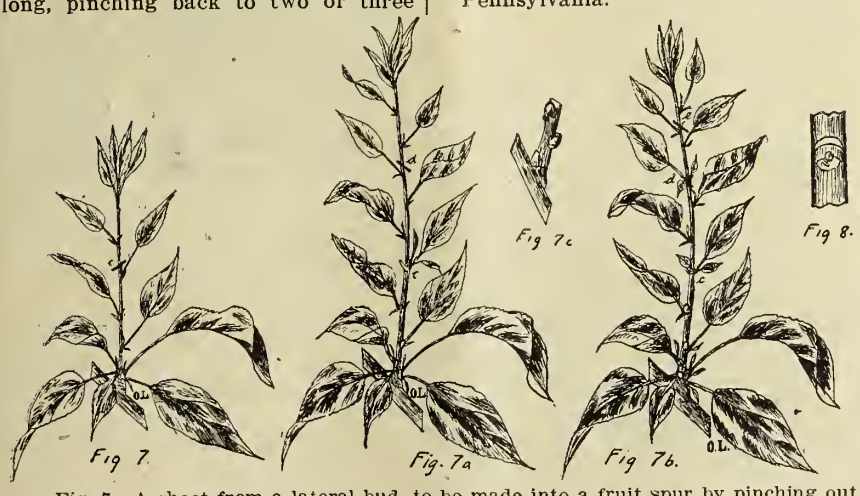


Fig. 7—A shoot from a lateral bud, to be made into a fruit spur by pinching out the end at "c."

Fig. 7a—The same shoot showing the new shoot that came from bud "c," and which is pinched again at "d."

Fig. 7b—The same shoot at the time of the third pinching back at "e," showing how the lower buds have developed into fruit buds.

Fig. 7c—The same shoot showing how it is to be cut back during the dormant season.

Fig. 8—The half-moon shaped notch which forces the bud to come out.

Taylor Returns to Colorado.

Some weeks ago Prof. E. P. Taylor, horticultural inspector for Mesa county, Colo., resigned his position to accept the management of the orchards and farm of the Mid-Continent Orchard Co., at Parker, Kans. This change was made only after mature consideration and assurance that ample funds would be provided for making the vast orchards of this company superior to any in the Middle West.

But the funds failed to materialize; the Mid-Continent Orchard Co. is a thing of the past, and the promoter of the concern has been lost in the shuffle. Prof. Taylor has returned to Colorado and will devote his time to horticultural consultation, with his office at Rifle, Colo.

Let us help you in your Painting

Let us give you, free, the benefit of the forty years we have spent experimenting and testing paint—finding out what paint is best for each purpose—for your barn—wagons—wooden and iron implements—your house, inside and outside—your furniture—everything on your farm. Our years of experience and our extensive equipment have enabled us to make

Lowe Brothers "HIGH STANDARD" Liquid Paint

the best on the market, for it protects best, is most easily applied—spreads, covers and wears best—and in the end is cheapest—"It is the paint of performance."

Get our Free Farm Packet. In it we tell you why, when and how to paint. We give you lots of valuable information about paint, and show you actual color—finishes and shades. We tell you how to grain your woodwork—how to save time, trouble and money in painting. The farm packet is a reference book of paint information. *Write us for it today.*

THE LOWE BROTHERS COMPANY
496 E. Third Street :: Dayton, Ohio
Boston, New York, Chicago, Kansas City Lowe Brothers, Limited, Toronto, Canada

CENTURY
Ready Mixed Paint
Guaranteed For Ten Years

CENTURY HOUSE PAINT, in 1-gal. cans, Any Color. Terms cash, - - **Per Gallon, $1.20**

CENTURY BARN PAINT, in 1-gal. cans, Red, Green and Gray. Terms cash, **Per Gallon, .65**

FREIGHT PAID to any station east of the Rocky Mountains on all orders of six gallons or more, except to N. D., S. D., Colo., N. M., Tex., Okla., Miss., Ala., La., Ga. and Fla. Delivered price to these States is 5c. per gallon additional.

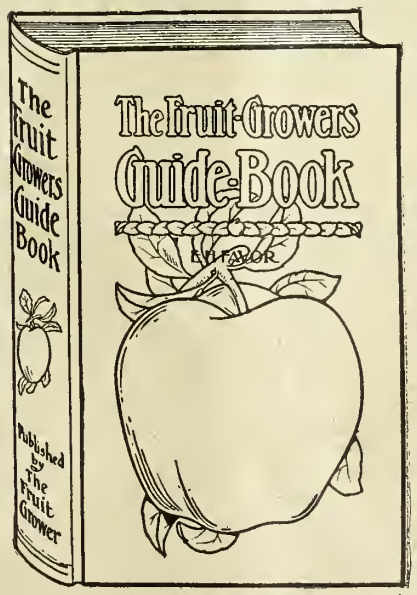
Write For FREE Color Card, catalogue and prices, or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to the Southern Illinois National Bank

CENTURY MFG. CO., Dept. 316 East St. Louis, Ills.

Every Fruit Grower Should Have This Great Book

Don't waste your time trying to solve problems which others have already figured out. You can learn very quickly what are the most approved methods of handling your orchard, fighting bugs, cultivating, pruning, packing and marketing your fruit, in The Fruit-Growers Guide-Book.

This handy reference book has already had a remarkably heavy sale, and is well recommended by all who have seen it. Here is what a few practical fruit men have to say about it.



Contains Many Useful Hints—I find The Fruit-Growers Guide-Book very valuable, as there are a great many useful hints and suggestions in it.—A. McAuley, Mgr. H. R. Edwards Fruit Farm, Ohio.

The Book He Needed—I am just in receipt of The Fruit-Growers Guide-Book. I have read a portion of it and find that it is exactly the book I have been in need of for a long time.—Leon D. Munger, "Munger's Star Orchard," Wash.

Gets Right to the Point—I think the Guide-Book gets right down to the point every time, and explains things so clearly that even a novice in fruit-growing can understand. The Guide-Book has made a lot of things clear to me that I have failed to find in the writings of other learned men.—Geo. W. Campbell, Texas.

What One of the Authors of "Fruit-Growing in Arid Regions" says—I have gone over this pretty thoroughly, and feel safe in saying it is one of the most reliable books that I have seen, written especially for the practical fruit grower.—O. B. Whipple, Horticulturist, Montana Exp. Sta.

If this book is helping others, it will surely help you, and when the above practical men recommend it, you may be assured that this book will be a good thing for you.

It contains nearly 300 pages of reading matter, which tells you what to do and how and when to do it. It is handsomely illustrated and printed on a good quality of book paper.

The price of this book, handsomely bound in golden-brown cloth, is $1.00, postpaid.

We can also furnish this book printed from same plates, but on a lighter paper and with paper binding, at 50c, postpaid.

Send in your remittance at once and secure a copy of The Fruit-Growers Guide-Book. Address

The Fruit-Grower, St. Joseph, Mo.

ARKANSAS SOCIETY MEET

Thirty-Second Annual Meeting Held at Eureka Springs Under Adverse Conditions

The thirty-second annual meeting of the Arkansas Horticultural Society was held at Eureka Springs on February 22 to 24, under climatic difficulties such as are rarely experienced. The heavy snowstorm of February 27 left the ground covered with a white blanket of silence that averaged over a foot in depth and put the railroads out of commission for three days. This delay by the storm made it impossible for as many to attend the meeting as expected, but about a hundred managed to reach the meeting place. All in attendance were unanimous in declaring this meeting to be the most interesting and helpful of any for several years past.

Eureka Springs is one of the most picturesque little cities in the Ozark region, and its splendid hotel facilities make it an ideal place to hold a convention, providing the climatic conditions are such that the city can be reached with ease and comfort. But the heavy snow this year not only made it difficult to reach the city but interrupted the arrangements for the sessions of the first day. As an entertainment feature a tallyho ride had been planned over the picturesque pine clad hills to the Elk Ranch, where a game dinner had been arranged. This unfortunately had to be abandoned, but the program for the second and third days were conducted at the Basin Park hotel as had been arranged.

The following are the officers for the coming year: President, Bert Johnson, Highland; first vice-president, P. A. Rogers, Gravette; second vice-president, M. F. H. Smeltzer, Van Buren; secretary, Ernest Walker, Fayetteville; treasurer, J. W. Vestal, Little Rock.

In speaking of the "Fertilizer Resources of the United States," Prof. R. C. Thompson said that as far back as 1905 there were four hundred fertilizer establishments in the United States, which were manufacturing commercial fertilizers. With the rapidly increasing demand for fertilizers there is a necessity for knowing where the future supplies are to be obtained, especially the supplies of potash and phosphorous. Nitrogen supplies are not of as great interest, because the most economical means of obtaining nitrogenous fertilizers is through the use of leguminous crops, whose roots harbor the bacteria which obtain nitrogen direct from the air.

Phosphatic fertilizers are obtained from natural deposits, important deposits of which are found in Arkansas. Other sources aside from the natural deposits of minerals rich in phosphorous are from bones of animals and from basic slag.

Up to the present time Germany has been the principal source of the potash supply of the world, and this material is imported into this country at the rate of one-third million tons per year. Among the investigations which have been conducted by the Department of Agriculture looking to a source of potash in this country is the kelp or sea weed beds that are found along the Northern Pacific coast. This kelp contains as much as thirty per cent potash, and with the development of economical means of obtaining the potash from kelp the importation of foreign potash can be practically stopped.

Miss Parsis S. Christian of Eureka Springs read an interesting paper on "Beautifying Home Surroundings," in which she emphasized the influence an attractive home had on influencing better conditions within the home, and in lifting higher the ideals and aspirations of the children. Cleanliness is strictly an essential to beauty.

G. A. Kunz, Fayetteville, told about "How I Make My Two-Acre Farm Help Out in Time of High Prices." The farm was a run down place when he got it, and had growing upon it 27 shade trees and 65 fruit trees, together with a seven-room house, a barn and two poultry yards. The place is now on a paying basis and provides all of the fruit and vegetables needed by the family throughout the year, together with some to sell. All of the manure from the stable and poultry houses is saved, together with all waste from the garden and the kitchen and applied to the soil as needed. Crops are grown between the rows of fruit trees. All vegetable plants for transplanting are grown upon the place, except the early cabbage, and these he finds he can buy cheaper than he can grow them. Mr. Kunz' paper was full of interest and closed with the humorous advice to "come to the country and be a whole trust yourself."

A paper on "Commercial Onion Growing," by Sam W. Severance, editor of The Market Growers' Journal, Louisville, Ky., was read by Prof. Hewitt. Mr. Severance said to not jump into commercial onion growing until the market had been located. There are three methods of growing onions commercially: by seeds, by sets and by transplanting. Seeds are sown in drills 12 to 14 inches apart, and thinned. Sets are planted in rows three feet apart, and transplanting is done from seedlings grown in hotbeds. This latter method is used principally by the onion growers of Texas, where the Bermuda variety is grown, and by market gardeners who grow the Prizetaker.

On the muck soils of the North a fertilizer rich in phosphorous and potash is needed. Upland soils are generally better than low lands, as it is usually freer from weed seeds. One valuable suggestion made was to not buy onion seed just because it is cheap. Plant from three and one-half to five pounds per acre and start harvesting when the roots let loose from the soil. Dry the bulbs for four or five days and crate. Cure in sheds.

Mr. F. J. Robb, Springdale, told in a very interesting way "Some Practical Facts About Stems, Roots and Leaves," and illustrated his remarks with charts showing portions of leaves highly magnified. His remarks made clear some of the reasons why fruit growers should spray whether their trees were carrying a crop of fruit or not. It is important that trees hold their foliage, as they are the organs in which the starch is built up for the support of the plant and the formation of the fruit and buds.

Prof. M. S. McCall, teacher of science in the W. H. Reid High School of Eureka Springs, made an interesting talk about how he is teaching "Agriculture and Horticulture in Our Public Schools," illustrating his remarks with some of the apparatus that is in daily use by his classes. Such efforts as are being made by Prof. McCall will result in a wider adoption of modern methods of farming among the coming generation in Arkansas.

"Spraying for Sound Fruit" was the title of a talk made by Prof. J. Lee Hewitt, of the Arkansas Experiment Station. Professor Hewitt told of the most effective ways of controlling many of the common orchard diseases and insects in Arkansas.

Among the other interesting papers which were presented was one by Henry N. Wild of Sarcoxie, Mo., on "Strawberry Culture," in which he urged growers to prepare their land a year ahead of the time they expected to set their plants. Professor Ernest Walker, of the Arkansas Experiment Station read a paper in which was given the names of all of the varieties of fruits of commercial importance which had originated in Arkansas. E. H. Favor, associate editor of The Fruit-Grower, St. Joseph, Mo., made some remarks about the marketing of fruit, especially in a year when there was a heavy crop throughout the country. He called attention to the value of good grading, good packing and of advertising.

One of the features of the meeting which aroused a great deal of interest, and bound those in attendance to closer union, as well as working for the betterment of the fruit interests of Arkansas, was a banquet served in the dining room of the Basin Park hotel at the closing session. Mr. A. S. Teasdale, Rogers, served as toastmaster, and practically all of the guests responded to toasts and pledged themselves to work even harder in the future for the upbuilding of horticulture in Arkansas.

All agreed that the meeting this year was the best the society has held for a number of years, and that the meeting to be held during the third week of January, 1913, in Fort Smith will be even better than this one.

Form New Association.

A shipping association has been organized at Hollister, Mo., under the name of the White River Fruit-Growers and Shippers' Association, with J. M. Watt, president; Wm. Gorsuch, vice-president; J. W. McGee, secretary. The association will handle the crop from 120 acres of grapes, 300 acres of orchards and a considerable acreage of small fruits.

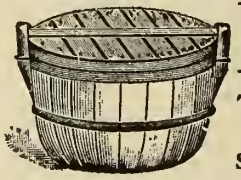
Get your neighbors to subscribe.

YOU'LL find that it always pays to use the best spray you can buy, when crop protection and crop profit are the stake.

Devoe sprays—Arsenate of Lead, Paris Green, Lime and Sulphur Solution—are made from scientific formulas, complying in every respect with Government requirements. They're pure, strong, effective; made to get results; they do.

When you order, ask for Devoe Sprays; the name is your guarantee of quality. If your dealer will not supply you, write us about it.

Devoe & Raynolds Co.
171 W. Randolph St., Chicago
New York Kansas City Denver
Largest makers of good paints for all purposes



Baskets Fruit Packages and Berry Boxes
TREE PROTECTORS A SPECIALTY
Address 146 Arsenal Street
St. Louis Basket & Box Company, St. Louis, Missouri

MYERS SPRAY PUMPS
ALL KINDS
NOZZLES, FITTINGS, ETC.

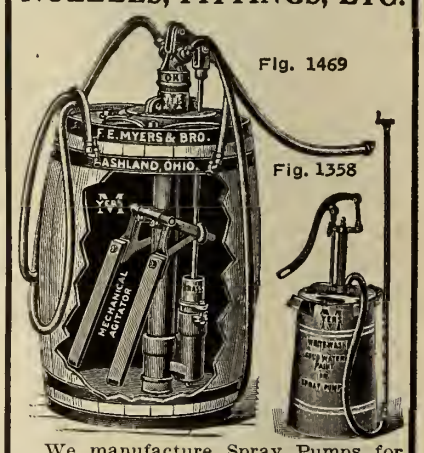
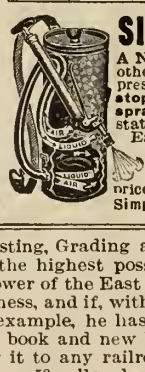


Fig. 1469
Fig. 1358

We manufacture Spray Pumps for every need, from the small hand and bucket pumps to the large power outfits. Send for catalogue and prices of Pumps, Hay Tools and Barn Door Hangers
F. E. MYERS & BRO.,
160 ORANGE ST., ASHLAND, OHIO

In writing advertisers please mention The Fruit-Grower.



SIMPLEX SPRAYERS.
A New Patented Sprayer different from others. Only one keeping up a high pressure, liquid always agitated. **No stopping to pump, done while you spray.** Recommended by experiment stations. Once tried will use no other. Easiest to operate, durable, saves time, labor and money; non-clog. For trees, potatoes, gardens, whitewashing, painting, etc. Lowest prices. Send for Spraying Guide.
Simplex Mfg. Co. Bx 901, St. Peter, Minn.

Spray Trees Now
—RIGHT AWAY BEFORE THE SAP STARTS UP—WITH
Target Brand Scale Destroyer

An oil that surely destroys San Jose and all other scales. Mixes instantly and perfectly with water. Spreads to every part of trees; penetrates into cracks in bark and will not crust and allow scale to breed underneath as do other brands.
If your dealer hasn't Target Brand Scale Destroyer, send us his name at once and let us mail you our interesting booklet.
HORTICULTURAL CHEMICAL CO.
PHILADELPHIA

In writing advertisers please mention The Fruit-Grower.

MODERN FRUIT METHODS

"Modern Methods of Harvesting, Grading and Packing Apples" is a book that should be in the hands of every orchardist who is desirous of getting the highest possible price for his apples. It illustrates and describes the Western methods of fruit packing. The fruit grower of the East is greatly indebted to his Western brother for showing him the great possibilities that lie in the fruit business, and if, with the great natural advantages of soil, rainfall and close proximity of market, he does not profit by this example, he has no one to blame but himself. A postal request to Dept "E" will bring you by return mail, free, the above book and new booklet, "Scalecide—the Tree-Saver." If your dealer cannot supply you with "Scalecide" we will deliver it to any railroad station in the United States east of the Mississippi and north of the Ohio rivers on receipt of the price. 50-gallon barrels, $25.00; 30-gallon barrels, $16.00; 10-gallon cans, $6.75; 5-gallon cans, $3.75. Address, B. G. Pratt Company, 50 Church Street, New York City.

H. J. WEBER & SONS NURSERY CO., WESTERN DISTRIBUTING AGENTS, NURSERY, MISSOURI

THE AUTO ON THE FARM

Ideal For Delivering Fruits—Cultivating the Orchard—Growing Fruit For Exhibition

We have had an auto for a couple of years, but we have not used it so very much. A fellow must learn how to use them, and this takes some time. Most fellows, however, when they purchase one usually see how many places they can go while their crops go to weeds. We got ours to save time and not to kill time, as I have told my friends. I have made up my mind that the farmer who buys a machine, should get one that from which the tonneau can be removed, and with a bed made so that it may be used for a truck. A farmer needs this sort of a machine more than he needs one for pleasure rides only.

The accompanying photo shows the writer just ready to make a quick delivery of fruit to the station, for shipment to the cold storage plant, and later used for exhibition purposes. Once this last fall we took to the cold storage plant, 25 miles away, 14 bushels of apples packed in boxes, and two passengers. The journey was over some pretty good sized hills too, and the entire trip consumed less than two hours time. We used the same machine to deliver peaches to our city customers last summer when it was too hot to drive the horse a round trip of twenty-five miles. The machine has the advantage over horses in that it does not need to be hitched when you make your deliveries. Somehow the people bought more liberally of me when in the machine than when I was in the horse drawn vehicle. I suppose their curiosity got the upper hand of them, however, that mattered little to me, so long as they were satisfied.

Yes, one has ups and downs with the auto. You blow up a tire, or the machine gets out of adjustment some way. All this you must learn. If you are inclined to be a machinist, this will not bother you, but if you are not, you will not have much business with an auto. I think we will get some solid tires for ours some day, so as to do away with blowouts.

The automobile enables the conveyance of perishable produce to the consumer in the shortest possible time.

Intercropping the Orchard.

From the time that the young orchard is set until it begins to bear, it is necessary that it have cultivation, if it is on ground that can be cultivated, if not it must be mulched, manured and cared for. In most cases we find that the young orchard through the Central West, is, or ought to be, set on ground that is level enough for some sort of cultivation. When land gets so high in price that we will have to take up the hillsides for orchards, we may have to use the mulch system. Be that as it may, the ordinary young orchard needs cultivation, and while cultivating, it is just as well to raise some other crop. In fact the secondary crops often pay for the land, outside of the work put on it. Therefore taking everything into consideration, we will say that it is important that we grow some secondary crop.

What this will be, you will have to decide for yourself. Potatoes form one of the paying secondary crops, also strawberries, tomatoes, tobacco, popcorn, and a number of other crops. Our experience leads in potatoes and tobacco as a secondary crop; cowpeas have also been tried with satisfaction. It is not a good policy to get the secondary crop too close to the trees, as it not only takes up the plant food that the trees should have, but makes possible damage by the implements of cultivation.

We find tobacco a very remunerative crop to grow, and it seems to put the soil in a fine condition for later crops also, though it must not be planted too close to the trees. We know that where a good market is close that the strawberry is a fine crop to grow in the young orchard. Currants and gooseberries might also be all right,

Where it does well, tobacco makes a paying secondary crop in an orchard.

but we have a decided objection to the planting of blackberries in the orchard, for they are too hard to get rid of.

In a young commercial orchard this coming spring we are going to plant oats as a nurse crop, then sow clover, leaving a strip four or five feet on each side of the row of young trees to cultivate, as the orchard site is poor soil and somewhat rolling. We figure that the strips of oats and clover will catch the wash from the cultivated strips, these cultivated strips will probably be sown to rye in August as a winter cover crop.

In another part of this orchard, which is new ground that we have cleared up, we are contemplating planting popcorn, but not too close to the trees. This will probably be followed with rye as a cover crop in August, then sown to clover next spring. Our idea is to gain fertility through the use of leguminous crops, at the same time giving the trees cultivation.

Indiana. OMAR R. ABRAHAM.

Strawberries Will Be Scarce in the East.

A letter from J. W. Jones & Son, Allen, Md., says that strawberry fields, as a rule, are in bad condition all through the East, and that not a large acreage of new fields will be set this spring. This means a short crop this season and next, if the condition is as has been claimed. Strawberries will likely bring good money this spring, for the drouth last summer decreased the acreage very materially. Those who set new fields this spring should also do well with the 1913 crop.

The CLEANEST CUT—BRIGHT, ATTRACTIVE—OUR

Western Soft Pine FRUIT BOXES

DON'T SPLIT, LIGHT, STRONG—Nail easy. Send on post card your name, address, kind and quantity wanted. Then we will send you sample of wood and prices, your station.

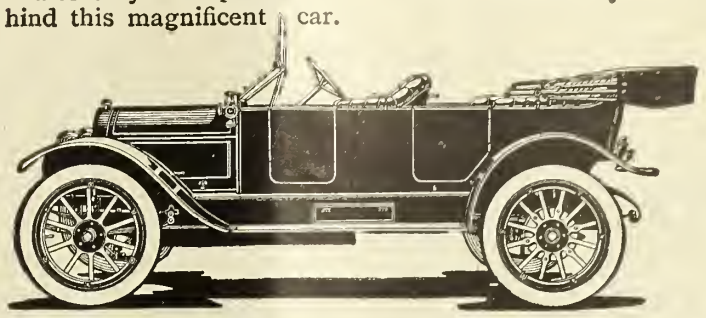
Washington Mill Company
SPOKANE, WASHINGTON

The Big, Self-Starting CASE 40

An Auto Your Wife Can Run

A woman can easily manage this great big, powerful car. The mechanism is simple in the extreme. A very little practice gives complete mastery of the ***Greater Case 40***—the largest, handsomest, high-grade, moderate-priced car on the market.

The 70-year reputation of J. I. Case machinery is behind this magnificent car.



"The Car With the Famous Engine"

The Greater Case Car is always ready to go. The engine always runs. It took 18 years to perfect this simple, reliable engine which makes the car supreme.

Case Nation-Wide Service

We have 10,000 Case Agents and 65 big Branch Houses scattered throughout the United States and Canada. Wherever you carry the Case Eagle you will find friends. Case agencies everywhere. No other automobile concern in the world can duplicate Case Service.

The Case "Eagle" Stands for Quality

This emblem on an automobile has the same significance as the STERLING MARK on silver. It stands for highest quality and guarantee that protects.

Splendid Special Features

Fore-door ventilation—36x4-in. tires — 120-in. wheel base—4½x5¼-in. cylinders—Rayfield carburetor—dual ignition—Timken full-floating axles—cellular type radiator—regulation trimmings — demountable rims—English mohair top with side curtains and dust hood—self-starter — high-grade wind-shield—12-in. acetylene gas head lamps—special design combination electric and oil side and tail lamps—storage battery for the electric lighting side and tail lamps—Prest-O-Lite tank for head lamps—one extra demountable rim—complete set of tools—jack and tire-repair kit—pump.

J. I. CASE T. M. CO., Inc., Dept. 52 Racine, Wis. (38)

Please send me at once your latest catalog describing

"The Car With the Famous Engine"

*NAME*_____

*TOWN*_____

*STATE*_____

BERRY BOXES FRUIT BOXES BASKETS AND CRATES

The package advertises and sells the fruit. Let us send you catalog showing the superiority of packages we are manufacturing. 30 years at it, we know the requirements, and we want you to know our prices. We make mixed shipments. Join your neighbors in carload lot shipments, and save freight. Prompt shipments at all times. Address nearest office.
The Pierce-Williams Co., 542 William St., South Haven, Mich., or Jonesboro, Ark.

APPLE BERRY **BOXES**

WESTERN WHITE PINE

Local shipments; carload lots. Place orders early.
F. A. CARRIER
Dwight Building Kansas City, Mo.

Save Money on Berry Boxes and Baskets

Fruit and Vegetable Packages and Growers' Supplies of all kinds. Write for free money-saving catalogue and price-list.

Largest Factory of its kind in the country.
NEW ALBANY BOX AND BASKET CO.,
Box 104 New Albany, Ind.

THE STRAWBERRY PATCH

Every Farm Should Have a Strawberry Patch If Only Large Enough For the Home Table

It should not be necessary to admonish every person who owns a tract of land, whether it be large or small, to possess a strawberry bed. However, the fact remains that there are yet too many people doing without this delightful fruit simply because they dread to make the start toward growing their own fruit.

One of the very best things that can be said in favor of the strawberry as a profitable crop, either for market or for home use, is that it never fails. Personally, I have never known a season when strawberries were not produced in a comparative abundance, if they get half a chance to grow. To

STRAWBERRY PLANT TRIMMED AND READY FOR SETTING.

the discouraged farmer and fruit grower in those districts where frost has been working havoc with all of the tree fruits lately, I would say "grow strawberries and you will not be disappointed in this fruit at least."

While there are special districts in Missouri which are now largely devoted to strawberry growing for market purposes, it by no means follows that this fruit will not thrive in other parts of the state; as a matter of fact, it will do well in each county and in practically every soil of each county, provided some trouble is taken to adapt conditions to its best growth. The strawberry demands a well-drained soil and only moderate fertility. However, it responds well to being grown on what is generally known as a fertile soil, and to good cultural methods.

In selecting the ground, if there is considerable choice of a site, a nearly level space or gentle slope would probably be best in order to afford good drainage. If the land is too steep the soil is liable to wash off. If hillsides must be used, run the rows around the hill, instead of up and down the slope. As to the actual features of the soil, ground that will produce an average crop of thirty to forty bushels of corn to the acre is considered fair berry land. Such land as this ought to produce 200 crates of berries per acre without fertilizer. Do not depend upon making the soil rich after the plants are set, but improve it by cropping with clover and cowpeas for two or three seasons in advance of the planting if possible. Some of the biggest yields I know of have been secured where berries were planted on the site of an old feeding lot. In such a location Mr. Dorrence, near Neosho, secured the following results:

Net income from one and one-fourth acres of berries	$673.64
For plants sold from one-fourth acre	124.00
Total net returns from one and one-half acres of ground for the season	$797.64

Preparing the Ground and Selecting the Plants.

Ground should be broken as soon as the crop that is to be followed by the berries is harvested, and, if stubble, either sown in peas to be turned under to enrich the ground, or cultivated sufficiently to keep any weeds from going to seed during the summer or fall. During the winter, or at least two or three weeks before time to set plants, as the ground is caught in right condition, rebreak very deeply, but don't harrow until time to set plants. If a rain comes before time to prepare the ground for receiving the plants it will be a great help, as it is very hard to get dry, loose-broken ground in right condition otherwise. When ready to set out plants, thoroughly pulverize the soil as deeply as possible. The deeper and finer the soil is worked, the better it will retain moisture, and the soil food will be rendered more available for feeding the plants. Use a roller or drag for packing the ground and making it smooth and level. A plank drag for the last working is preferable, as it fills up the horse tracks much better than a roller, and leaves the ground far smoother and more level. Never work the ground at any time while wet. Take great pains in preparing the soil for, like all other work in a strawberry field, it cannot be done too well for best results.

If one has grown his own plants, don't use anything but the very best, and only from new beds, the one-year rooted plants. If plants are bought, be careful in placing the order. Don't make the price the first consideration, but "am I getting what I ordered," is the most important. Be very careful in handling the plants not to get them mixed, so they can be properly harvested.

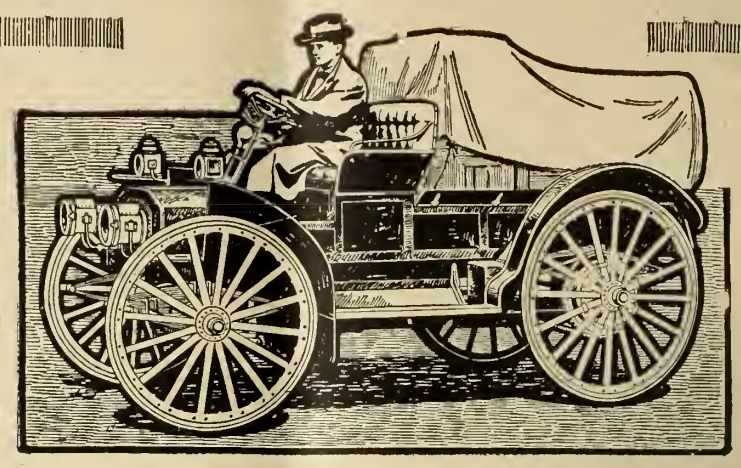
Selecting Varieties.

Mr. J. F. McNallie, Sarcoxie, Missouri, a man who has spent most of his life growing strawberries and strawberry plants, has the following to say on this subject: "The selection of varieties is a very important matter and should have serious consideration. It is possible that on this one question alone depends your success or failure

STRAWBERRY PLANT SET TOO HIGH.

in the strawberry business. If plants were being put out only for one year, it would be different, but generally a field can be fruited from three to five years, and that makes it more important. Productiveness and firmness are the essentials, but the most important essential is size. All fruit propagators have this idea now in view, and try to produce new varieties that have the size. You never hear of a grower sending berries to the market and receiving a poor price, because his fruit is large.

"There are locations where the earli-



Hours Are Dollars—Save Them

WITH an International auto wagon, you can do all your road work and light hauling in one-half the time, and at less cost than with horses. You can save hours in taking your produce to the market or railroad station—save hours in going to mill or creamery.

It Will Pay You

to keep your horses in the field and have an International auto wagon do your road work. It is always ready, winter or summer, rain or shine. Sand, steep hills, snow, and mud are no obstacles. It is built to meet these conditions, and it does. With the addition of an extra seat and top, the International auto wagon is converted into a comfortable and roomy pleasure vehicle.

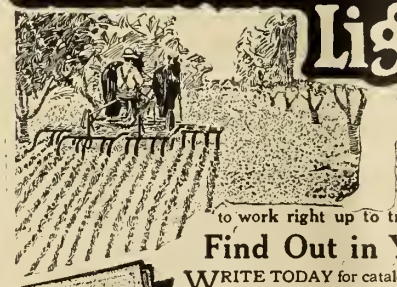
All we ask is an opportunity to show you that this car will make good—that it will haul your produce, and meet the road conditions in your section, no matter what they may be. A postal will bring catalogue and full information.

International Harvester Company of America
(Incorporated)
135 Harvester Building Chicago U S A

IHC Service Bureau

The purpose of this Bureau is to furnish, free of charge to all, the best information obtainable on better farming. If you have any worthy questions concerning soils, crops, land drainage, irrigation, fertilizer, etc., make your inquiries specific and send them to I H C Service Bureau, Harvester Building, Chicago, U. S. A.

Find Out About the Forkner Light-Draft Harrow!



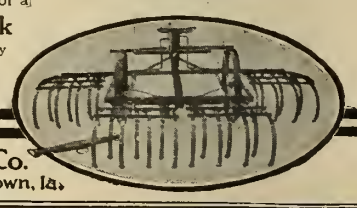
THIS low-priced harrow for orchards and vineyards—and general use—is a world-beater. Wonderfully light of draft—weight carried on wheels, not on horses' necks. Great worker—20 to 30 acres a day with one team—and every inch of soil **cultivated thoroughly—lifted and turned in long wavy level.** Best of all—it hangs low and has great extension—making it a snap to work right up to trees without horse or driver disturbing boughs or fruit.

Find Out in Your Orchard—At Our Risk!

WRITE TODAY for catalog and 30 day trial offer. Pick the machine suited to your soil and orchard and use it for a month—and send it back if you don't find it the finest cultivator made.

Send for This Free Book

"Modern Orchard Tillage"—written by highly successful orchardist—contains information that may be worth hundreds of dollars to you. Sent for the asking.



Light Draft Harrow Co.
907 E. Nevada St. Marshalltown, Ia.

Elkhart Vehicles and Harness

have a world-wide reputation for high quality and our prices have made them famous.

THIRTY-NINE YEARS'

experience selling to the consumer means success. We ship for examination, guaranteeing safe delivery, satisfaction and to save you money.

Catalog shows all styles of pleasure vehicles and harness, pony vehicles and harness, spring wagons, delivery wagons and harness.

May we send you large catalog?

We also make the "Pratt-Forty" Automobile.

Elkhart Carriage & Harness Mfg. Company
Elkhart, Indiana

Save $25

$29.50 Buys This Elegant Top Buggy.

WARRANTED FOR Five Years.

Retail Price $60.00. Buggies, Surreys, Spring Wagons, Farm Wagons. We have cut out our Jobbers, our Wholesalers and our Retailers and offer YOU their profit. Write today for our

Free Catalog and Delivered Prices.

Mutual Carriage & Harness Mfg. Co.
Station 35 J East St. Louis, Ill.

est, others where the medium, and others where the late berries pay the best, owing to competition. If growing for the home, or a nearby market, select some of the standard varieties, consisting of early, medium and late in ripening season. Some seasons the earlier and others the late berries bring the best prices, owing to the weather conditions and the demand. In this way one can extend the season and have three chances if there should happen to be unseasonable frosts or unfavorable weather conditions. Where berries are grown for the large commercial markets, one will have to be governed by what others grow, and what the markets demand. When Missouri strawberries are ripening, St. Louis demands the Bubach principally, and that variety is planted largely in that district. Kansas City and the Northern markets require the

STRAWBERRY PLANT SET TOO DEEP.

Aroma, with Gandy, Dunlap, Warfield and Haverland following in the order named, while in Northern Missouri, Warfield and Dunlap are the most largely planted. The variety Aroma is planted more extensively in Southwest Missouri than any other. It has the size and is the most productive of any large sized variety."

When to Plant.

Most people set the strawberry plants too late in the spring. It should be remembered that this is a cool-season plant and therefore it will begin growing in the spring when the soil is yet quite cold. To secure a good strong root growth, it is necessary to get the plants in the ground early, so that they can make the desired growth before warm weather sets in. In order to get the plants in early enough, it will be necessary to turn the soil over, allowing it to "weather" during the winter in that condition; any vegetation which may have been turned under will become mixed with the soil, and will decay quickly when summer comes. Such a soil as this can be worked very early in the spring with a disc or tooth-harrow. The soil should be made very fine by frequent harrowings or cuttings with the disc. If it has been necessary to break the ground in the spring, then it will need to be rolled with a heavy roller in addition to being harrowed repeatedly.

It will not make any serious difference if plants are set so early in the spring that they get caught by freezing weather. A freeze that does not actually lift the plants out of the ground and expose the roots to the air will not injure them. After a strawberry has been rightly set and has started to grow it is not easily killed unless some insect destroys it. In Southern Missouri from the middle to the last of March is the best season for setting plants, and in the northern part of the state, from one to three weeks later. It should be remembered that after May 1st strawberry plants should not be transplanted.

Plants may be set in early fall. In this way one season is saved, as such plants will make good enough growth to fruit the following summer, if there are abundant fall rains. Spring-set plants should not be allowed to fruit that year; all blossoms should be pinched off.

Pollination.

It is a well-known fact that some varieties of strawberries have imperfect flowers; that is, the flowers do not produce pollen in addition to the part called the pistil, which receives the pollen through the process of fertilization. A perfect flower will possess quite a number of pistils and a great mass of stamens. These stamens produce the fine dust which we call pollen. This pollen is carried by wind or by insects and deposited upon the pistil before fruit can be produced. To insure perfect pollination we ought to be careful in setting our plants to see that at least every fourth row is a row of some variety that is known to produce pollen in abundance. By consulting the catalogue when the plants are ordered, it will be easy to determine which varieties are perfect flowers, as they will be labeled "S" (meaning staminate or perfect stamens) or "P" (meaning pistillate or imperfect flowers).

Planting and Cultivation.

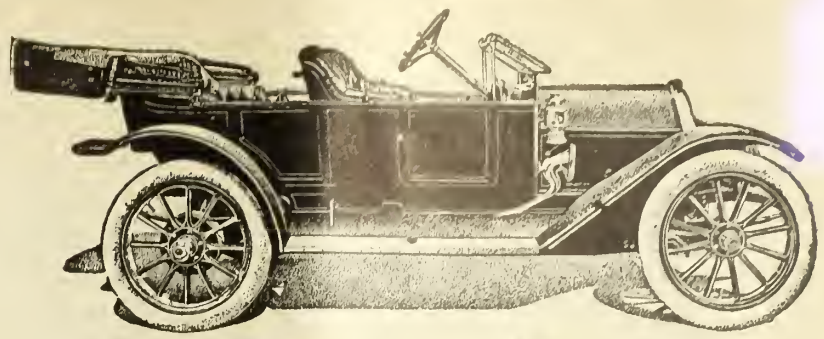
If the ground is in perfect condition and the rows laid off perfectly straight and about four feet apart, the planting can be easily and quickly done with a spade. Force this into the ground, push it over to one side, spread the roots of the plant to a fan shape by a jerk of the hand and then withdraw the spade and allow the earth to fall upward and cover the root system up to the crown, then stamp upon the earth on two sides of the plant and press down firmly. See that the part of the plant from which the leaves arise is just at the top of the ground. They must not be too deep nor too shallow. Plants with long roots may have to be trimmed slightly. All of the leaves but about two or three ought to be pulled off.

Cultivate as soon as possible after the setting; the same day, if possible. Frequent cultivating should be the rule; if the ground is inclined to bake, it should be stirred slightly after each rain. Shallow, level cultivation is the best. If the plants are in perfectly straight rows, most of the work can be done with a horse cultivator, but some harrowing may need to be done. If plants are set two or three feet apart in the rows at regular intervals, they may be cultivated in both directions until runners begin to form.

During the winter if the ground is frozen hard it is a splendid thing to mulch the berries four to six inches deep with clean wheat straw. Straw containing chaff which is sure to bear wheat, grass and weed seeds is very, very bad for mulching, as even wheat is an exceedingly bad weed in a strawberry field. Timothy hay is the very

STRAWBERRY PLANT SET JUST RIGHT.

worst material on account of seeding the ground. Prairie hay is good. Sorghum cane is too coarse and should not be used immediately over the plants; it might be spread between the rows and straw piled over the plants. In the Southern part of the state, mulching will not be necessary to protect the plants through the winter, but it is worth all the cost as a protection to the fruit in the spring to keep it from touching the ground and being soiled by coming in contact with the ground. Every shower of rain



You Know the Man That Builds This Great Car—

Harry B. Staver, president of the Staver Carriage Company, is one of the best known big men of business in the middle West. Thousands of farmers exchange handshakes and call him "Harry."

And the product of his big factory is even better known. For 33 years this establishment has been turning out the very finest carriages made in America. The name "STAVER" has come to mean *highest quality*, from the Atlantic to the Pacific.

6 models 35 H. P. and 40 H. P. **STAVER** $1650 to $2250

CHICAGO

This 33-year-old STAVER reputation is worth *millions*. Do you suppose that we would *dare* to put the STAVER name on an automobile unless we *knew* that it was worthy of carrying it?

It's more than a question of business honesty—more than keeping faith with our friends—*it's a matter of life and death with us.*

A car that could not take a place *ahead* of other cars would damage our reputation beyond repair. We did not dare to make the STAVER just a *good* car—*it had to be the best.* It took us five solid years in experimenting and testing before we were *sure.* We had to spend money without limit—but it was worth while. We *know* that the *STAVER* is perfect.

A postal or letter will bring you a copy of the "Transcontinental Route Book" containing the thrilling story of the blazing of the Transcontinental Roadway by the STAVER—also the new Staver catalog and full information about car buying.

Staver Carriage Co.
Dept. 4534
76th & Wallace Sts. Chicago, Ill. (84)

Isn't it better to let your tools do the drudging rather than you? Isn't it commonsense for a farmer or gardener to work with tools that do the work of 3 to 6 men—do it better and get bigger crops?

Planet Jr

Two million farmers using Planet Jrs the world over testify that they save drudging. A practical farmer and manufacturer with over 35 years' experience makes them.

No. 10 **Planet Jr Horse Hoe, Cultivator and Hiller** is new and already a favorite. Finishes, at one passage, rows up to 3½ feet apart even if they vary in width. Capital level cultivator, hiller, plow, furrower. Can be fitted with vine-turner attachment.

No. 2 **Planet Jr Single Wheel Disc Hoe, Cultivator, and Plow** gives universal satisfaction, especially in peat lands. Has steel frame, carries 3 discs on each side, pair of efficient 3-prong teeth, plow, and leaf lifter.

FREE! A 64-page illustrated farm and garden book!
It's yours for the asking! And it contains 64 pages of invaluable cultivation advice. You can't afford to miss it!
Send postal for it today!

S L Allen & Co
Box 1107C Philadelphia Pa

SWIFT'S ARSENATE OF LEAD
HIGHEST QUALITY
Insect Pest Destroyer!

Easy to mix—sure to kill. Death to all leaf-eating insects. Save your trees, fruits and vegetables. Put up in paste or dry form.
(Conforms to the National Insecticide Act of 1910.)

Be Sure and Ask for SWIFT'S
and thus always secure GUARANTEED HIGHEST QUALITY.
FOR SALE BY LEADING DEALERS EVERYWHERE
MERRIMAC CHEMICAL CO.
Send for Circular. 49 Broad Street, Boston, Mass.

Sulphur, Nitrate of Soda
Blue Vitriol

If you make your own Lime and Sulphur Solution, write us for prices on sulphur. We carry large stock in barrels and sacks. Ours is the best and cheapest brand for making solution. Goes into solution readily and stays in solution. We also carry large stock of best Nitrate of Soda in 200-pound sacks, ready for shipment. You can save money and get prompt service by dealing with us.

Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

would be likely to spatter the fruit with dirt if the berries are upon the ground. In the strawberry districts of the southwestern part of the state, mulching is done by using a manure spreader. This was found to be a great labor-saving device.

Cost and Profit.

On this subject Mr. McNallie says: "The average cost of growing an acre of strawberries during a normal season is $50. In a very favorable season this cost might be lessened as much as $10, while during an extremely wet season, or on very foul ground, it might be increased the same amount. In this estimate we do not take into consideration the use of commercial fertilizers or any expense of enriching the ground.

"For illustration we give the following approximate figures as to the cost per acre up to harvesting time:

Rent for one acre	$ 5.00
Plowing and preparing ground	2.50
5,000 plants, standard varieties	15.00
Expense setting plants	5.00
Cultivating fifteen times	7.50
Hoeing, three to four times	10.00
Mulch and spreading same	5.00
Total	$50.00

"The profits per acre is a question that is difficult to answer, as the amount received for the crop will be governed by the varieties grown, the yield, closeness to market, and the manner of grading and packing. On soil that will produce thirty to forty bushels of corn per acre, without the use of any fertilizer, the average minimum yield of strawberries will be 100 twenty-four-quart crates; and the average maximum yield 200 twenty-four-quart crates. In a favorable season, and where the bed has been given proper culture, the maximum yield is often exceeded.

"The price received depends mostly on the supply and the quality of the fruit, generally varying from 6¼ cents to 12½ cents per quart. Taking 8⅓ cents as a comparative average price per quart throughout the season, the gross returns per acre of a 100-crate yield will be $200; of a 200-crate yield $400. Deducting the expense of picking, 1½ cents per quart, and the cost of crate, 14 cents, or a total of 50 cents per crate, the net returns will be from $150 on the minimum yield to $300 on the maximum yield. From these net returns charging the average expense of $50 for growing one acre, the profit will be from $100 to $250 per acre." W. L. HOWARD.

Mo. Exp. Sta.

What About the Himalaya Berry?

Among the newer kinds of berries which are being tried by amateur and commercial growers, the Himalaya is one to which a great amount of attention is being drawn. In some parts of the country, particularly the Pacific Coast and Gulf States this berry is of commercial importance, but its hardiness for the Central and Northern locations has been questioned.

Prof. A. T. Erwin of the Iowa Experiment Station, in a recent Press Bulletin says that "In response to numerous inquiries, the Horticultural Section of the Iowa Experiment Station submits the following information regarding the value of the Himalaya berry for Iowa conditions: This plant is of Asiatic origin and seems to have been introduced by Mr. Luther Burbank of California, in the early nineties, the seed being received by him from an English traveler, who reported that it had come from the Himalaya Mountains. The vine is of the general type of the evergreen blackberries and of a trailing habit of growth, like the dewberry. The vine is a perennial, but heavily thorned. It is a strong grower, making from fifteen to twenty feet of growth on a single branch in one season and continuing to grow until cold weather.

"Where hardy it is reported as being quite productive. The fruit begins to ripen late in summer and gradually matures during a long period. As fruited in this section, the berries are medium, or below medium in size, decidedly tart, unless dead ripe, and with a more tender core than is found in most blackberries. The quality of the fruit is fair, though it has not a delicate flavor. Its texture is firm and on the Pacific Coast it is reported as being a good shipper.

The one paramount question to the Iowa planter is hardiness. The Himalaya berry being of the evergreen class continues to grow until late in the season and does not ripen up its wood properly for winter. In our investigations we have had numerous reports from this and adjoining states that it winter-kills badly, in some sections killing back to the ground. Whatever its value may be for other sections, the evidence so far available points strongly to its being not sufficiently hardy for Iowa and until more conclusive evidence to the contrary is available the Iowa grower is advised to restrict his planting to experimental purposes."

Among the reports from persons who are growing the Himalaya berry Prof. Erwin gives the following:

Washington County, Iowa. — "The Himalaya berry kills back within a few inches of the ground where not protected. We think that it is not hardy in this part of the State."

Bremer County, Iowa.—"Have had the Himalaya berry for the past three years. The plants came to me from California and were recommended as perfectly hardy, but it proves to be too tender to live through freezing weather. Have tried light and heavy covering with earth but have not saved the wood over winter. Have had a few fruits late in the fall that resembled dewberry but they have not matured. The Himalaya berry is too tender to be be of any value here."

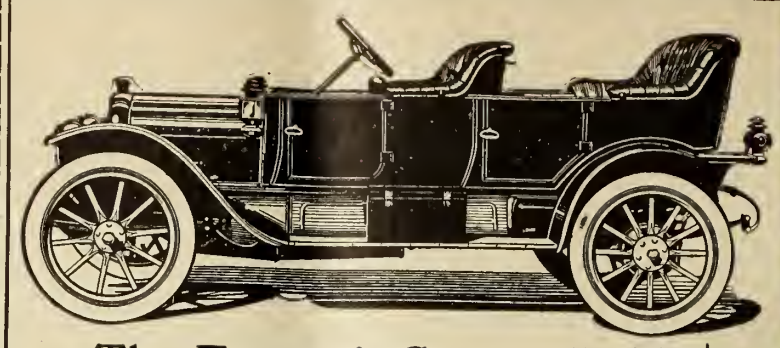
Johnson County, Neb.—"I secured three hundred plants of the Himalaya berry in 1907. My three hundred plants have not produced three hundred quarts in the five years I have been growing them. Although they do well on the Western slope, the berry is not equal to any of our blackberries. I consider it a rank failure for this section."

New York Experiment Station, Geneva, N. Y.—"Plants of a blackberry under the name Himalaya (Himalaya Giant, syn.) were received at this Station through the Department of Agriculture, Washington, D. C., early in 1906. Some winter injury was observed in the winter of 1907 and the spring of 1908; 75 per cent or more injury to the canes. The growth during the following season of 1908 was very rank and rampant. Some bloom developed that year and the plants appeared to be productive. In November the canes were removed from the trellis and given winter protection. In 1909 the plants developed in good shape. The crop, however, was not large. The berries ripen during a long season. The fruit was of good size and color but was not equal in flavor and quality to several of the best standard commercial blackberries with which they are compared."

From these reports it would seem that there is some doubt about the hardiness of this berry in those sections where the winters are severe, but the berry is doubtless a good one, where it is hardy. As this is a new kind of berry and is being tried in a great many parts of the country The Fruit-Grower wants to hear from every one who is growing it and learn more about its hardiness, fruitfulness and how it is liked as a commercial fruit.

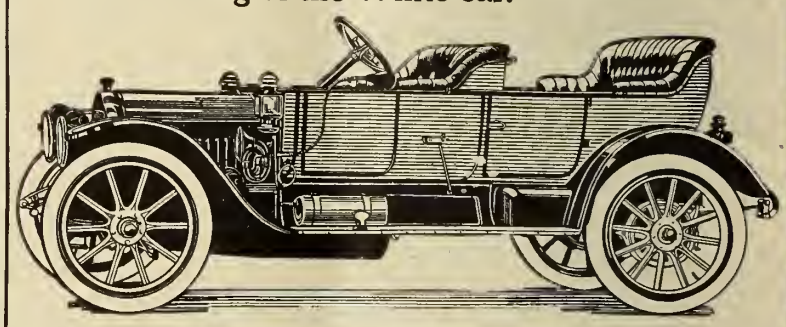
Tell us on a postal card what you think of this berry, in case you have tried it. Is it hardy? Is it a better berry than the well known varieties of blackberry or dewberry? Let us have a "round-up" of experience with this new fruit for mutual benefit. The only way in which information of this sort can be obtained is for every one who has had experience to contribute his mite of information. So come on, friends, write your experience on a postal card and send it to The Fruit-Grower, so that we may all know of the good and the bad qualities of this new fruit.

European fruit dealers who imported American apples this season are said to have lost heavily because the fruit did not keep well.



The Farmer's Car—A White

THERE are certain fundamental advantages which the farmer demands of a motor car before he is interested to the point of buying. Probably no class of men are more critical of the mechanical principles involved than the farmers, because of their constant operation of farm machinery. To them—the simplicity of White motors—the total absence of complicated parts—appeals at once. They know it means that the engine is easy to care for—that adjustments are made without any waste of time or energy. Trained to value mechanical excellence as well as economy in operation, farmers are quick to grasp the possibilities of the medium-sized cylinders and the long-stroke engine of the White car—quick to see the economy in a transmission having four forward speeds instead of three. In other words, the farmers are better equipped by their experience to appreciate the designing and building of the White car.



A Farmer Wants the Best

BEING a judge of principles and construction, a farmer is willing to pay for the car that comes up to his expectation. Size for size, or power for power, the White gasoline cars are the most economical motors to operate. No design has yet been found equal to the long-stroke engine—no method of building equal to the cast en bloc cylinders—no materials used equal to the chrome-nickel steels and vanadium steels, heat-treated. Even the frames of the White cars are heat-treated. Nothing but ball-bearings are used throughout. If there is a kind of steel—kind of radiator—any refinement of manufacture—which you know would make a car better, you will find it in the White, and that is why the White gasoline cars are so wonderfully efficient and cost so little to operate and maintain.

Let us send you our latest catalogue and testimonials of the actual experience of users—hundreds of them—they know.

The White Company

East 79th Street, Cleveland

A MONTH'S FREE TRIAL.

Send us your name and address. We will send you postpaid a Vulcan Razor. Shave with it for 30 days. If at the end of that time you're satisfied that it's the best razor you ever put to your face send us $1.75. If not, just send back the razor and there will be no charge. But you can't help liking this fine English crucible steel, oven tempered and bevel edge razor because it's made right—tempered right—ground right—sold right. State whether you want round or square point; wide, medium or narrow blade; whether your beard is stiff, medium or soft and how often you shave. Isn't it worth writing to find a razor that just suits your beard?

Complete Cutlery Catalog Sent Free. U. S. CUTLERY CO. Dept. 28 St. Louis, Mo.

ASPINWALL SPRAYERS

Machines to meet every requirement. Everything from Hand Sprayers to 200-gallon capacity Power Machine. Write for Sprayer catalog with valuable formulas for Spray Mixtures. ASPINWALL MFG. CO., 325 Sabin St., Jackson, Mich.

World's Oldest and Largest Makers of Potato Machinery

No-Rim-Cut Tires—10% Oversize

Touch the Million Mark

This month we celebrate.

A million Goodyear Auto Tires have now gone into use.

Over half that number have been used within the past 12 months. Yet this is our 13th year.

Think what that means. More used this last year than in 12 years altogether.

Just because No-Rim-Cut tires—our patented type—suddenly became the sensation.

A few men proved them out. Then thousands proved them—then tens of thousands more.

Now a million tires. Now a trebled demand over last year. Now a larger sale than any other tire commands.

200,000 Users—127 Makers Adopt Them

No-Rim-Cut tires have been tested, probably, on 200,000 cars. And this flood-like demand is the result of that testing.

For the year 1912, 127 leading motor car makers have contracted for Goodyear tires.

That means the reign of a new-type tire—a tire that cuts tire bills in two.

It means that men who know, want tires that can't rim-cut. They want oversize tires, to save the blow-outs due to overloading.

They want hookless tires. And they want tires which embody the final results of 13 years spent in perfecting them.

They get all these features in No-Rim-Cut tires. Yet they cost no more than other standard tires.

So these 200,000 demand these tires, as you will when you know.

Old-Type Tires

The old-type tires which No-Rim-Cuts are displacing are known as clincher tires.

They have hooks on the base, which hook into the rim flange.

When the tire is not kept fully inflated, or run flat, the rim flanges cut it. Such tires are often ruined in a single block.

No-Rim-Cut tires have no hooks on the base. Yet they fit any standard rim. These tires make rim-cutting forever impossible, as a glance at the tires will show you.

And they are twice as easy to detach as old-type clincher tires.

Average Saving 48 Per Cent

Statistics show that 23 per cent of all ruined clincher tires are rim-cut.

No-Rim-Cut tires forever end that worry and expense.

Then No-Rim-Cut tires are 10 per cent over the rated size. That means 10 per cent more air—10 per cent greater carrying capacity. And that, with the average car, adds 25 per cent to the tire mileage.

Thus we figure 48 per cent. It varies, of course, with proper use or abuse. Your cost for tire upkeep depends somewhat on you.

But this saving of rim cutting, plus the added size, will cut the average tire upkeep in two. And tens of thousands have proved it.

No Extra Price

No-Rim-Cut tires now cost no more than other standard tires. They used to cost one-fifth extra.

Think what that means.

Tires which can't rim-cut cost the same as tires that do. Oversize tires cost the same as skimpy tires.

You are offered your choice at an equal price. Which tire will you take?

We Control Them

We control by patents the only way to make a practical tire of this new type.

Three flat bands of 126 braided wires are vulcanized into the tire base.

Other devices are employed to make a hookless tire, but in use they have proved very unsatisfactory.

That is why the demand for this new-type tire has centered on Goodyear No-Rim-Cut tires.

When you change from the old type—as you will—do not adopt an experiment. Get the tire of which one million have been tested out.

No-Rim-Cut tires, in these days of tire wisdom, far outsell all others. Get these tires.

GOODYEAR

No-Rim-Cut Tires

With or Without Non-Skid Treads

Our 1912 Tire Book—based on 13 years spent in tire making—is filled with facts you should know. Ask us to mail it to you.

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

Branches and Agencies in 103 Principal Cities
Main Canadian Office, Toronto, Ont.

We Make All Kinds of Rubber Tires, Tire Accessories and Repair Outfits
Canadian Factory, Bowmanville, Ont.

(568)

FROM A MISSOURI FARM

Our season begins with asparagus, April 10th, and our half acre produces about $50 worth during the season. It takes one man about two hours each evening to do the cutting, tying into bunches for market the next morning. We find this crop to be quite easy to care for, and ten loads of stable manure each year keeps it in a thrifty condition. The cutting season for it extends to the latter part of May when strawberry harvest begins. Of these I have three acres, made up of Warfield and Dunlap for early, and Aroma ten days later. These three varieties are the best standbys I have tried out of some twenty varieties.

The double hedge row system is my favorite and enables the plants to produce fine berries. Last year they produced about $1,000 on the three acres. Before the strawberry is over its best the cherry is ready with its tempting fruit, the Early Richmond coming first with Suda Hardy and Montmorency to follow. Thirty trees will produce about $100 annually. Then gooseberries are ready with their loads of fruit. Women and girls pick these when the strawberries are declining. The gooseberry is a staple on the market and sells readily at 30 cents per gallon, and I am never able to supply the demand.

Next comes the raspberries, a staple crop on the market and one that could be better supplied if the growers would take more time with them. I grow the Cumberland, which I find the best, although it is troubled with anthracnose. I control this by spraying with bordeaux. If the canes are badly affected it is necessary to apply as many as five times in succession to clean the vines, beginning early in March and continuing till bloom begins. I use the strength of seven pounds to fifty gallons. In spraying raspberries or blackberries before the foliage is out I spray against the breeze to save time and material, and yet cover every part of the canes.

Support the Canes.

In growing raspberries I find it best to grow them between two No. 12 wires placed 18 to 20 inches apart. These are attached to stakes set in the row and about 40 feet apart, with the wires nailed to cross pieces made of two-by-four. I place cross wires between these side wires to keep the canes from getting down lengthwise. These crosswires can be of No. 16, cut 24 inches long. They are given a twist at the ends and tapped with a hammer to clamp them on the side-wires and keep from slipping. This may look like a lot of work but when it is considered that a raspberry plantation is good for ten years, it will pay. I sell $300 worth of berries per acre.

About July 1st the blackberry is ready. I have the rows eight feet apart and cultivate so as to keep down all suckers from the middles and confine the canes to the rows. This makes it easier to pick the fruit, and no berries will be hidden under a dense thicket. The young canes which come up in the row I pinch at a height of thirty inches so that they will make laterals for next year's fruit and also to keep them from getting top heavy. For a crop of good marketable berries, all laterals more than a foot in length are cut back in March. I have one and one-half acres of the Illinois. They are fine and usually yield $300 per acre. The orange rust and anthracnose usually give some trouble, but spraying in the same way as for the raspberries, holds the disease in check.

The season of 1911 resulted in a total failure of blackberries, but since then I have had a 125-foot well sunk to furnish water for irrigation should another dry spell come. My ground is all tile drained, with laterals fifty feet apart and connected by sub-mains, and I intend to use this tile to sub-irrigate with, when necessary, and the possibilities look ideal.

At the close of the blackberry season, about August 15th, Moore's Early grape comes in with its large bunches of fruit. Here in north Missouri this variety grows so large that some people doubt if they really are grapes. Of course, proper pruning and cultivation is important for these results. The grape should be fully ripe before put on the market. I find that with early grapes some people are in a hurry and offer unripe fruit for sale, thereby ruining the market. With me, Worden comes next. It has a fine, delicious flavor and its only fault is that it is quite soft, so that a home market is necessary.

The Concord is a fine grape for late season, and although the bunches are not so large the vines out-yield most other varieties. I think it takes less work to grow grapes than some other fruit, but they fail more often than some other fruit, the late spring frosts being nearly always fatal. Here in North Missouri where the peach crop is often a failure the grape makes an especially good crop, as it comes in about the peach season.

The last crop of the season is apples, and it remains with us longer than all of the rest put together, from October to May. The many different varieties in their season, such as Mother, Maiden Blush, etc. These varieties will supply the demand well into October, when "Brother" Jonathan smiles on us and inquiries come for him—it is difficult to sell other varieties while such a tempting red apple is offered. Later I find the much abused Ben Davis to take the lead, since the more abundant supply offers lower prices. This is truly the common people's apple.

About Christmas time the Rome Beauty is a fine seller. Even the farmer who has some of his own wormy and unattractive apples at home is tempted to buy some. This is surely evidence that spraying is the only way to insure good, attractive fruit.

Missouri. J. J. FELDMAN.

STRAWBERRY AND CHERRY HARVEST ON THE EDEN FRUIT FARM.

DAIRY AND FRUIT FARM

A Dairy-Fruit-Hog-Poultry Combination That Proved Profitable in Arkansas

Building up the soil so that it will produce heavier crops is a comparatively new idea and one that is receiving wider application as time goes by. It is true that the value of manures as stimulators of crops has been appreciated for ages, but when it comes to the value of systematic management for the puropse of building up the soil, it is the result of studies which have been made within the life of the present generation. Had our forefathers appreciated the possibilities of building up the fertility of the soil as fully as we are beginning to appreciate it, there would be few acres of land in the eastern half of the United States that would now be known as "abandoned farms."

This idea of increasing the fertility of the soils is a matter of education. The agricultural colleges are fostering it. The farm papers are fostering it. Railroads, bankers, merchants and those manufacturers who draw their raw materials from the farm, are working in close co-operation with the institute lecturers of the agricultural colleges to foster education of the tiller of the soil along the line of saving the natural fertility of his land, and then adding to it through the proper rotation of crops and the addition of such materials as may be lacking.

A PART OF THE JERSEY HERD OF MR. PORTER.

Ninety Bushels of Corn.

It was our pleasure recently to have the opportunity of visiting the farm of a man who has applied to his own land some of the modern principles of increasing the fertility of the soil, while at the same time, obtaining a crop. This was the farm of Mr. H. C. Porter, in Washington County, Arkansas. Mr. Porter has forty acres of land. He has lived on the place for twelve years and has increased the fertility of his land so that acres which were producing thirty bushels of corn at the time he began, turned off a crop of ninety bushels last year. In fact the yield would have run well over a hundred bushels per acre last year, Mr. Porter told me, had it not been for a storm and high wind in early summer which blew down the plants, and tangled them so badly that it was impossible to give them the cultivation they needed during the dry period late in the season. But ninety bushels of corn is a record far above that which his neighbors are getting, and even neighbors who are regarded as good farmers.

How did he do it? Misfortune has made it impossible for Mr. Porter to do physical work like the average man, and he has been compelled to exercise his brain in devising ways for getting the heaviest yield from his land with the minimum labor. Located as he is, near the Agricultural College of Arkansas, Mr. Porter says that he availed himself of all of the information which could be provided through that source in the way of ideas that would be of help to him. He knew it would be to his advantage to farm as modern science approved rather than as his neighbors advised, and so called frequently at the college for help.

Since he had bought his farm on credit, and had little of this world's goods to farm with, it was up to him to make every hour of labor count the most. He now has the most productive farm in the county, if not in the state; a fine herd of grade and registered Jersey cattle; a drove of registered Duroc-Jersey hogs and pure bred white leghorn hens, together with a twenty-acre apple orchard in as fine condition as any in the state. His two sons, Lee and Otis, have been educated in the Agricultural College of Arkansas, and his farm is increasing in productiveness each year.

Started With Two Cows.

The Jersey cow has been the key to the problem. Mr. Porter recognized the fact that soil was poor. It had been "corned" to death before he got it, and had grown up with a tangle of brush, so that there was but little cleared land when he began his operations. He started with two grade Jersey cows. Every bit of manure made by these cows was spread on the soil. Crops were given intensive cultivation, and nothing was disposed of that would carry anything more than the minimun of the elements which went to make a fertile soil. This meant that he could sell nothing but butter and eggs, and these have been the principal items for sale from the Porter farm. Today Mr. Porter is milking fourteen Jersey cows two of which are registered, and sells his butter at thirty and thirty-five cents per pound during seven months of the year.

Dairying has been the leading feature with Mr. Porter, but it is not his intention to make it an absolute specialty, as one-half the acreage of his farm has been planted to apples, and fruit will necessarily come in for a big share of attention in future years, as the orchard has now reached bearing age. But just now the dairy is given the most of the attention of Mr. Porter and his son, Otis.

Since twenty acres of the farm are occupied by the orchard and three acres by the lawn, barn and hog yards, it leaves barely seventeen acres to supply the feed for twenty head of cattle, four horses, some calves, a big

Electric

The Only Wagon for Fruit Growers

There's a handiness and convenience about it that's impossible in high-wheeled wagons.

Why lift filled boxes, barrels, baskets and crates high into the air, only to lift them down again?

Get the Handy Wagon Habit

The low down Electric Handy Wagon is great for small fruit growers, great in the orchard. You can drive under trees where limbs are low without knocking the fruit off. Drive around and into places you can't go with high wagons. Saves half the hard work at spraying time, at fertilizing, in hauling trash, etc.

Broad tires do not cut into and rut soft ground. Make draft light. Steel wheels carry any load. Never any drying apart or tire setting.

Let us send you a book free to show you why you should have an Electric Handy Wagon. Suited to all farm hauling; a labor saver everywhere. Address

ELECTRIC WHEEL COMPANY
Box 57, Quincy, Ill.

AMERICAN FENCE
ORIGINAL & GENUINE
STEEL POSTS & GATES

AN investment, not an expense. Theory? No! It's a demonstrated fact.

Put up fences. Let the stock feed on the wastes; grow fat on that which otherwise would never bring a cent. Keep the stock moving on a pasture that is broken up into small fields. The manure adds fertility to the soil. Yields are greater.

Land value increases. All by good fencing and lots of it. Practically every farm in the country would show a splendid profit if divided with American Fence.

AMERICAN FENCE is made of large, stiff wires, galvanized heavily, having the American hinged joint (patented), a fabric most flexible and wear-resisting. Square mesh fence of weight, strength and durability—three great needs in farm fences.

Dealers in Every Place

where farm supplies are sold. Shipped to them direct from mills in carload lots, saving freight charges and enabling dealers to sell at lowest prices, giving buyer the benefit.

American Steel Fence Post Cheaper than Wood and More Durable. Get Catalog.

Send for copy of "American Fence News," also book "How to Make the Farm Pay," profusely illustrated, devoted to the interests of farmers and showing how fence may be employed to enhance the earning power of the farm. Furnished free upon application.

F. Baackes, Vice Pres. & Gen. Sales Agt., AMERICAN STEEL & WIRE CO. Chicago, 72 Adams St.; New York, 30 Church St.; Denver; U. S. Steel Products Co., San Francisco, Los Angeles, Portland, Seattle.

PLANT TREES WITH
DU PONT
Red Cross Dynamite

Stops First Year Losses.
Speeds Up Development One to Two Years.
Improves Quantity, Color and Quality of Fruit.

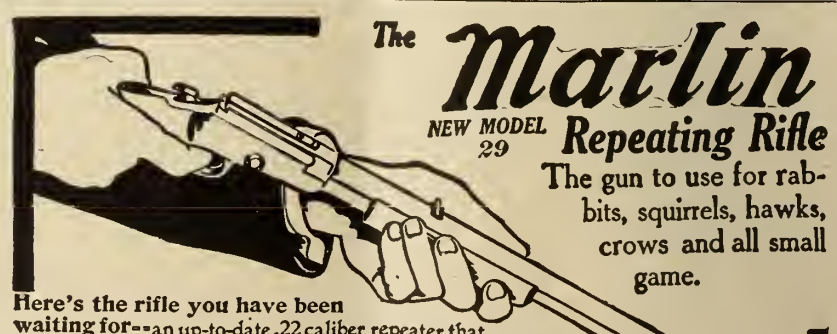
Planted in Dynamited hole
Photographed from life
Planted in Spade-dug hole
Photographed from life

The illustrations herewith are correct reproductions of photos of two-year old Bing Cherry trees planted same day out of same shipment. Similar results have been obtained all over the country. The root diagrams show the reason. You can't afford to plant trees in spaded holes.

Write for Free Booklet

To learn how progressive farmers are using dynamite for removing stumps and boulders, planting and cultivating fruit trees, regenerating barren soil, ditching, draining, excavating and road-making, ask for "Tree Planting Booklet, No. 36

DU PONT POWDER CO.
Pioneer Powder Makers of America WILMINGTON, DEL.



The Marlin
NEW MODEL 29 Repeating Rifle

The gun to use for rabbits, squirrels, hawks, crows and all small game.

Here's the rifle you have been waiting for--an up-to-date .22 caliber repeater that handles without change or adjustment .22 short, .22 long and .22 long-rifle cartridges of all makes and styles, yet sells at the surprisingly low price of $8.50.

The solid-top and side ejection are always a protection, keep shells, powder and gases from your face, allow instant repeat shots. Quick take-down construction—easily cleaned—takes little space and brings greatest pleasure at small expense.

Learn more about the full Marlin line. Send 3 stamps postage for the 136 page Marlin catalog. The Marlin Firearms Co. 139 Willow Street New Haven, Conn.

Make $25 to $50 Weekly

selling the Automatic Combination Tool in your home county. A Fence Builder's Tool, Post Puller, Lifting Jack, Vice, Wrench, etc. Used by Farmers, Teamsters, in Factories, Mills, Mines, etc. Weight 24 lbs. Capacity 3 tons. No experience necessary. Free instruction. Write for special offer to live agents. Send no money. Name county where you live.

AUTOMATIC JACK COMPANY
Box 99 Bloomfield, Ind.

TRY THE SMITH FREE

We want a SMITH STUMP PULLER on every stump or timbered farm in the country. It has a cost record of 5¢ a stump where the stumps run from 1 to 3 feet through; it will clear from 1 to 3 acres a day, doing the work of 20 men. Write today for our catalogue and FREE TRIAL OFFER.

W. SMITH GRUBBER CO., 8 Smith Sta, La Crescent, Minn.

drove of hogs and some chickens. Yet Mr. Porter finds it unnecessary to buy any feed aside from some cottonseed meal, and pasture for his cows during the summer. The corn he grows is made into silage, and his fields have been producing this at the rate of twenty-five tons per acre. Cowpeas follow the corn, and sorghum for hay follows a crop of oats. Sorghum is the hay he uses, as when fed with cottonseed meal it is as good as clover. The sorghum is planted at the rate of a bushel of seed per acre, and is cut when it is in the right stage for making into syrup.

Manures Heavily and Cultivates Often.

Since the cattle are housed in a modern barn, all of the manure is saved, and is hauled to the fields as fast as made. When the crop is off the fields in the fall, all of the land is given a heavy dressing with manure, then plowed and left rough all winter. It is plowed again in March and the plow followed with a subsoiler. The land is then worked down smooth and fine with harrows, and the seed is planted level. This is an important feature in the method of culture practiced by Mr. Porter. All kinds of seed are planted level, and the land kept level in all of the many

The orchard is clean, thrifty and shows every evidence of having had good care.

cultivations given to each crop. But for the corn and sorghum the rows are furrowed down the middle after the crop is well started and fertilizer sprinkled in them at the rate of 1,000 pounds per acre.

With such preparation of the soil, followed by such after care, it has been possible for Mr. Porter to make his farm pay him as much gross income as the average 200-acre farms of his neighbors return. It is by following out a well arranged plan based on hard scientific, business principles; it is by knowing what to do and when to do it and what results should be expected that has made the Porter farm the most productive in Washington County. When Mr. Porter sells butter he knows he is not selling the mineral elements of fertility from his soil, but when he sells hay the fertilizer leaves the farm for good. For example, the fertilizing ingredients of a ton of butter amount in round figures to about fifty cents in value, but the same ingredients in a ton of timothy hay amounts to about ten times as much, or five dollars. So, by feeding his hay to his cattle, and returning the manure to the land, the fertilizer is kept at home, while the finished product that leaves the farm, the butter, contains practically none of the matter which goes to make up a fertile soil.

Mr. Porter says that "during the past year our cows gave about 72,500 pounds of milk, from which we sold 600 gallons whole milk at 20 cents a gallon, wholesale; 70 gallons cream, 20 to 25 per cent, at $1 to $1.25 per gallon; made 3,050 pounds of butter which sold at 30 to 35 cents per pound; 600 gallons of buttermilk at 10 cents a gallon, and fed 40,000 pounds of skim milk, which we valued at 50 cents per hundred pounds, to heifer calves and pure bred pigs. The gross returns from the dairy for the year amounted to a little over $1,500, and does not take into consideration the 150 tons of manure made during the year by the cows, and put back on the soil." This manure is valued at $2.50 per ton, and would add $375 to the gross returns from the dairy.

Feeds Skim Milk.

All of the milk from each cow is weighed at each milking, and at frequent intervals samples are made for Babcock testing, in order to know how the butter fat is holding up and to know if the cows are making a profit or whether they are mere "boarders." As soon as the milking is done the cream is separated in a De Laval separator, for which Mr. Porter serves his community as local agent; the skim milk goes immediately to the pigs and heifer calves, while the cream is, in due time, made into butter. The herd is headed by a registered Jersey bull and all heifer calves are kept and the bull calves sold for veal.

Hogs are kept as a side line along with the dairy and have afforded good profit. However, hard luck was the outcome of his efforts last summer, on account of cholera. This disease appeared just as his drove was being finished for market and caused the loss of eighty pure bred animals. This was a very heavy loss, not only from the financial side, but because they were the offspring of some of the finest parents ever sent into the state of Arkansas. Mr. Porter is very proud of his hogs. He has a sow that is a five times prize winner at some of the leading shows and fairs of the South, and the boar that heads his drove is one of the champion Durocs of Iowa.

But cholera will have a hard time causing such a heavy loss with the hog crop another year, for they will be immunized against the disease. The hogs which were lost this year had been inoculated, but because of inexperience or faulty serum, or both, the work was a failure. However, Mr. Porter is prepared to do the work in an effective manner in the future.

The success of Mr. Porter in the management of his combination fruit and dairy farm but emphasizes the importance of this combination. Dairying maintains fertility of the soil, and fruit growing alone does not. The man who grows nothing but fruit is also at a loss to handle labor to best advantage, for at certain seasons there is work for many men, while at other seasons there is no work for even one man. The combination farm, such as Mr. Porter has built up, helps to equalize the demand for labor.

⚜ ⚜

Everybody Should Read The Fruit-Grower.

O. L. Raubs, Anaheim, Cal., writes as follows: "I recommend The Fruit-Grower most highly to all my friends, for it is a most excellent journal. Every person having a plot of ground even four feet square, with a shrub on it, should be a subscriber."

We second the motion. Will you please look after the subscriptions of your neighbors, friends?

⚜ ⚜

Nearly everyone believes the late spring means there is no danger of frost injury this spring. Better look after the orchard heaters, however, merely as a precaution.

DE LAVAL CREAM SEPARATORS

No Excuse for any Cow Owner Being Without One

There is no reason why any cow owner who sells cream or makes butter should be without a cream separator and there is no excuse why he should not have the best separator.

Any creameryman or experienced dairyman will tell you that a good cream separator will give you a great deal more and a great deal better butter than you can make with any gravity setting system, and equally, of course, more and better cream, if you are selling cream.

The DE LAVAL is acknowledged by creamerymen and the best posted dairymen the world over to be the **"World's Standard"** and the one and only separator that always accomplishes the best results possible and always gives satisfaction.

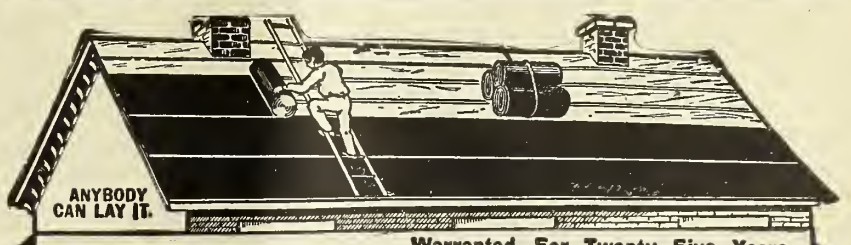
You cannot make the excuse that you can't afford to buy a De Laval, because it will not only save its cost over any gravity setting in six months and any other separator in a year, but is sold either for cash or on such liberal terms that it will actually pay for itself.

A little investigation will prove to you that the truth of the matter is that you really can't afford to make cream or butter **without** the use of a DE LAVAL cream separator.

The nearest De Laval local agent will be glad to demonstrate this to your own satisfaction, or you may write to us direct.

THE DE LAVAL SEPARATOR CO.

New York Chicago San Francisco Seattle



Rubber Roofing

Warranted For Twenty-Five Years.

FREIGHT PAID To Any Station East of Rocky Mountains, except Texas, Okla., Colo., N. D., S. D., Wyo., Mont., N. M., La., Ga., Ala., Miss. and Fla., on all orders of three rolls or more. Special Prices to these States on request.

ONE-PLY - - - - Weighs 35 lbs., 108 Square Feet, $1.10 per roll.
TWO-PLY - - - Weighs 45 lbs., 108 Square Feet, $1.30 per roll.
THREE-PLY - Weighs 55 lbs., 108 Square Feet, $1.50 per roll.

TERMS CASH: We save you the wholesalers' and retailers' profit. These special prices only hold good for immediate shipment.

Indestructible by Heat, Cold, Sun or Rain.

Write for FREE SAMPLES or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to Southern Illinois National Bank.

CENTURY MANUFACTURING COMPANY, Dept. 315 East St. Louis, Ills.

Kill Gophers and Squirrels Before THEY Kill Your TREES

Protect your trees and shrubs by *killing* the gophers, squirrels and other pests! Only 75c or $1.25 is all you need spend for this *sure* and *absolute* protection, even if you have 160 acres. Get a box of Mickelson's Kill-Em-Quick! It is *easy* to *use, cheap* and *effective. I guarantee* it to kill all pests for less than 1 cent per acre. Money back if it fails.

Kill-Em-Quick Gopher Poison

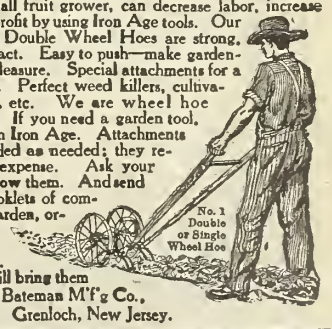
is so *attractive* to the taste and smell of these pests that they simply can't resist it. They eat it before they know what it is and it kills them before they can wink an eye. One poisoned grain is enough to kill.

You can increase your crops and profits immensely if you will use Kill-Em-Quick Gopher Poison right *now*. It is sold under an absolute guarantee of satisfaction or money back. If druggist cannot, or refuses to supply you, I will ship direct, express prepaid. Kill-Em-Quick sells for 50c, 75c and $1.25 per box.

Anton Mickelson, President
Mickelson Kill-Em-Quick Co.
1431 Washington Ave. North, Minneapolis, Minn.

GOOD CULTIVATION

If you would have a bigger, better garden, good cultivation is absolutely necessary. The home gardener, trucker, small fruit grower, can decrease labor, increase crops and profit by using Iron Age tools. Our Single and Double Wheel Hoes are strong, light, compact. Easy to push—make gardening a real pleasure. Special attachments for a dozen uses. Perfect weed killers, cultivators, hillers, etc. We are wheel hoe specialists. If you need a garden tool, you need an Iron Age. Attachments can be added as needed; they reduce tool expense. Ask your dealer to show them. And send for free booklets of complete line garden, orchard and field labor-saving tools.



A postal will bring them promptly. Bateman M'f'g Co., Box 5061 Grenloch, New Jersey.

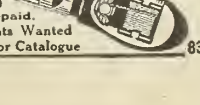
FOR SEWING LEATHER

The Speedy Stitcher sews a lock stitch like a machine. It mends harness, shoes, or in fact anything. The latest, the best—it beats anything for the money. **Retails for $1.00.** Guaranteed to give satisfaction. Special price on sample to agents. Our wholesale prices lowest ever offered; **over 200% profit.** We manufacture our own goods, can sell the best Awl for the least money. Sells on sight. Send now for catalog and sample.

Automatic Awl Co., 83 Gardner Terrace, Worcester, Mass.

The Best **For Sewing Leather**

PRICE $1.25 Prepaid. Agents Wanted Send for Catalogue



Stewart Automatic Awl WILL MEND ANYTHING

STEWART-SKINNER CO. 83 HERMON ST. WORCESTER MASS

NOTES FROM MORRISANIA

These notes are written at long range, and are made up from letters received from time to time recently. Real work for the season of 1912 will start about the first of April, and the season promises to be a very busy one.

The winter has been a very good one, all things considered. Morrisania's claim to having an ideal climate for fruit culture has been made good. Winters are remarkably even as to temperature. Six to eight degrees below zero is the lowest temperature recorded during the past winter. This contrasts most favorably with the extremely low temperatures reported from other districts.

All fruit buds have passed the winter in perfect condition. Even the most tender buds have not been hurt, and indications are favorable for another good crop for 1912.

A letter from a Fruit-Grower subscriber living on the north side of Grand River, where a fine view of Battlement Mesa can be had, states that there is lots of snow in the mountains. He says that the snowfall seems to have been very heavy the latter half of February and first half of March, so there should be an abundance of water for irrigation this season.

Of course, everybody wants to see plenty of water, and yet a great many persons use too much water in growing fruits under irrigation. Last season at Morrisania Mr. W. B. Eames watered his young orchard only twice during the entire summer. His trees made a fine growth, the wood ripened perfectly, and Mr. Eames says he has convinced himself that if thorough cultivation is practiced a young orchard can be grown with but little water.

Mr. Eames' experience is in line with that of other experienced growers, too. In many fruit districts of the West where irrigation is practiced, a great many of the growers do not irrigate young orchards at all. They claim that if trees are not watered the roots will go deep for moisture, and of course this is what is desired. These growers expect to water their trees when they reach bearing age, but the young trees are grown with a minimum quantity of water, for the reasons given.

We have a notion to plant quite a quantity of celery at Morrisania this season. Last year we planted some for our own use, and it was of exceptionally fine quality. Colorado celery is now famous all through the Middle West, but not much is grown on the Western Slope. In the vicinity of Denver and Pueblo are great celery fields, and the product is shipped in carloads. One commission merchant in St. Joseph told us he handled fifteen fifteen carloads of Colorado celery last fall. We will not expect to ship from Morrisania in carloads, but we believe that a small field will be profitable, for the celery can be marketed on the western side of the mountains.

Correspondence with Prof. Herrick, field horticulturist of the Colorado Experiment Station, has led us to decide to try a cover crop in at least part of our orchard this season. Perhaps "shade crop" is a better name, having in mind conditions which exist in orchards in the arid districts.

Several kinds of plants have been considered for this purpose: Canada field peas, vetch, sweet clover, red clover and alfalfa. We are going to try alfalfa for this purpose. This is rank heresy to some persons, but we believe alfalfa will be all right for this purpose. Planted early this spring, it should be turned under late in summer of 1913, and will add a great quantity of humus to the soil, and in addition there will be a considerable quantity of available nitrogen. The experiment will be made in one corner of the orchard, but we are confident the results will be satisfactory.

The objection to planting alfalfa as a shade crop, according to Western growers, is that it is hard to get rid of. If the alfalfa is drilled, there will likely be no difficulty in getting rid of it, for it can be kept away from the trees. Anyway, there will be no great harm if not all of it is destroyed when the orchard is plowed. A few hills of alfalfa may make the orchard look ragged, but they will still furnish some humus and some nitrogen, and will not be very objectionable, after all. Of course, the alfalfa should be kept away from the trunks of the trees, for the fertility is needed out in the centers.

We will watch this experiment with much interest. Not enough attention is given to shade crops in Western orchards, and there are thousands of acres of trees which would be greatly benefited by planting alfalfa or some other leguminous crop in orchards which have been kept clean for years.

We shall be glad to hear from those who have tried alfalfa in orchards. Not as a crop to be left permanently, but as one to be left about two seasons, and then turned under. What has been the experience of others? How did you plant the seed, and when? Did you sow broadcast or plant in drills? Let us get together some actual experience in using alfalfa as a shade crop. J. M. I.

IRRIGATING THE GARDEN AT MORRISANIA.
Everything is planted in rows, to facilitate irrigation and cultivation. Crop shown in illustration is Swiss chard, a good substitute for spinach.

Whitewash as a Spray for Oyster Shell Scale.

In many fruit districts oyster shell bark louse has become quite a serious pest, and must be fought by spraying. The insect can be readily recognized from its name, for the shell or scale coating of the insect is shaped exactly like an oyster shell.

At the experiment farm at Ottawa, Canada, whitewash has been found a very effective insecticide for this pest. The wash is made by using forty pounds of lime, forty gallons of water, and eight pounds of salt. This whitewash is sprayed on the trees in autumn immediately after the leaves have fallen, and a second application of the same mixture is made as soon as the first has dried. It is claimed the salt is not absolutely necessary for the effectiveness of the whitewash, but it has the effect of making the bark appear cleaner and brighter.

The lime wash loosens the scale and breaks their attachment to the twigs, and they are easily washed off by rain or snow. It is suggested that when trees are sprayed with lime and sulphur in early spring, while yet in dormant condition, the remedy seems to be more effective, and any scales which escaped the whitewash treatment in autumn will probably be removed by the lime-sulphur, but lime-sulphur alone does not seem to be effective against this insect.

Just here it may be said that a good lime whitewash applied to peach trees in early spring will control peach leaf curl. Make the application very thorough, however.

Beginning Early for Apple Show.

Plans are already actively under way for the second Indiana Apple Show to be held November 4 to 9, 1912. The unqualified success of the 1911 show—the first ever held—has been a decided impetus to the horticultural revival which has been taking place in the Hoosier state during the last two or three years.

The Apple Show Commission has organized with the same officers as last year as follows:

E. R. Smith, Indianapolis, president; C. N. Lindley, president of the Indiana Horticultural Society, Salem, Ind., vice-president; Dr. H. E. Barnard, state food and drug commissioner, Indianapolis, superintendent; Hon. Joseph M. Cravens, Madison, Ind., treasurer; C. G. Woodbury, head of the Department of Horticulture, Prudue University, Lafayette, Ind., secretary.

The show management is promising a premium list which will go ahead of the $3,000 in gold awarded at the 1911 show. Indiana fruit growers are advised to begin preparations at once for [illegible] the right kind of exhibition

Orchard pr[illegible]

PART OF LAST SEASON'S GARDEN AT MORRISANIA, WITH HEADQUARTERS HOUSE AT THE RIGHT.

View of Morrisania, with Book Cliffs, 3,000 feet high, in the Background, which serve as a protecting wall against storms from the North.

MORRISANIA

A Tract of Ideal Fruit Land

MANY PERSONS who read this advertisement would be greatly interested in Morrisania if they only knew what a fine place it is. There are those who should see Morrisania this spring, before all tracts are sold. Those who should visit Morrisania with a view of buying tracts are:

First—Those who contemplate changing their location to a place where fruit crops are sure every year. Morrisania's record of **only one crop injured by frost in twenty years** entitles it to careful consideration.

Second—Those who must seek Colorado's wonderful climate for the benefit of health of some member of the family. No health resort in the state has a better climate than Morrisania, and no health resort can grow such wonderful fruits and vegetables as are produced at Morrisania.

If YOU want to grow fruits, then Morrisania is the place. We have everything in bearing there to show what can be produced. We can give actual demonstration of the sureness of crops and of the quality of fruits produced. Location is the very best, with fine fruit soil, pure mountain water for domestic use and irrigation, an ideal climate and most beautiful surroundings. Two railway lines give best shipping facilities.

If YOU are looking for health, then Morrisania cannot be beaten. Wonderful health-giving climate, with about 300 days of sunshine a year. Pure mountain air, away from the city. No typhoid fever, no hay fever; an ideal place for those afflicted with pulmonary complaints, for vegetables of all kinds grow to perfection, and it is an ideal place for raising poultry and for dairying, so that plenty of nourishing food is available at all times. With almost continuous sunshine, one can live outdoors almost all the time.

Go to See Morrisania This Spring

We started out to sell about 400 acres of this land, and over 300 acres have already been sold, and these tracts are now being developed by persons who regard Morrisania as we do—an ideal place for growing fruits and as a location for a home.

There remain only about twelve ten-acre tracts to be sold, and those who want fruit land which has been thoroughly tested should arrange to see Morrisania this season.

There is no uncertainty about anything at Morrisania.

The soil is all right, as is demonstrated by crops grown.

The water supply is all right, for the water rights have been used for more than twenty years.

The markets for Morrisania fruits are ready to take more as has been demonstrated in marketing the crops of past seasons.

In fact, everything is ideal at Morrisania. Send for an illustrated booklet telling all about the place. Ask whatever questions you will, and they will be answered to the best of our ability.

But, above all things, we urge you to go see Morrisania for yourself. You will find it even better than represented. Write today for any additional information. Homeseekers' tickets on sale the first and third Tuesdays in every month. Take advantage of low rates and see Morrisania before tracts are all sold.

Morrisania Land & Orchard Co., BOX 1277 St. Joseph, Mo.

HAMILTON MADE

Spraying HOSE

is strong enough to stand any pressure of pow r or hand pumps and lasts indefinitely. Is much cheaper (because f long service) than the cheapest priced hose, much better than any other's best.

Every length will stand 600 lbs., guaranteed for 300 lbs. working pressure.

½-Inch.....15c per ft.
⅜-inch.....14c per ft.

In 50-foot lengths; coupled complete; freight paid.

Vulcan Spraying Hose

Stands 350 lbs., guaranteed for 150 lbs. working pressure.

½-Inch.....12c per ft.
⅜-Inch.....11c per ft.

50-foot lengths, coupled complete.
Order from your dealer, or shipped direct from factory, cash with order.

Hamilton Rubber Mfg. Co.
TRENTON, N. J.

Kill the vermin in your poultry house by the use of this bucket spray pump. White wash your buildings and fences, spray your small trees, bushes, and vegetables, wash your porches, windows and vehicles with it. 100 lbs. steady pressure; bronze ball valves; candle wick packing.

IRON AGE Quality throughout

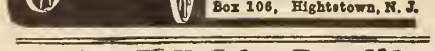
Solution comes in contact with brass parts only. Easier to repack than any similar outfit made. With or without bucket. Ask your dealer to show it. Also write for special booklets. Complete line.

BATEMAN M'F'G CO.
Box 506B Grenloch, N. J.

Spray 30 Acres a Day

Potatoes, Small Fruits, Vines

Spraying that counts. 6 rows at a time with force to do work right. Foliage sprayed all over, under as well as on top. The Perfection Sprayer is also great at orchard work. Spray trees by hand. Easy to maintain 100 pounds pressure with two nozzles going. Strong 60-gallon tank, perfect agitation, absolutely best spray pump made. Spray pipes fold up—you can drive close to trees and in narrow places. Nearly 25 years sprayer builders. We know requirements, and know the Perfection is right. Nearly 2000 now in use. All giving satisfaction. Write for Free Catalog. Don't buy any sprayer till it comes.



THOMAS PEPPLER & SON
Box 106, Hightstown, N. J.

Bigger Fruit Profits

Here is a spray pump invented by fruit growers. It was our endeavor to secure the best spray pump to use on our 300 acre fruit farm that produced the

ECLIPSE SPRAY PUMP

It overcomes every defect found in other makes—it has proved itself best in actual work. Put an Eclipse to work on your trees and earn bigger profits. Write for our fully illustrated catalogue. It tells why you should spray—and why you should do it with an Eclipse. It's free. Write to-day.

MORRILL & MORLEY MFG. CO., Benton Harbor, Mich.

PATENTS That Protect and Pay Send Sketch or Model for FREE SEARCH

Books, Advice, Searches and Big List of Inventions Wanted **FREE!**

Watson E. Coleman, Patent Lawyer, Washington, D. C.

I hear many consoling remarks about an extra good crop season ahead but that is merely a crumb that good people try to comfort themselves with after the experience of this Alaskan winter. We do know that the soil works better after hard freezes and consequently more plant food liberated, but work of all kinds will be late.

I should like to see some of the stations make some tests of early and late pruning of the grape. If there is any data on this point I have not seen it, but there certainly should be. I think the injury to vines from bleeding of late cut canes is exaggerated in common opinion. People think of the dripping sap as blood when it is really little more than water. I surmise that the roots of a vine are able to furnish this sap much faster than it drains away and that the canes are never in want. The sap soon coagulates over the wounds. There is already food reserved from the preceding fall with which to furnish bud growth and only water is needed to dissolve it into circulation. I doubt if anything less than a most careful comparison could demonstrate any difference in the fruit bearing capacity of vines pruned before and during the bleeding period. This period begins when the sun has warmed the sap into circulation and continues until the leaves appear and begin to absorb the water and evaporate it into the air. As soon as they begin to perform their regular functions the canes will no longer bleed.

Last spring I let some vines go over until the 15th of May, when they were in full bloom. I found pruning at such a time much more difficult and impossible to do according to any system, for in accordance with the nature of the grape the buds near the ends of the canes developed first and sent out the strongest shoots with the best developed clusters. As a result the pruning resolved itself into a selection of the best bearing shoots, regardless of their position, and care to estimate what would be a fair amount of fruit for each vine. Almost at once after this the drouth set in and threatened to prevent the vines, in their advanced condition of fruit bearing, from collecting energy enough to start the growth of enough new wood for the next season. Some of them on a dry soil made very little growth and will no doubt show a diminution in yield. As far, however, as the immediate crop was concerned, there was no difference in fruitfulness and the vines produced a heavy crop. I shall report further as to these vines when I get to them again with the pruners.

The commercial Ives continues to make good; a grape that begins to color with the earliest but has a long period of ripening that carries it into the Concord season. We receive many orders on our local market for grapes by the half-bushel basket or by the pound, for putting up in various ways and we find that the Ives gives perfect satisfaction for such purposes. It is a grade smaller than the Concord in berry and not equal to it in quality, but for canning we rank it among the best.

I have mentioned the King grape before as a coming rival of the Concord. It has a shorter, more compact bunch than the Concord and a larger berry, equally good flavor and even a hardier and more vigorous growth. As a larger grape and equal to the Concord in all other respects, if not superior, it will outsell it. For all this, however, I cannot yet vouch from sufficient experience. My own vines are not in bearing.

As to Campbell's Early, of which you hear so many conflicting reports, Mr. Kemper of the vine-covered hills of Gasconade County, Missouri, writes me that it did much better with him after heavy manuring and short pruning. That is what it requires here, and thus treated it excels all other kinds, but without this care it falls into the mediocre class.

Among the very best table grapes that should be in every collection and which, best of all, are not inclined to rot, are Green Mountain, which is the first to ripen here, the second early, Wyoming Red, the Delaware, and the rather late Woodruff's Red. If not troubled by rot, add Brilliant, Brighton and Vergennes, the last closely resembling Woodruff's but a little earlier. These, with Campbell's, will give you the choicest quality in grapes clear through the season, but to still further prolong it add Norton's Virginia and sack the bunches. This latter is a favorite of mine and I always stopped on the way to the barn before breakfast to get a bunch or two of this most vinous and appetizing of grapes. With bunches protected from the birds it will carry far into September, but unless sacked, the birds will concentrate on these grapes, as all others are gone, and the share they leave you will be a small one.

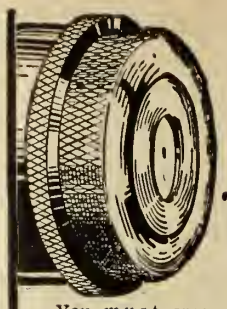
Campbell's Early as grown here outclasses Moore's. This was admitted by Prof. Howard, secretary of the Missouri State Board of Horticulture, to whom I sent a basket of specimens last summer. I was also able to hold it at 4c a pound for some time after other kinds were on the market at 3c.

Brown's Seedling, sent out from the East as an extra early, I find inferior to Moore's and withal without a great deal to recommend it.

Of late I have noticed several favorable reports on the strawberries Gill, Mellie and Joe, all of which I have been extolling in these columns. L. B. Pierce of Northern Ohio states that while Dunlap yielded only one ripe berry to a stem, here and there, the Gill had three or more on every stem. My opinion is that it is the most productive of all extra earlies, but will repeat that it is too soft for a long distance shipper, and, like most heavy bearers, its later pickings run below medium. The Mellie is praised by growers as far apart as New Jersey and Texas, while the Joe is beginning to win friends. I am confident that a berry that has here been the best medium to late variety season after season must have value elsewhere, but it should have a rich, deep soil.

The New York station gives a list of varieties that during 1909 and 1910 showed many desirable characteristics. Among them were the Ozark, Highland, Sherman, Battenberg, First Quality, Deacon, Superior, Mascot and Parcell's Early. It reports on five of Rockhill's seedlings but apparently as spring bearers alone. Everyone is criticised for deficiency in size, but this has little bearing on their value as fall bearers.

J. E. Fitzgerald of Texas writes me that the Giant Himalaya blackberry is a failure with him and that he will destroy the vines. He gives no particulars. There appears to be several varieties, some with cut leaves, some with round ones. My first trials were with the cut leaved and they invariably winter killed. Now I have the round leafed sort, set last spring. A neighbor has a fine row of them with long canes tied neatly to a wire trellis. I shall report on these when they fruit, if they ever do. The cut leafed kind is



Spray With The Nozzle That Makes Big Profits

You must spray to get best results. Every progressive farmer, fruit grower and gardener knows that. Don't spray with the old fashioned, clogging, wasteful nozzles. Save time and labor—make bigger profits—Use Brown's

Non Clog Atomic Nozzle

The greatest spraying invention in years, the only nozzle that absolutely *can't clog*—Instant change from wide or narrow angle, fine foggy spray or powerful stream. Reaches and saturates every part of trees and plants. Handles all solutions perfectly. Ideal nozzle for orchard, field crops and all heavy work. Starts and stops instantly. No waste of solution. A proven money maker.

Write for particulars of complete line of spray machinery.

Valuable, complete New Spraying Calendar Free.

Write today.

The E. C. Brown Co.
29 Jay St. Rochester, N. Y.

HEMINGWAY'S LEAD ARSENATE

The brand which is used in all of the great Apple Growing Districts of the country—The Blue Ridge Slopes, The Ozarks, Western New York, Michigan and the famous valleys of the great Northwest.

Lead Arsenate of the Highest Standard of Manufacture, Both Chemically and Physically.

Hemingway's London Purple Company, Ld.

Write for Booklet and Prices — New York

Know Your Spray SOLUTION

The Secret of Spraying Success is in the Right Solution

The TAYLOR "LI-SUL-SPRAYOMETER" shows you the exact gravity and strength of your Lime and Sulphur washes—the most efficient and least dangerous of all spraying solutions.

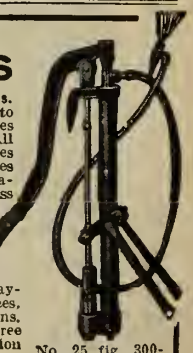
N. Y. Pattern—Two Sprayometers and Test Jar in case.....$2.00
Penna. Pattern—Sprayometer and Test Jar in case $1.25

If your dealer cannot supply you, write us. Send for circular of formulas and general information on Spraying. Ask about the "TYCOS" Frost Alarm and other Thermometers for Orchardists.

Taylor Instrument Companies
57 AMES ST., ROCHESTER, N. Y.

"LIGHTNING"
SPRAYERS

At Your Dealer's or Write us. This Pump quickly attached to any barrel by bolting to staves at upper end of barrel. All working parts brass. Requires no priming. Brass ball valves and valve seats, paddle agitator. 5-ft. 5-ply hose. Brass Vermorel Nozzle, throws any size spray or stream 50 feet, and impossible to clog. Adapted for spraying fruit trees, whitewashing stables and various other styles to select from. For spraying garden vegetables, trees, shrubbery, washing wagons, windows, etc. Write for free catalog and agents' proposition on full line.



No. 25 fig. 300-bbl. Spray Pump.

D. B. Smith & Co., 54 Geneses St., Utica, N. Y.

A Stahl Spray Outfit Sent for $3

Write for Stahl Sprayer Catalog and Treatise on "Orchard Enemies." Select any Stahl Barrel Sprayer. Send $3 and we will ship outfit. Examine it. If O. K., pay balance. Try it 10 days—if not satisfactory, send it back and we will refund your money. All Sprayers at bargain prices. Write today. (36)

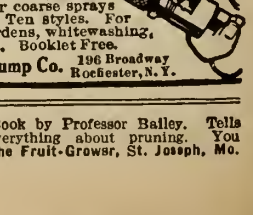
Wm. Stahl Sprayer Co.
Box 867 Quincy, Ill.

"KANT-KLOG" SPRAYERS

Spraying Guide Free

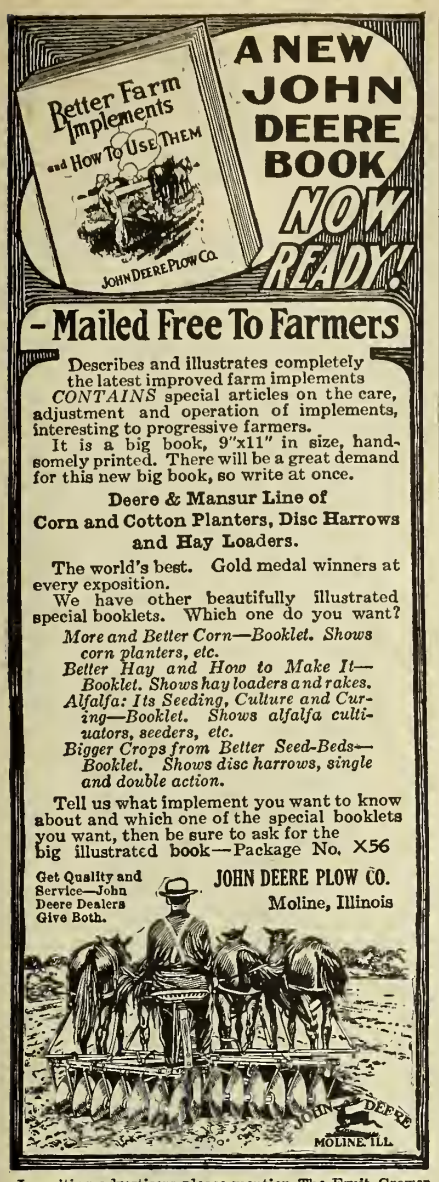
Something New

Gets twice the results with same labor and fluid. Flat or round, fine or coarse sprays from same nozzle. Ten styles. For trees, potatoes, gardens, whitewashing, etc. Agents Wanted. Booklet Free.

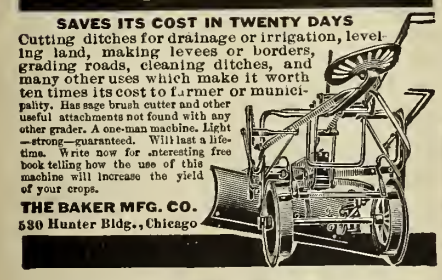


Rochester Spray Pump Co. 196 Broadway Rochester, N. Y.

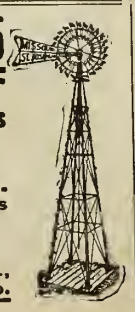
PRUNING Book by Professor Bailey. Tells everything about pruning. You need it. Price $1.50. The Fruit-Grower, St. Joseph, Mo.



In writing advertisers please mention The Fruit-Grower.



In writing advertisers please mention The Fruit-Grower.



hardy and productive in Central Arkansas, judging from one vine that has endured for a number of years. My advice is to go slow with the Himalaya until you have tried out specimens and given them a thorough test. The same holds good of the Loganberry and Mammoth blackberry.

The Older raspberry is little heard of these days, but Prof. Waid of the Pennsylvania college reports that on fertile limestone soils at least, it has proven to be the best of all kinds tested. The plants are "decidedly upright and produce a heavy crop of large berries." I shall have to try the Older if I can find it listed. The new Royal Purple raspberry from New York shows no difference here worthy of note from the other purple kinds. I regret to say that several new sorts set out last spring succumbed to the drouth.

I want to advise blackberry growers to plant the Early King for the very best second early on the whole list. It ripens about seven to ten days after Early Harvest and is much larger and of the finest flavor, the sweetest of all berries and edible as soon as black. It is a little dwarfish in growth, but give it rich soil and good cultivation or better yet, a deep mulch, and it will bear heavy crops of fruit that is as sweet as dewberries. Don't put it on thin dry soil—it won't succeed. It is hardy and almost immune to rust—equal to the Snyder here in those respects. L. R. JOHNSON.

Missouri.

Comparative sizes of berries and bunches of the following grapes, beginning at the left: Delaware, Wyoming Red, Green Mountain, Brighton.

Building Up the Old Orchard.

In rejuvenating the orchards of the Central States, it is only taking up the work where our fathers left off 30 to 60 years ago. It has been 25 years since we have had a general apple crop in the northern part of Indiana. It is true that orchards which have received good attention and care have borne from light to heavy crops of apples each year, up to the past season. The 1911 crop of apples in the northern part of Indiana was a record breaker, while the crop in the southern part of the state was damaged by late frost in the spring and was very light.

We wanted to make a demonstration of the effectiveness of spraying and to prove to our people that spraying was one of the main factors in producing an even crop of high grade apples. We selected for our work the orchard on the A. C. Humke farm, two and one-half miles north of our home town. The orchard contained forty-nine large apple trees, about twenty-five years old. The trees were set thirty-two feet apart each way and the limbs nearly touched from tree to tree. In addition to these, there were a few peach, plum and cherry trees.

Barren and Scale Infested.

This orchard has always been considered as being barren, as it has never produced enough apples to enable the identification of the various trees. But as it is located on soil which is abundantly fertile the trees should have been good producers. The trees have been kept fairly well pruned and were fairly healthy, but we found that many were crusted with scurfy, oyster shell and some San Jose scale.

Our first spraying was done just as the buds began to swell, using a lime-sulphur solution testing 34 degrees, and diluted 1 to 8, giving a test of seven degrees when ready to be applied. Two pounds of arsenate of lead was added for each fifty gallons of the liquid and this was applied with a Hardie Duplex power sprayer at a pressure of 140 pounds, and with a Vapo nozzle.

We began on the north side and sprayed on each side of the spray rig, catching one side of each two rows as we went through. We went all over the orchard in this way, giving the same application. I do not think we missed many spots in the orchard, and if we found a hole or crevice in a tree we turned the full force of the nozzle directly into it. It took us eight hours to make this application, as water was a little unhandy.

The second spraying was done when three-fourths of the petals had fallen. At this spraying we used self-boiled lime-sulphur, and thoroughly drenched the trees. This application was made through Blizzard nozzles provided with the bent connections. The third application was made four weeks later, using the self-boiled lime-sulphur and arsenate, applied through the Vapo nozzle. Another application should have been made about the first of August, yet the apples hung well up to picking time and were free from worms, blotch and defects.

Sprayed at 75c per Tree.

The yield was near 750 bushels, 150 bushels summer apples, 500 bushels winter apples and about 100 bushels of cider apples. The winter apples were graded to two and one-fourth inches and up. This orchard received a close inspection during the summer, as the people watched our work and predicted failure of the crop. We proposed with Mr. Humke to do the spraying for one-fourth of the crop, or 75 cents per tree. We used the spray outfit from our own orchards, with our own men, and thus the work was well done. The peaches, plums and cherries were sprayed with the same solutions as applied to the apples, without the least defoliation.

Our state as a whole is taking up the old orchards and setting out new ones in a way that bids fair to again give us plenty of good high-grade apples for our own needs, and may give us a surplus for other states.

J. H. MORT, Indiana.

Appreciation from Colorado.

In sending his own renewal and one new subscription, together with a list of names of neighbors who should read The Fruit-Grower, G. P. Broughton, Olathe, Colo., writes:

"I will just mention here my appreciation of The Fruit-Grower. I have taken a number of different fruit journals, but The Fruit-Grower is the best of all. The article giving report of last season's spraying at Morrisania was the best thing I ever read on this subject. I have over a hundred acres of orchard here in Montrose county, and conditions are just about the same as at Morrisania, so that I enjoy the reports from there."

The dates of the meeting of the American Association of Nurserymen, at Boston, are June 12th to 14th. Morning sessions only will be held, so that members can see the sights in the afternoon. The Hotel Somerset will be headquarters.

Ask this question first:

"Will the roofing stay waterproof?"

The surface of any roofing may be made attractive, but to be sure the roofing will last you want to know what it's made of.

Genasco
THE TRINIDAD-LAKE-ASPHALT
Ready Roofing

is made of Nature's everlasting waterproofer—asphalt from the world-famous Trinidad Lake. Its valuable natural oils do not dry out like the so-called asphalts made by man. Natural asphalt gives Genasco life and resistance.

The surface of Genasco is handsome—mineral or smooth; and it is lastingly waterproof through and through.

Comes in rolls. Ready for anybody to lay. Ask your dealer for Genasco. Write us for samples and the Good Roof Guide Book—free.

The Kant-leak Kleet, for smooth-surface roofings, prevents nail-leaks and waterproofs seams without cement.

The Barber Asphalt Paving Company

Largest producers of asphalt, and largest manufacturers of ready roofing in the world.

Philadelphia
New York San Francisco Chicago

THE GLIDE GRADER DITCHER LEVELER No 1
A 2 HORSE, 1 MAN ROAD MACHINE

HERE is a real Road Machine. It is a demonstrated success and over 2000 Glides throughout the entire U. S. are daily proving our claim.

THE BEST ALL-ROUND ROAD MACHINE MADE

A machine built to do the work and does it in the easiest and most economical way. Will dig a V shaped ditch 2 to 3 feet deep. Strong enough for 4 horses if required. Indispensable for leveling and preparing irrigated land.

Shipped on Free Trial

Weight 650 Pounds.

Write us TO-DAY for Booklet and special good roads matter. All Free.

GLIDE ROAD MACHINE CO.,
508 Huron Street Minneapolis, Minn.

Ladders, Baskets
Crates, Presses
Picking Bags

EXCELSIOR CUSHIONS
If You Want the Best Send a Card for Catalogue

Bacon & Company
Appleton New York

Coyne Brothers Handle All Kinds of Fruit and Produce
160 Water Street, Chicago, Ill.

TREES OF WASHINGTON

The "Big" Trees Are the Fruit Trees—Over 229,000 Acres Devoted to Various Kinds

Two hundred and thirty-eight thousand, seven hundred and eighty-six acres of land in the state of Washington is devoted to fruit growing, and of this amount 229,854 acres is planted to apple, peach, plum, prune, apricot and cherry trees. The acreage devoted to strawberries is 2,532; 400 acres is in cranberries and 2,500 acres is in grapes. Other berries occupy 3,500 acres. More than 10,000,000 of a total of 14,978,182 fruit trees in the state are in 18 counties east of the Cascade mountains where intense horticulture is practised in the commercial orchards.

The foregoing figures are incorporated in a report just submitted to Governor Marion E. Hay by F. A. Huntley, state commissioner of horticulture, who, estimating the average annual yield at $8,500,000 for the next five years, places the average value of the land devoted to fruit growing at $350 an acre on an earning basis of 10 per cent.

Spokane county heads the list in apple culture with 1,894,882 trees; Yakima county has 1,883,771 and Chelan county claims 1,821,581. Okanogan county is fourth with 847,535 trees and Stevens county holds fifth place with 324,676.

The following figures show the number of trees four years and over and three years and under, respectively, in the various counties:

Adams—Apple, 2,091 and 11,646; pear, 1,289 and 3,674; peach, 581 and 1,991; apricot, 168 and 200; plum and prune, 229 and 850; cherry, 581 and 1,055.

Asotin—Apple, 38,272 and 85,874; pear, 3,750 and 12,000; peach, 129,742 and 47,783; apricot, 2,279 and 343; plum and prune, 3,493 and 12,751; cherry, 20,200 and 229.

Benton—Apple, 120,423 and 276,441; pear, 32,908 and 76,318; peach, 114,149 and 71,533; apricot, 3,522 and 5,869; plum and prune, 4,183 and 10,536; cherry, 12,291 and 11,981.

Chelan—Apple, 578,388 and 1,243,193; pear, 42,744 and 50,622; peach, 122,969 and 52,022; apricot, 20,172 and 20,569; plum and prune, 10,670 and 4,953; cherry, 30,134 and 14,188.

Columbia—Apple, 81,496 and 21,000; pear, 5,784 and 3,000; peach, 12,882 and 2,000; plum and prune, 3,880 and 800; cherry, 5,192 and 500.

Douglas—Apple, 14,862 and 22,389; pear, 4,902 and 14,771; peach, 5,065 and 28,242; apricot, 1,046 and 6,487; plum and prune, 1,041 and 2,519; cherry, 2,106 and 6,458.

Ferry—Apple, 14,267 and 23,739; pear, 712 and 756; peach, 1,321 and 2,681; apricot, 369 and 210; plum and prune, 1,221 and 876; cherry, 1,392 and 1,429.

Franklin—Apple, 4,310 and 37,405; pear, 8,086 and 17,778; peach, 2,586 and 10,404; apricot, 142 and 728; plum and prune, 240 and 941; cherry, 546 and 2,204.

Garfield—Apple, 23,865 and 6,000; pear, 4,164 and 2,000; peach, 26,451 and 1,500; plum and prune, 7,406 and 500; cherry, 4,445 and 200.

Grant—Apple, 15,500 and 110,700; pear, 800 and 29,100; peach, 8,500 and 29,200; apricot, 500 and 4,700; plum and prune, 400 and 6,400; cherry, 200 and 7,900.

Kittitas—Apple, 30,000 and 144,800; pear, 2,400 and 16,300; peach, 500 and 2,300; plum and prune, 1,800 and 700; cherry, 1,700 and 600.

Lincoln—Apple, 58,654 and 22,644; pear, 9,544 and 7,653; peach, 19,597 and 20,289; apricot, 893 and 499; plum and prune, 5,868 and 496; cherry, 3,429 and 1,797.

Okanogan—Apple, 158,667 and 688,868; pear, 3,675 and 12,480; apricot, 1,450 and 16,412; plum and prune, 5,285 and 6,486; cherry, 2,800 and 11,457.

Spokane—Apple, 595,076 and 1,299,806; pear, 27,338 and 8,902; peach, 32,500 and 6,704; plum and prune, 48,375 and 942; cherry, 46,304 and 9,834.

Stevens—Apple, 125,624 and 199,052; pear, 8,387 and 15,852; peach, 11,524 and 14,330; apricot, 1,231 and 1,856; plum and prune, 11,738 and 2,880; cherry, 6,582 and 9,618.

Walla Walla—Apple, 90,845 and 106,278; pear, 8,096 and 3,000; peach, 7,318 and 5,000 cherry, 3,630 and 1,000.

Whitman—Apple, 106,750 and 49,544; pear, 1,145 and 7,383; peach, 68,750 and 25,138; apricot, 2,880 and 3,715; plum and prune, 26,500 and 4,335; cherry, 5,955 and 4,720.

Yakima—Apple, 642,032 and 1,241,739; pear, 247,222 and 350,506; peach, 461,729 and 226,065; apricot, —— and 210; plum and prune, 18,383 and 27,262; cherry, 16,664 and 15,989.

Mr. Huntley says that many orchards have an earning capacity far in excess of the average noted, also that others are unprofitable and will continue to be so on account of lack of proper care, inadequate facilities for marketing and unsuitable trees. He urges growers to specialize in the fruits adaptable to the soil and the climatic conditions in their particular localities, adding:

"It has been found that apples flourish to the greater extent in the higher altitudes, where the seasons are best defined, a dormant winter being essential for the setting and development of strong buds. The best peach districts are in the medium and lower altitudes, where the soils are warm and higher atmospheric temperatures prevail throughout the year.

"Small fruits of all kinds and pears, prunes and cherries have the greatest adaptability of all fruits to a wide range of conditions, both from the standpoint of commercial production and domestic use.

"The American varieties of grapes have a wide range of adaptability, succeeding almost within the range of both the apple and the peach, excepting in the colder localities, and where the prevailing soil temperatures are low. The European varieties of grapes are confined in Washington almost exclusively to the Columbia and Snake river valleys from Wenatchee southward and from Clarkston westward to where the Columbia river reaches the Cascade mountains. Plantings of European grapes in these localities which have passed through a test of years have furnished a commercial product equal in quality to the best varieties of the same class raised in California."

Washington. AUGUST WOLF.

A HEAVY CROP ON A YOUNG APPLE TREE IN EASTERN WASHINGTON.

Peach growing in Delaware is "coming back," according to recent reports. It is claimed that the pests that attack the peach there can be successfully overcome. Yellows? Force the trees to bear themselves to death—and then let them die in peace.

A Pear Tree that "came back"

The amount of money your orchard returns to you depends upon the productiveness of the trees. If your fruit trees are not producing up to their capacity (and most orchards do not) you should look into the

Davey Tree Experts' Work

You cannot do your best if anything ails you—neither can your fruit trees. The diseases and cure of fruit trees are specialties of the Davey Tree Expert Co. Do not let inexperienced and unscrupulous men endanger the productiveness and perhaps the lives of your trees. Ask these men to show you credentials proving them to be qualified. All graduates of the Davey Institute of Tree Surgery carry such testimony and are employed by the Davey Tree Expert Co.—**WE NEVER LET GOOD MEN GO.** We want to send you FREE our books on tree surgery —They contain information that YOU SHOULD HAVE —Information that will put money in your pocket. Write at once and tell us about your orchard troubles —We can help you.

The Davey Tree Expert Co.
265 Cherry Street KENT, OHIO
Branch Offices: New York, N.Y., Chicago, Ill., Toronto, Can.
Canadian Address: 630 Conf. Life Bldg., Toronto, Can.

Representatives Available Everywhere

Both for $1.50

We reproduce herewith one of the cover pages of Better Fruit, published at Hood River, Ore. This is the leading horticultural magazine of the Northwest, and we have made arrangements with the publishers of Better Fruit, whereby we can offer that paper one year in connection with The Fruit-Grower one year, for $1.50, a $2.00 value.

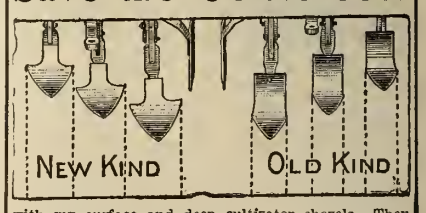
The Fruit-Grower.....$1.00
Better Fruit.....1.00
Regular Subscription Price.....$2.00

Both One Year $1.50

This special clubbing offer holds good until June 1, 1912, only. Send in your order now.

THE FRUIT-GROWER, St. Joseph, Mo.

Save the Corn Roots



with my surface and deep cultivator shovels. They scour where others won't, leave the ground smooth, handle and run very easy for boys and horses. Your money will be returned if shovels don't please. Send for booklet.

CHAS. BURMEISTER
SUTHERLAND, IOWA

Harvey Bolster Springs

prevent damage to eggs, garden truck, fruits, live stock on road to market. Make any wagon a spring wagon. Soon save cost—produce brings bigger prices—wagon lasts longer—horses benefited—thousands in use—"my wagon rides like auto" says one. Get a pair at dealers. If not at dealer's write us. Insist on Harvey's. 40 sizes—fit any wagon—sustain any load to 10,000 lbs. Catalog and fistful of proofs free.

HARVEY SPRING CO., 7361 7th St., Racine, Wis.

WESTERN METHODS IN EAST

Readers of the Fruit-Grower are acquainted, by reputation at least, with Rev. W. J. Sanborn, formerly of Palisade, Colo., who returned to his old home in New Hampshire a year or two ago, and who is introducing Western methods in fruit culture in that district. Mr. Sanborn wrote us that he would plant one-year trees, give good cultivation, and would even install an irrigation plant if necessary. He began his work last spring, and sends us the following report of the first year's work:

"Character of the Soil—Quite sandy; considered by most people to be nearly worthless. Surface ranging all the way from two to twenty-five feet above the level of the lake. Nearness to the lake is a frost protection on account of early, heavy fogs. No rocks, but many bushes, stumps and trees all of which were removed.

"Preparation of the Soil—Plowed twice and harrowed three times from September 1 to December 1, 1910; thoroughly disced in the spring of 1911; holes dug deep and wide and filled with surface soil, after placing tree at proper depth which is about two inches deeper than in nursery. Great care exercised in firming soil around the roots. Before setting the trees removed all mangled and bruised roots, sprinkling the wet roots with dust to keep them from drying out as the distribution is made for setting. Tops cut back to twenty-four inches and all later branches removed (as soon as they appear) except those actually needed for the tree top. Refused absolutely to set anything except year-old trees. In five years you will have a better and larger tree than when two- and three-year-old trees are set.

"Cultivation—(a) When? Every two weeks and at the height of the growing season every ten days. Be sure to cultivate after every rain or heavy shower, just as soon as your soil will permit, and thus you will place the point of evaporation the depth of your dust mulch below the surface where the amount of escaping moisture will be diminished from 75 to 90 per cent. (b) Why cultivate? Because of the conservation of moisture just mentioned. Destruction of weeds. Weeds are the most expensive crop a person can grow. Cultivate because of plant food set at liberty. Cultivate for soil aeration; poisonous gasses set at liberty. Growth of the tree greatly increased by careful and constant cultivation. Remember that every inch added to the growth of your yearling trees means a dollar five years hence.

"I must add a word in regard to the relation of irrigation and cultivation. Cultivation is irrigation. One method of conserving moisture. Not fully realizing the value of repeated cultivation, I bought a pump, engine, discharge pipe, etc., paying nearly $1,000 for the outfit and I have the engine unrated. The constant stirring of the soil kept the moisture, rising from the level of the lake, just under the surface so that I had plenty of water while the "fellows who considered me a little off" found their crops really perishing because of the drouth.

"Results—One tree in a hundred died; or out of 1300 trees 1287 are alive. The greatest growth that any tree made was a Champion peach. Three and one-half feet. The majority of the trees grew over two feet. Some of the peach trees and many of the 400 cherry trees have blossom buds for 1912. Just before the ground froze I plowed the orchard throwing the soil up around the trees. Next spring I expect to level the soil again. I put a tree protector around every tree; protecting it from rabbits, mice, etc.

"To help pay expenses I set 2,000 currant bushes, 2,000 raspberry bushes, 1,000 blackberry, 7,000 strawberry plants, one acre of asparagus as fillers. I am testing 30 varieties of strawberries, beginning with the earliest to the latest so that I ought to have strawberries for eight or ten weeks.

"I want to say that New England is preeminently a fruit growing country, especially the apple. One can go out into the fields, pastures and even into the woods or forests and find trees with apples on them—trees that no one ever saw. If apple trees will grow this way without care what can we not expect when they are cared for with the most scientific, up-to-date methods? There is large opportunity for the fruit grower who knows and who cares on the so-called abandoned farms of New England. The Western methods of fruit growing are, as far as tried, a great success in New Hampshire. W. J. SANBORN."

Apple Packing School at Massachusetts Agricultural College.

Great interest has been shown in the two weeks' packing school just completed at Massachusetts Agricultural College. This novel school was planned and managed by Prof. F. C. Sears, head of the department of pomology. Instruction in packing apples in boxes was given by Mr. John Castner, of Hood River, Ore., who spent the past apple season in New England, packing apples and demonstrating apple packing at the New England Fruit Show, and at various other horticultural meetings.

The packing school was limited to 40. This registration was quickly reached, with applicants turned away, in spite of the fee of ten dollars which it was necessary to charge to cover the expenses of instruction and of material used. Among the students were some of the leading fruit growers and orchard owners of the state.

The boxes used were all of the regulation Hood River size and shape, of dimensions 10½x11½x18 inches. The fruit was grown in the college orchards. All the various packs were illustrated and practiced by the students, who were taught the best methods of sorting apples quickly and accurately, how to choose the style of pack best suited to various sized apples, and how to turn out a pack that should be faultless in alignment, bulge, height of ends, uniformity and compactness.

One or two lessons were given in barrel packing, and the packing exercises were diversified with a program of valuable lectures on the growing and marketing of fruit, and by round-table discussions of orchard matters.

The members of the school organized themselves as a class, chose officers, and raised a fund to purchase a plate glass apple box for demonstration purposes, to be presented to the Department of Pomology, Massachusetts Agricultural College.

On the last day of the school, a contest in box packing was held, for which seven prizes had been offered by enthusiastic friends. The winners, in order of excellence, were as follows: L. J. Reynolds, Greenwich, Conn.; E. F. Putnam, East Hampton, Mass.; W. E. Lord, Newfield, Me.; H. Mead, North Andover, Mass.; Winslow Clark, Shoreham, Vt.; W. N. Wallace, Amherst, Mass.; R. A. Messerli, North Andover, Mass. H. G.
Amherst, Mass.

Staking Tomatoes.

A bulletin issued by the Georgia Experiment Station gives some interesting results from tests of staking and training tomato plants. One plat was pruned to one stem and tied to a stake with raffia; plat 2 was pruned to two stems and tied to stake; plat 3 was pruned to three stems and tied to stake; plat 4 was neither pruned nor staked. Plat 3 gave the highest yield, and plat 2 gave a higher yield than the unpruned, unstaked plat. The bearing season of the pruned, staked plants was much longer than that of the plants left to care for themselves. The fruit on the staked, pruned plants was likewise larger and more free from defects.

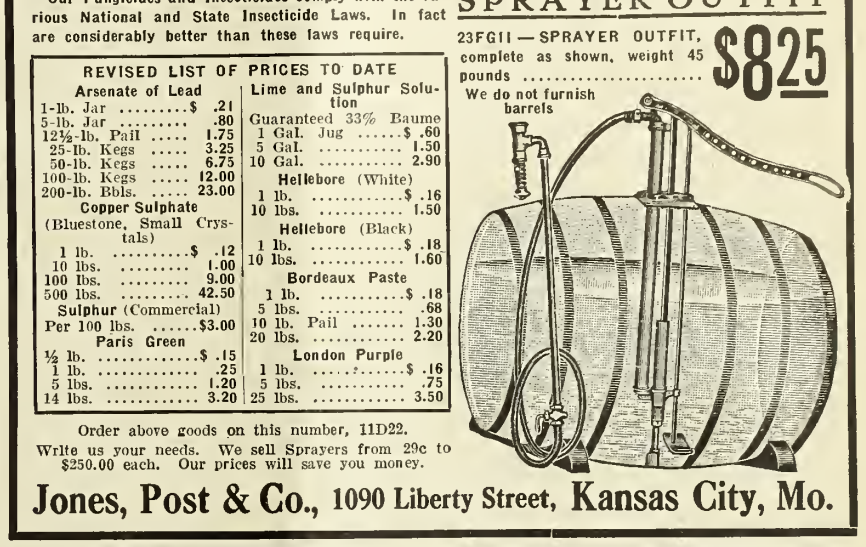
The authors of the bulletins conclude that for the home garden and for limited trucking areas, where earliness of maturity and length of season are important considerations, it will pay to stake and prune tomato plants. In growing tomatoes for canneries, the extra yields will hardly justify the extra expense.

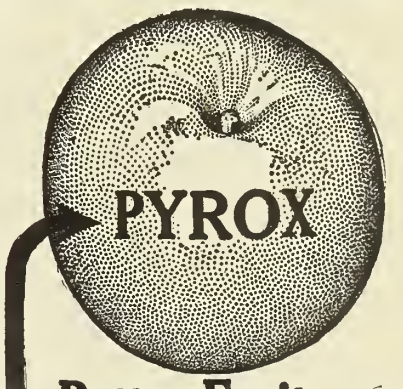
Tomatoes for Canning.

Matchless and Stone tomatoes are two of the best varieties to grow for canning purposes. They ripen evenly to the stem, make few small tomatoes and do not change color during processing. Four ounces of seed will supply enough, and sometimes more plants than will be needed for setting an acre.

Hale Gets an Expert Packer.

As manager of his large apple and peach orchards at Seymour, Conn., J. H. Hale has obtained the services of George N. Cresswell. Mr. Cresswell is an expert at packing apples in boxes, and formerly lived at Hood River, Ore. All of the apples which entered in the New York state display at the recent land show in Madison Square Gardens were packed by Mr. Creswell.





Better Fruit

SPRAY WITH PYROX

NO WORMS. Pyrox kills all leaf-eating insects, codling moth, canker worm and kindred pests.

NO SPOTS. Pyrox prevents or destroys fungous growths, scab, blight, rot, etc., thus producing beautiful,

PRIZE QUALITY fruit. Leading fruit growers and exhibitors like Hardy of N. H., Repp Bros., also Barclay, of N. J., Tyson of Penn., have used Pyrox for years. You know *their* record. Pyrox is **THE ONE BEST** spray; smooth, creamy, free from lumps, mixes easily in cold water, doesn't clog the nozzles. It sticks to foliage even through heavy rains, remaining effective for months, thus saving expense of respraying. All ready to use by adding water.

GOOD FOR ALL FRUITS AND VEGETABLES

SEND FOR FREE BOOK ON SPRAYING with prices, etc. Also see if your dealer has Pyrox on hand. Wise growers are ordering early.

Bowker Insecticide Co.
43 Chatham St., Boston.
We also ship from Baltimore and Cincinnati.

VINEYARDS IN MICHIGAN

Soil in Southwestern Michigan Adapted to Raising Grapes—Berries Being Displaced

Grape growing is rapidly becoming one of the leading industries of southwestern Michigan, and is taking place of the former profitable berry industry. The soil of this region has been planted with berries followed by berries for so long that this crop does not thrive as well as it did. In this (Royalton) township, the soil is mostly a heavy clay and grapes seem to thrive on it, as they grow thriftily and make an abundance of wood, while the fruit contains more sugar than when grown on sandy land.

The land values here are too high for the growing of crops that do not produce large returns, and for this reason more attention is being given to grape growing. Concord is the leading variety, as it is practically the only late grape for which there is great demand. The first variety to ripen here is the Champion, but in spite of its poor quality it seems to pay well, largely because it is the only grape in its season. This is followed by Moore's Early, although sometimes ripening at the same time. This is a sweet grape, making a firm bunch, for which there is a great demand, and it is the best early variety.

Last season the grape crop was unusually large, and the harvest extended over a period of seven weeks. Fruit began ripening exceedingly early last year, and the entire harvest period was very wet, a condition that is unusual. This necessitated gathering the grapes very closely after the cutters, and all empty baskets had to be put in sheds in the evening.

Young Vineyards.

Most of the growers in setting out a vineyard use No. 1 one-year-old plants and set them in rows eight feet apart and ten feet apart in the row. This is the present method, although a few years ago the custom was to plant eight by twelve feet. During the first season corn or potatoes are usually grown between the rows, so as to keep the soil cultivated, and give the young vines the best care. The little vines are made ready for planting by being cut back to one shoot, and have the root system shortened in. After the first year, the vines are trimmed so as to leave the strongest cane for the future stalk. It is a custom among some of the vineyardists to set the posts for the permanent trellis at the end of the first season so that the growth of the second year will be made on the trellis.

The posts are set so that there are three vines between the posts, where the vines are ten feet apart, and where they are set twelve feet apart in the rows, the posts are set so that only two plants will be between posts.

In our own work we always let the young vines run on the ground the second year, and plant corn between them, so as to better maintain the cultivation. After the first season we find a good plan to put a couple of forkfuls of manure around each plant, as the vines make better growth.

Stretching the Wire.

Most growers use for their trellises the No. 10 grape wire. We have found the easiest method of stretching the wire is to put the roll on a four-arm apparatus, made of two-by-fours, such as the telephone companies use. This is put on a stone boat and drawn by a horse to one end of a row. The horse is unhitched, the wire fastened to the singletree, and the horse driven up the row and around the post at the other end, and coming back to the stone-boat. The wire is disconnected and put through a hole bored in the end post, where it is then fastened to a ratchet and loosely stapled to the posts along the row, but is not stretched tight. The second strand of wire is handled in the same manner, and fastened to a ratchet as was the first, thus making two strands of wire for each row. The upper wire is at the top of the posts and the second at twelve to twenty inches lower, and the posts are four and one-half feet high. In setting the posts it is necessary that they be set at least three and one-half feet deep, to prevent them from being heaved out during the winter, although in the clay land the posts do not heave, while in the heavy black soils the frosts always heave them.

Cultivation.

In the spring as soon as the soil is fit to work, the grapes are plowed to the rows, making a dead furrow between the rows. A one-horse plow is used for this operation. At about the latter part of May or first of June the soil is turned back, and worked down with a tool called a "grape hoe." A horse is hitched to this implement, and while the horse walks through the middle of the row, the tool hoes the soil under the vines, and in the rows where the ordinary cultivators cannot reach. By means of a dodging wheel, with which the implement is provided, it never hits a vine if the driver tends to his business. It requires a very slow horse to do this work, and if one has not a slow horse, there will be danger of tearing off all of the vines and not doing good work at the cultivation.

This grape hoe is followed by a hand hoe and any soil or weeds that have not been worked are stirred, and the sprouts removed from the base of the vines.

After the hoeing has been finished a disc is run through the vineyard to put the soil in better tilth, and this is followed by a spring-tooth harrow. This is repeated after a heavy rain, or every ten days. When the weeds begin to get high in the rows the grape hoe is called into action and turns them under.

Cover crops are sown just before the last cultivation, or about the middle of August. Nearly everything has been tried for this purpose, but last summer we tried oats. This grew tall enough by the time the foliage of the grapes fell in autumn to catch the leaves. Then the oats were killed by the first freeze, fell to the ground and took with them the foliage of the vines. Oats are objected to because they do not add nitrogen to the soil, but they serve an admirable purpose in holding the foliage of the vines and there is no better fertilizer for a plant than its own foliage.

One very good cover crop of this locality is the "chickweed," which is self-sown. It is liked by all grape growers, and grows quite extensively in this vicinity. It grows no matter whether it is plowed under or not, and stays green all winter. It grows flat and close to the soil, but holds the grape leaves well.

Spraying.

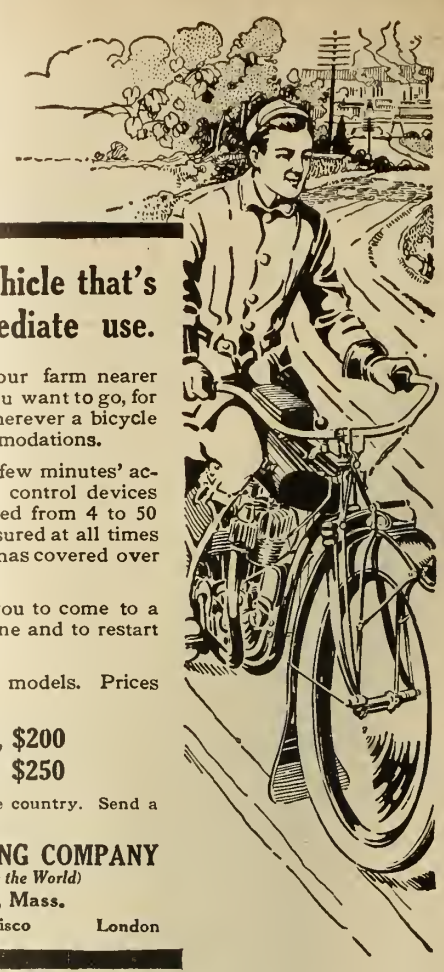
This is one of the most necessary things to do to get a good crop of grapes. Bordeaux mixture is the material most extensively used, and is applied three or four times during each season. To this is added four pounds of lime and one-fourth pound of Paris green to each fifty gallons of water. These materials control the black rot, and what few foliage-eating insects that might be troublesome, but in general the rose beetle is of little trouble here, except in sandy soils, and the grape root worm is as yet unknown in this section.

Harvesting.

The eight-pound basket is the standard package of this section. The baskets are generally bought in the spring when they are the cheapest. Then at idle times during the summer the handles can be nailed on and the baskets be made ready for use. One man can ordinarily nail the handles on one thousand baskets in a day, although with a stapling machine this number can be more than doubled.

The grapes are packed as they are picked. Each picker has a light table of sufficient height to work on, and when the baskets are filled they are

The Indian Motocycle



Have on your farm a vehicle that's always ready for immediate use.

THE Indian Motocycle brings your farm nearer to town—nearer to anywhere you want to go, for business or pleasure. It will go wherever a bicycle can go and requires no more accommodations.

You need no mechanical skill. A few minutes' acquaintance with the Indian's simple control devices enables you to master it. Any speed from 4 to 50 miles an hour. Complete control assured at all times by a twist of the wrist. The Indian has covered over 30 miles on 1 pint of gasoline.

The Free Engine Clutch enables you to come to a standstill without stopping the engine and to restart without running or pedaling.

14 Important Improvements in 1912 models. Prices reduced $50.

4 H. P. Single Cylinder, $200
7 H. P. Twin Cylinder, $250

On sale at 1,200 agencies throughout the country. Send a postal for free 1912 catalog.

THE HENDEE MANUFACTURING COMPANY
(Largest Motorcycle Manufacturers in the World)
823 State St., Springfield, Mass.
Chicago Denver San Francisco London

SHERWIN-WILLIAMS NEW PROCESS ARSENATE OF LEAD

This Arsenate of Lead is a safe, sure and economical arsenical poison for fruit-tree spraying.

Safe, because it contains a minimum of free or uncombined arsenic which, if in excess, causes burning of the foliage and occasional soil poisoning.

Sure, because it has the maximum amount of arsenic, the poisoning agent, which will combine with lead in an absolutely safe material.

Economical, because of its finely divided condition and great fluffiness, causing it to spread evenly over the foliage and carrying with it excellent adhesive qualities.

It costs just as much to spray with poor-quality material and, when the results are considered, you lose money on the "few-cents-cheaper-kind."

There's an S-W Agent near you who can supply your requirements promptly. Write for his name.

Sent free

This valuable spray book of 120 pages, fully illustrated, will be sent to any fruit-grower free of charge for the asking. It contains special information which will save you money on your spraying operations.

THE SHERWIN-WILLIAMS CO.
INSECTICIDE AND FUNGICIDE MAKERS
667 CANAL ROAD CLEVELAND, OHIO
1248

YOUR CROPS
can get more nitrogen out of one single sack of
Nitrate of Soda
than out of a two-horse wagon load of manure. The Nitrogen in Chilean Nitrate of Soda is 100% available and is *immediately* so the day you apply it! It produces
More powerful growth and healthier, bigger plants. Easy to handle, clean, cheap, odorless, free from fillers.
Write to us for valuable free literature on the crops that mean a living to you. A post card will bring it to you.
Dr. William S. Myers Director of Chilean Propaganda 17 Madison Ave., New York
NO BRANCH OFFICES

VIRGINIA·APPLE·ORCHARDS
PAY BIG PROFITS
N&W RY
$350.00 on long time and easy payments buys a ten-acre Apple Orchard tract in "The Beautiful Shenandoah Valley of Virginia." Other farm and fruit lands $15.00 per acre and up. Write now for last issue "The Southern Homeseeker," other interesting literature and low excursion rates. Address, F. H. LaBaume, Ag'l Agt., Norfolk & Western Ry., Box 3031, Roanoke, Va.

set under the rows to be gathered later by the orchard wagon. This wagon has a flat bed and the grapes are piled on it, one layer deep and hauled to the packing shed. While on the wagon, the baskets are counted, and a record made of the number each cutter has packed.

At the packing shed the lids are put on the baskets, each lid bearing the stamp or label of the grower or association. Then they are piled on a wagon that will hold 500 or more baskets, weighed, hauled to the station, where they are inspected, counted and finally packed in the refrigerator cars. When the wagon has been unloaded into the car, the driver is given a slip bearing the grower's name, gross weight, variety, car number, car initials, and signed by the car loader. The wagon then drives back to the scales, is reweighed and the net weight of the grapes determined. If the grapes do not weigh up to stand- and the grower is docked. After the net weight of the grapes has been determined the weighmaster issues a slip to the grower giving such data as the number of baskets, variety, gross weight, tare weight, net weight, number of baskets, and then endorsed by the weighmaster. With this slip the grower can obtain a check in payment of his grapes from the general office of the association.

From three to four baskets of grapes, or from 24 to 32 pounds, is considered a fair crop, but last season over a large acreage the vines produced as much as five baskets to the vine, making 2,500 baskets per acre. Ordinarily, if the vines produce from 1,600 to 2,000 eight-pound baskets per acre, the growers are satisfied, and it is better for the vines. On account of the overloading last year it is quite possible that the crop this year will be small.

Pruning.

The manner in which a vineyard is pruned has a great deal to do with the size of the crop. But if a frost should happen to sweep over a vineyard just as the growth is starting all of the expert trimming does not amount to a particle so far as the fruit crop is concerned, but it will make a difference in selecting next season's runners. It is the aim of the growers in this locality to leave only four of last season's canes, and to cut off all of the rest of the wood. A great many times there are great long canes which have long spaces between the joints. They are called "bull canes," and produce very little fruit. It is best to leave canes which have short spaces between the buds, even if such canes are not so long as others. They will produce the fruit.

Pruning begins as soon as the canes have had a good frost. This is about the middle of November. Then all winter long, in cold and rough weather the men are engaged in trimming their vineyards. As they go along they always pull off the brush, because it is about the only part of the work that enables them to keep warm, and there is always more time then than when left till later in the spring.

The tying is done at any time after the pruning is completed when one can stand the weather bare-handed. The most of the tying is done during the latter part of March and first of April. It can be done by anyone who can reach the vines and understands how they are to be trained. Grape twine is used more generally than any other tying material. Some growers cut their twine before it is tied, but it seems to be a wasteful method. Most people put a ball of twine in their pocket, and bring it through a buttonhole in their coat or jacket. It is then in a handy position, and enables the tie to be made short, as well as saving twine. WM. J. BARTZ.

Michigan.

Spraying Machinery—Its Use and Abuse.

Spraying is conceded to be one of the most important operations of orchard practice. The manner in which it is done very often determines the quality of the crop of fruit that is produced. The very best results in spraying are hard to attain with the use of poor machinery.

In those sections which are best adapted to the growing of fruit, and where the industry has assumed a stage of great commercial importance, the gasoline power sprayer is much more generally used than any other type of spraying machine. To say that this machine has revolutionized the spraying business, is literally true. Had the orchardists in our fruit sections to depend today on the old-fashioned barrel and tank pumps manipulated by hand, the high degree of efficiency possible with a modern gasoline power outfit, could not be attained.

Wherein does the gasoline power spray differ from the old style of hand pump, so that its use results in greater efficiency?

In the first place, and probably of more importance than anything else, it is capable of giving a pressure impossible with a hand machine. Anyone who has worked the handle of an old barrel pump hour after hour, knows that with its use, a pressure of more than 100 pounds is almost out of the question. Our modern gasoline outfits with from two to four leads of hose, will easily maintain a pressure of from 160 to 200 pounds.

High Pressure Saves Time.

It is probably true that such a high pressure is not necessary in all cases, but it is true that by means of it more thorough and, consequently, more effective work can be done in a much shorter time and with much less effort.

Often the small orchard holder cannot afford to pay $400 for a good power machine when he can buy a barrel outfit for $20. The latter can be made to do the work well with a greater amount of time and labor expended.

There is a tendency in the fruit sections to try to get along with too few machines. There are certain times when spraying must be done immediately if good results are to follow. For example, the period when the first spray for codling-moth must be applied to be effective is never much more than ten days, or from the time when the petals drop until the calyces close. Often one machine will be expected to spray a hundred or more acres during that time. Can it be made to do it, and do it well? Let us see.

In Colorado, the average number of apple trees per acre is not less than sixty. Trees are are from fifteen to twenty-five years of age will require at least from ten to twenty gallons of spray per tree if thorough spraying is done. For one acre of trees, putting the average at fifteen gallons per tree, it would take nine hundred gallons of spray, or 4½ tanks of the ordinary (200 gallon) size.

Twenty Acres to One Sprayer.

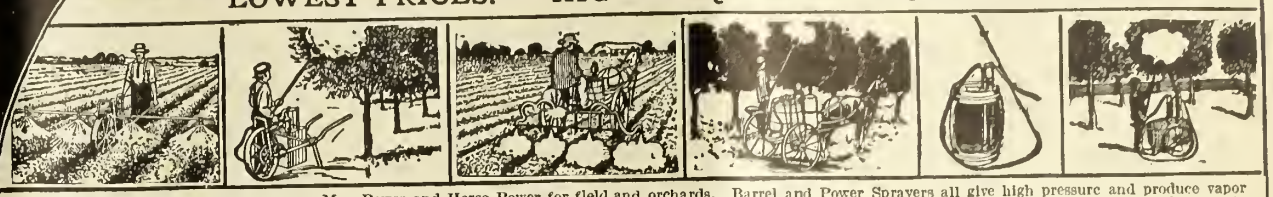
Unless water is very handy and other conveniences proportionately so, it is seldom that more than nine tanks can be applied in a day with two leads of hose, and medium coarse nozzles. In other words, only two acres of such orchard can be well sprayed in one day with one power sprayer. Allowing the maximum time of ten days for the calyces to remain open, only twenty acres of orchard can be treated with one machine. Yet I know dozens of machines that are expected to spray two and three times as much in a season, and owners of orchards so sprayed condemn the arsenate of lead used, the methods of spraying advocated by those "scientific men," and possibly everything else, except the real reason for failure, a desire to make one machine do more than it can possibly accomplish.

Besides the provision for mainten-

HURST SPRAYERS ON FREE TRIAL

NO MONEY IN ADVANCE—NO BANK DEPOSIT—PAY AFTER IT HAS PAID FOR ITSELF.

LET US SEND YOU ANY OF THESE SPRAYERS—to try for 10 days, then if you buy, you can pay us cash or we'll wait till next fall for our money.—The extra profit will more than pay for it. We pay freight. LOWEST PRICES. HIGHEST QUALITY. 5 YEAR GUARANTEE.



Quality Sprayers for every purpose. Man Power and Horse Power for field and orchards. Barrel and Power Sprayers all give high pressure and produce vapor spray that kills scale, prevents blight and scab, and rids your crops of all fungus and insect pests. Hurst Sprayers have brass ball valves and all the working parts that come in contact with the solution are made of brass. Cyclone agitation insures an even distribution of the spraying materials and best results. These sprayers are practical, made by men who know the needs of the fruit grower and farmer and know what a sprayer should do. Our long experience in the manufacture of sprayers, together with the capacity of our large factory, enable us to build the very best sprayers at the very lowest prices. We guarantee our sprayers for five full years and ship on free trial—no money in advance. That's evidence of quality. Write today—see special free offer below.

Big complete spraying guide, showing cuts of all pests, FREE TO OUR CUSTOMERS.

FREE You can get a Hurst Sprayer absolutely free if you are the first in your locality this season to send for one of our sprayers for trial. You need do no canvassing or soliciting. It will only take 15 minutes of your time. We do the work. When you get a sprayer from us you get the benefit of our 25 years' experience in manufacturing sprayers. Hurst Sprayers won the gold medal at the National Horticultural Congress spraying machine contest. Send us a postal or mark the attached coupon and mail it to us and we will send you our fine catalog, spraying guide, and will tell you how you can get a sprayer free. Don't delay, write us at once for our free sprayer proposition and save money. H. L. Hurst Mfg. Co., 184 North St., Canton, O.

H. L. HURST MFG. CO., 184 North St., Canton, O.
Send me your Catalog, Spraying Guide and "special offer" on the sprayer marked with an X below.

.....Man-Power Potato and Orchard Sprayer.
.....Horse-Power Potato and Orchard Sprayer.
.....Fitz-All Barrel Sprayer.
.....Power Orchard Sprayer.

NAME.....
ADDRESS.....

COUPON—Fill out and Send Today

You Can Have Water on Tap Everywhere

If you have a spring, a brook, or a well, you can have water on tap in the barn, in the barnyard, in the kitchen or bathroom—everywhere you need. It will save you, your wife and your men time, strength and hundreds of steps every day. Get a Goulds pump and you can keep your tank in the attic filled with little effort. That's because

GOULDS RELIABLE PUMPS

are equipped with carefully bored and polished cylinders; valves and working parts that fit—the whole pump designed to give the best possible service and to *last*.

We make hundreds of different styles to meet every farm condition. Let us, with our sixty years' experience, solve *your* water problem. The whole subject of water supply for the farm is taken up in our

FREE BOOK—"Water Supply for the Home"

Tells the difference between pumps, how to select the right one, how to put it in, etc. You'll find it interesting and very valuable. Send for it today whether you think you are going to buy a pump now or not. Find out.

THE GOULDS MFG. CO., 40 West Fall Street, Seneca Falls, N. Y.
"Largest manufacturers of pumps for every service"

ANSBACHER'S

"Triangle" Brand

SAFE "TRIANGLE" BRAND FINE ANSBACHER'S ARSENATE OF LEAD PURE

Arsenate of Lead Paste

Fruit growers have lost thousands of dollars because the Arsenate of Lead used killed the pest, after the pest had marked the fruit.

"TRIANGLE" BRAND has the highest killing speed and a perfect record. All who use it praise its qualities of Purity, Fineness, Safety and Quick-Killing.

Perfect Quality in Perfect Packages—Steel kegs save cost and trouble. Dealers in all districts.

Write us at once for free copies of "Scientific Spraying."

A. B. Ansbacher & Company
255 Broadway New York

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing

Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*

M. BRUNSWICK & CO., Rochester, N. Y.

RIGHT NOW

Is the Time to Send for Our Price List on

Fruit Trees

Varieties True. No Disease.

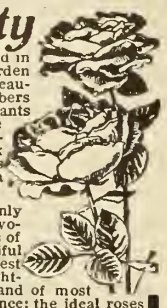
WE PAY THE FREIGHT

For Price List Address

NEW HAVEN NURSERIES

Box 125 New Haven, Mo.

American Beauty



The world renowned rose, famed in story, poetry and song. No rose garden is complete without American Beauties. We have grown immense numbers of large, strong, two-year-old plants ready to bloom this year, of these five great **Roses**—American Beauty, White American Beauty, Black Beauty, Pink Beauty and Moss Beauty, and we are making a special bargain of them.

5 Big, strong BEAUTIES, postpaid for **$1.18**

Smaller plants of the above 5 sorts for only 62c Postpaid

Think of it, only $1.18 for five two-year-old plants of the most beautiful roses, the largest blossoms, delightfully fragrant and of most velvety substance; the ideal roses for summer or winter blooming. Write today for free catalog.

IOWA SEED CO.
Dept. 74 **Des Moines, Ia.**

GET 35c TO 50c MORE PER CRATE FOR YOUR RASPBERRIES
BY PLANTING OUR VIGOROUS NEW EARLY
"BLACK PEARL"

Crops very heavily and is a firm shipper. Free from blight, never crumbles, and is five to ten days earlier than other varieties. Never winter killed. Large as the Cumberland, but more prolific, and jet black. Tested nine years under our own observation. Sells on the market for 35c to 50c more per crate than all other varieties. Write for full information. Free catalogue and price list of fruit trees, small fruit plants, ornamental shrubs and flowers.

Trade Mark, registered. Serial No. 84394.

Established 20 years.

HOLSINGER BROS.
Box 69, ROSEDALE, KAN.

Choice Strawberry Plants

$2.25 PER THOUSAND UP

All leading varieties. Our plants are grown for quality. Book how to grow them, FREE.

J. A. BAUER

Box 15 Judsonia, Ark.

STRAWBERRY PLANTS

Nearly 100 varieties to select from. We guarantee our plants to be high grade and equal to any. Write for our 19th annual catalogue.

FLANSBURGH & POTTER CO.
BOX 345 LESLIE, MICH.

$10 WILL BUY 100 Peach or Apple

First class, clean, healthy trees. No better grown. Send for list.

Sunnyslope Nursery, Hannibal, Mo.

ROSE BUSHES FREE
PERPETUAL BLOOMING

We will give away absolutely FREE thousands of beautiful Perpetual Blooming Rose Bushes, in order to introduce our great family and farm magazine into new homes. This is a bona fide offer, take advantage of it today. Write for full particulars.

MISSOURI & KANSAS FARMER,
815 Journal Bldg. Kansas City, Mo.

STRAWBERRIES Get the best plants at low prices. Send for our 30th annual catalogue. Try Bethel, best new one.
SLAYMAKER & SON, WYOMING, DELAWARE

ance of a high pressure, there are other things that the power sprayer should possess in order that the highest degree of efficiency in spraying may result.

The agitation of the liquid in the tank is an important matter. In the case of most of our sprays, the individual particles that make up the insecticide are suspended in the water. Unless a sprayer is equipped with a good agitator, these particles will settle to the bottom, thus rendering the mixture in the top of the tank weaker than it should be, and that in the bottom stronger, possibly in some cases too strong for safe application. Most of the power sprayers are equipped with suitable agitators, and none should be purchased unless it is known that it is efficient in this respect.

Take Care of Machine.

It is needless to say that the care of spraying machinery should never be neglected. The man who pays $400 for an outfit cannot well afford to let it stand out over winter where metal parts will rust, where the tank will dry out and deteriorate, if it is a wooden one. Too often, gasoline engines are ruined because water is left in the cooling jacket until cold weather comes on. It freezes there and the engine is useless until another cylinder is purchased.

Much of the trouble with a gasoline power sprayer could be prevented if care were exercised in the fall to clean the outfit thoroughly, to drain the engine, to care for the nozzles, leads of hose, etc. Then, in the spring, another careful overhauling ought to put it in such shape that there should be little trouble during the spraying season.

Not only should all this be done, but always after a lime and sulphur or other caustic spray is used, the machine should be thoroughly cleaned by running clear water through it, including hose, rod and nozzles. The spray will not only injure different parts of the machine, but will also harden and small pieces will clog nozzles when again used.

The power sprayer is a high priced piece of machinery, but it is an effective piece of machinery, when properly handled. Its usefulness can be greatly decreased by improper care.

GEORGE P. WELDON,
Colorado Experiment Station.

Poor Country Roads Are Expensive.

That the farmers of the United States could save $2,000,000,000 a year by a system providing more direct dealing with the consumer is the assertion of B. F. Yoakum, chairman of the Frisco lines, in an interview just made public. Mr. Yoakum is a member of the executive committee of the American Association for Highway Improvement, and has been taking an active part in the work that the association has been doing towards bringing about a complete system of improved public highways in the United Sates.

"The total business of the steel industry," said Mr. Yoakum, "measured by the factory value last year, was $550,000,000; the total oil business was $175,000,000; lumber, $1,200,000,000; sugar, $350,000,000, and tobacco, $175,000,000. These are supposed to be the greatest businesses of the country, and yet the same year the total value of agriculture alone amounted to nine billions of dollars.

"Nine billion dollars is a lot of money. It is the one great item of our national resource. In connection with this great wealth producing business, it is certainly conservative, figured from any standpoint, to say that on the nine billion dollars farm value crop the producers should receive two billion dollars more money than they are now receiving.

"These two billion dollars saved would mean to the farmers a two billion dollar saving on a nine billion dollar crop. The two billion dollars we could save, by going more direct from the farmer to the consumer, by means of better roads, a parcels post system, etc., nearly equals the factory value of all steel, lumber, oil, sugar and tobacco sold in the United States last year. It is more than the combined revenues of France, Italy and Germany. It is more than double the yearly cost of running our own government. It means to the farmers a dividend of more than $2 for every minute that has passed since the birth of Christ.

"The whole country, therefore, should take an interest in the movement for bettering the roads of the United States. There is not a man, woman or child in the country who would not be benefited by an improved system of highways. The country would become richer and more prosperous and everybody would benefit. The cost of living undoubtedly would be reduced."

Apple Box Holds a Bushel.

At the recent land show held in St. Paul a lot of Northwestern apples were on exhibition. A gentleman who evidently had a bad case of "grouch" went to the show, not to see the exhibits, as he himself admits, but to look for a fruit package which would hold a bushel. According to his own statement, published in a St. Paul daily paper, he did not find one.

The apple growers from Washington did not argue with this man for one minute. They went to the state commissioner of weights and measures for Minnesota and obtained from him a "sealed" bushel basket. In the presence of this commissioner and one of his assistants a commercial box of apples was opened, and the contents filled the basket so that it was well rounded up. The box contained a heaping bushel of fruit.

The apples were from the Methow Valley, in Washington, and the dimensions of the box are 18 inches long, 11½ inches wide, 10½ inches deep, inside measurements, making total content 2,173.5 cubic inches. The standard Winchester bushel contains 2,150.42 cubic inches, so that if there were no swell at the top and bottom of a box of apples, there would still be a full bushel in a box of these dimensions. The box used in Colorado is even larger than this box, so that all talk of boxes not holding a bushel is in error, so far as most fruit districts of the West are concerned.

How to Care for Weak Crotches of Trees.

Many trees have weak limbs and develop bad crotches. In some cases these result from injudicious pruning, while often they are the expression of the natural habit of the variety. A familiar sight on our streets is the leaking of the large crotches of cottonwoods. There is a strain at the point where the two large limbs meet, hence a partial splitting, making an opening from which the sap exudes. This leakage is unsightly; furthermore, weak crotches of trees are dangerous to life and property. Especially is this true in our climate with its high winds and heavy, wet snows.

In most cases weak crotches may be easily braced. There is a right and a wrong way to do this. It is not uncommon to see the two parts held together by a chain or iron band. These will serve the purpose for a while, but subsequent growth and increase in the thickness of the tree will cause injury. The portions of the tree, bound, will gradually become choked to death. The food which is made by leaf is obobstructed in its course down the stem. As a result, more wood is formed above the band than below, causing a bulge and ultimately the death of the part affected.

A better method of strengthening a weak crotch is to run an iron rod through the two limbs which form the undesirable crotch. A hole is bored through the two limbs a short distance above the crotch. This hole should be made to fit the rod as nearly as possible; this hole will not injure the tree. The rod should have a large head at one end and be threaded for a large nut at the other. The rod is inserted and the nut screwed up tightly. A one-inch rod will support a tremendous strain, but the size will depend, of course, upon the size of the limbs to be braced.

W. W. ROBBINS,
Colorado Agricultural College.

BIG MONEY for You in Gardening

Here's a 100 page book of letters from Successful and Expert Gardeners giving the inside Secrets of how they **make gardening pay big.** Tells how you can

Make $400. An Acre

I'm giving this book free with orders for $2.00 worth of seeds—otherwise 25c, which will be refunded on first order. Its worth more to you than all the text books in creation.

FREE TO MY Customers

Tells how to overcome obstacles, and how these people grew **big crops in a dry year,** and made gardens of all sizes pay. Get your copy; also free catalog. Write today.

HENRY FIELD
Box 15
Shenandoah, Iowa.

16 CENT SEED SALE

10,000 KERNELS OF Selected FERTILE SEEDS for 16c

1750 Lettuce	1000 Celery
750 Onion	100 Parsley
1000 Radish	500 Cabbage
100 Tomato	1000 Carrot
1750 Turnip	100 Melon

1700 Brilliant Flower Seeds, 50 sorts

Any one of these packages is worth the price we ask for the whole 10,000 kernels. It is merely our way of letting you test our seed—proving to you how mighty good they are.

Send 16 cents in stamps to-day and we will send you this great collection of seeds by return mail. We'll also mail you free our great 1912 catalog—if you ask for it—all postpaid.

JOHN A. SALZER SEED CO.
208 South Eighth Street La Crosse, Wis.

If you act quick, there's yet time to get Evergreens, Shade, Timber, and Fruit Trees for Spring Planting

Evergreens can be planted up till middle of May—other trees till the first. We'll rush shipment and guarantee stock to reach you in good growing condition.

Write or Wire Collect for Our 1912 Planters Guide

If you don't have it. It won't pay you to let the planting go over a season. You need this year's growth in your windbreak, home planting and orchard. We supply the finest material in the world. If you intend planting, better write or telegraph us.

D. HILL NURSERY COMPANY, Inc.
Balsam Street Dundee, Illinois

PRICES RIGHT—FREE CATALOGUE—NO AGENTS
Three Hundred Acres of All Kinds of
SMALL FRUIT PLANTS
Most complete assortment in America. Guaranteed true to name. Wholesale and Retail.
SELIGMAN PLANT CO. · SELIGMAN, MISSOURI

TREES TRUE TO NAME SOLD DIRECT
to planters. Ask for Catalogue.
BOONVILLE NURSERIES, Boonville, Mo.
Peyton Bros. & Barnes

CIDER PRESSES

THE ORIGINAL MT. GILEAD HYDRAULIC PRESS produces more cider from less apples than any other and is a

BIG MONEY MAKER

Sizes 10 to 400 barrels daily, hand or power. Presses for all purposes, also cider evaporators, apple-butter cookers, vinegar generators, etc. Catalog free. We are manufacturers, not jobbers.

HYDRAULIC PRESS MFG. CO.,
(Oldest and largest manufacturers of cider presses in the world.)
51 Lincoln Avenue, Mount Gilead, Ohio

FARM FENCE

11½ cts. a rod for a 26 in. high hog fence; 16 1-2c. a rod for 47 inch high stock fence; 28c a rod for a 50-inch heavy poultry fence. Sold direct to the farmer on **30 Days Free Trial.** Special barb wire, 80 rod spool, **$1.40.** Catalog free.

INTERLOCKING FENCE CO.
BOX 50 MORTON, ILLINOIS.

Get the Best Write us today for our remarkable offer on **Monarch Hydraulic Cider Press** —allsizes—guaranteed strength and capacity. Also Gasoline and Steam ENGINES, Threshers, Saw Mills. **Free Catalog** Write for it today

MONARCH MCHY. CO., 642 Hudson Terminal, New York

THE CLIPPER

There are three things that destroy your lawns: Dandelions, Buck Plantain and Crab Grass. In one season the "Clipper" will drive them all out.

Clipper Lawn Mower Co.
Dixon, Ill.

Advertisers like to know what paper is giving the best service for money expended. You can aid them materially if when writing, you mention **The Fruit-Grower**

ANOTHER VIEW ON SPRAYING

No article published in The Fruit-Grower in a long time attracted as much attention as the one in January issue on "Spraying for Codling Moth at Morrisania." We have had dozens of letters from subscribers on this subject, and some of our good friends report having good results from spraying from somewhat different methods. Our good friend, Joe A. Burton, Orleans, Ind., one of the best apple-growers in that state, writes us as follows:

"I read your leader in the January Fruit-Grower with much interest. Although I don't agree with all your claims, I do think it was the clearest and most comprehensive expose of spraying I ever saw.

"Much of the spraying done is poorly done. I have realized this in our own work, and wonder that we have gotten such good results. I can explain it only by the inference that what you regard as the prime essential in a successful operation is not an essential at all. I refer to the coarse, driving spray. That it is essential for the poison to be lodged in the calyx tube is apparent. Whether it is necessary for it to be in the inner tube is a question. If it is necessary, whether it must be driven there by force is another question. We have never used a coarse spray, nor taken the pains to spray from every direction as you properly insist on. Have just aimed to make a complete fog in the tree. Our results have been good so far as first brood, or entry at calyx is concerned. In 1910 we had less than one per cent of worms at gathering time. In 1911 we had almost none of the first brood, but lots of the second. The set of fruit was light in 1911. There was enough fruit in neglected orchards to accommodate the first brood but none for the second. So the moths came over onto us. But to get back to the point; the essential kind of spray. Our fruit has been protected from the first brood of moth. We have used no coarse spray. We have not sprayed from all directions. Have observed by actual trial that a coarse spray or even dipping in water will not leave a deposit in the outer tube. A fine spray will. You cannot wet a goose by dipping her in water, but a dew will wet her the same as it will the grass. Then with a coarse spray unless you strike the calyx, fair and square, and drive the water into the inner tube you have left no poison there, while the gentle mist may pile up even on the outside and roll over and dry in the tube. While the apples will get much protection from a mist striking them sideways, or from behind, I consider it much the best for them to have a fair, square dose. It would be very costly to spray our large Grimes trees as you suggest; 50 gallons of material per tree would not suffice. I suggest that next year you try a well-applied fine mist to a few trees and report."

Just a few words in reply to Friend Burton: There is no one royal road to success. No one can say that his way is the only good way to grow fruit, and he is a foolish man who takes this stand. At the same time, we believe that the coarse, driving spray for first application for codling moth is the thing. Mr. Burton may get good results from using a fine mist-like spray, but if there is a little wind he will have great difficulty putting his mixture just where he wants it. A coarse spray with great pressure can be put where you want it, even in a pretty strong wind.

As for the necessity of putting the poison in the inner tube, it may not be necessary, but if there is likelihood of having rain we believe it is safer to use sufficient force to drive it there; once there, it cannot be washed out. What has been the experience of others on this point?

M. L. Branham, Independence, Mo., writes that the article in our January issue is likely to be misleading, and that if growers in the Middle West were to follow the same plan the cost of spraying would be too great. Mr. Branham writes that he has been spraying for a number of years and has controlled leaf-eating insects, and last season thought he had controlled codling moth, but found he was mistaken; he had a small crop, and fruit was very wormy. He says his mistake was in not spraying for the late brood, and they took the crop. Mr. Branham writes further:

"I do not see why a person wants to stop at the trees and have men walk around each tree with long entension rods. Too much time is lost in this way. I can spray any tree that is headed low, like our trees in the Middle West, without ever stopping except to fix the machine or to fill the tank. I drive between two rows, and two men sit on the tank, which puts them on a level with the middle of the height of the tree, and they work large bordeaux nozzles from top to bottom of the tree. With three large nozzles on each side one can cover the tree evenly from top to bottom, but if it should be thought that not enough mixture has been applied, one can go over the tree again from the opposite direction.

"I can spray my sixty-acre orchard, if I have no bad luck with the machine, in three days. I have used two gallons of mixture per tree and good results followed."

Friend Branham may be able to thoroughly and effectively spray a tree without stopping the team at every tree, but I don't see how it can be done. At least, we couldn't do it at Morrisania. We may be wrong, but have always found it necessary to stop at every tree and go all around it, in order to reach the calyx cups of all the apples. We are glad to have these comments, however, for all are agreed that spraying is necessary—it is only needful to determine the best way to do the work.

Perhaps one word should be said about the way our trees are planted at Morrisania. They are planted 100 trees per acre, so that the number of trees to be sprayed make it impossible to spray as large an acreage as where trees are planted farther apart.

Custom Spraying in Missouri.

The other day The Fruit-Grower had a visit from a Fruit-Grower reader, Mr. John Rundle, Rock Port, Mo., who told us his experience in doing custom spraying. Mr. Rundle and his sons have three power sprayers, which operate in Northwest Missouri every season. As a rule the orchards sprayed are about ten acres in size, and they are located close together.

Messrs. Rundle use Bowker's Pyrox in their work, and results have been very satisfactory to the owners of orchards and fairly remunerative to the men doing the work. The charge is 10 cents per tree for each application, three applications to be made during the season. Mr. Rundle furnishes the machines, all materials and the men to do the work. The owners of the orchards board the men and teams while the spraying is being done. Mr. Rundle says that the applications are not as heavy as those recommended in the fruit districts of the Rocky Mountain states, but that worms and diseases are controlled.

Mr. Rundle is now representing the Bowker Insecticide Company, Boston, Mass., on the road, pushing the sale of Disparene and Pyrox, so that his sons will have actual charge of the work this season. He reports more interest in the subject of spraying this year than usual, and looks for a fine crop of apples in the Middle West, where he has been visiting the fruit districts. Everywhere Mr. Rundle goes he urges fruit farmers to read The Fruit-Grower, for he says that in his work he has found it the one good fruit publication.

Peaches seem to have been killed over a wide range of territory during the past severe winter, but other tree fruits promise abundant yields. Small fruits will likely be scarce, from effects of last summer's drouth.

IN THE ROGUE RIVER VALLEY

MEDFORD DISTRICT SOUTHERN OREGON

THERE ARE now 65,000 acres of Apples and Pears rapidly approaching maturity. Many of these orchards are on the market this spring, and it is our business to sell them, always at owners' prices. Familiar with this valley for nearly thirty years, and identified with the orchard business for twelve years, we can spot every good orchard in the valley, and the man buying through us always gets the benefit of all we know of the properties and of the necessities of the owners. The buyer is entitled to and does receive first consideration.

There are better investments offering this spring than ever before since our company was organized. The practical orchardist knows that the best buys in orchard lands are always the young bearing orchards, which bring immediate returns, regardless of price. No district on earth can show better orchards than we are offering this spring, or more carefully handled; every detail looked after; every tree a model.

In the Rogue River Valley

the regularity of crop production is such that six times within the last twelve years a bumper crop in this valley has found a market in the East at exceedingly high prices, a combination of circumstances which accounts for the phenomenal returns so frequently realized here.

The best of our orchards are but just coming into bearing, and we will sell orchards this spring which will yield record-breaking crops within a few years. A wonderful crop is set on the trees for 1912, and many a Medford District orchard will break its own record this season.

THE ROGUE RIVER VALLEY

Is not confined in its production to Apples and Pears. Cherries, the big, rich, thick-meated kind, with carrying quality to reach Chicago; Apricots better than California's; Peaches superior to Georgia's; Plums, Prunes, Figs, Nectarines and Table Grapes with keeping quality fitting them for the holiday trade, are all on our commercial lists. And with it all a beauty of surrounding and a climate excelling any other section in America. "Lest you forget," note the following range of temperature at Medford during January, 1912, and compare with the weather wherever you may live. The temperatures indicated are above zero:

	6 a. m.		6 a. m.		6 a. m.
Jan.	1, 1912...28	Jan.	11.....39	Jan.	21.....31
Jan.	2.....26	Jan.	12.....43	Jan.	22.....55
Jan.	3.....24	Jan.	13.....45	Jan.	23.....36
Jan.	4.....22	Jan.	14.....43	Jan.	24.....55
Jan.	5.....27	Jan.	15.....42	Jan.	25.....45
Jan.	6.....32	Jan.	16.....41	Jan.	26.....41
Jan.	7.....37	Jan.	17.....37	Jan.	27.....34
Jan.	8.....36	Jan.	18.....40	Jan.	28.....42
Jan.	9.....45	Jan.	19.....34	Jan.	29.....35
Jan.	10.....39	Jan.	20.....41	Jan.	30.....31

WHAT WE OFFER INVESTORS

Are opportunities to the practical fruit grower which he will not find elsewhere. Not only is the experimental stage past here, but the great acreage set to the right varieties renders it possible to procure just what is wanted. The great expense of developing sixty-five thousand acres of orchard compels some of the owners to sacrifice. **The man who must sell is the man from whom to buy.** There never has been such an opportunity presented before to practical orchardists in any fruit district.

We have on our lists the best in this valley, from the five-acre tract just set to the bearing orchard which can be counted on for a sweepstakes car the present season. Write for our lists, and do not delay in doing so.

On arriving at Medford, do not fail to call on us at Room 407, M. F. & H. Block. Take elevator. Both 'Phones.

We have also on Our Lists Some Exceedingly Good Alfalfa Ranches and Stock Ranches, which appeal to "the man who knows." The best Alfalfa Lands will eventually go into orchards, but meantime the fruit growers must have hay.

THE ROGUE RIVER LAND COMPANY

NOT ONE DISSATISFIED CUSTOMER IN TEN YEARS' BUSINESS

BOX 336, MEDFORD, OREGON

Clean Cultivation Pays

—if it doesn't cost too much to keep the orchard clean. It pays to consider cost of cultivation, and it is necessary, therefore, to use up-to-date implements.

The Kimball Cultivator

is the best tool you can use for stirring the soil. It covers a wide sweep, works well up under the branches of loaded fruit trees, leaves the soil level, keeps down weeds, and maintains a perfect dust mulch. No implement made equals it for use in an irrigated orchard, for the soil is smooth after cultivation, just right for running irrigation furrows.

Thousands of Kimball cultivators are now in use by the best orchardists in the country. James M. Irvine, editor of The Fruit-Grower, uses two of them at Morrisania Ranch, in Colorado, with perfect satisfaction. Ask him what he thinks about them. Write today for catalogue and prices, and be ready to cultivate your orchard at the right time. You make no mistake when you buy a Kimball—and your order should be placed as quickly as possible. Send today for full information.

W. A. JOHNSTON, Manufacturer
The Dalles, Oregon

Soil Salvation

25 years practical experience back of Bostrom's book entitled "*Soil Salvation.*" After studying it, you will know how to make useless land grow as big crops as the best, by **DITCHING, TILE DRAINING, TERRACING** or **IRRIGATING.** This book is **FREE** to interested land owners who write for it—it fully explains the use of

The Bostrom Improved
$15 FARM LEVEL
With Telescope

A perfectly SIMPLE, ACCURATE and DURABLE outfit which includes Level, TELESCOPE with magnifying lenses enabling you to read target a quarter of a mile or more away—also Tripod, Graduated Rod, Target, Plumb Bob and full instructions. Is used and indorsed from the Atlantic to the Pacific for all sorts of farm leveling.

If not sold in your town, will ship direct on receipt of price, $15—or will ship C. O. D., subject to examination. Money back if not satisfied AFTER ACTUAL FIELD TRIAL.

Shipping Weight 15 lbs.

Bostrom-Brady Mfg. Co.
151 Madison Ave., Atlanta, Ga.

STANDARD **AMERICAN** THE WORLD OVER
WELL AND PROSPECTING DRILLING MACHINERY

43 years' successful operation. Used in nearly all parts of the world. We make a complete line of Drilling Machines and tools for every condition of **earth** and **rock** drilling and **mineral** prospecting. Complete catalogue No. 120 showing over 40 styles of machines **free.**

THE AMERICAN WELL WORKS
General Office and Works:
Aurora, Ill.
Chicago Office: First National Bank Building.
Joplin, Mo., office: 115 West Fifth St.
Kansas City, Mo., office: 301 Scarritt Bldg.

Raise Water for Your Fruit —all you need when and where required—with an automatic

RIFE RAM

Costs little to install—nothing to operate. Raises water 30 ft. for every foot of fall. Land lying above canal or stream supplied with water. Pumps automatically day and night, winter and summer. Fully guaranteed.

If there is a stream, pond or spring within a mile, write for plans, book and trial offer, free.

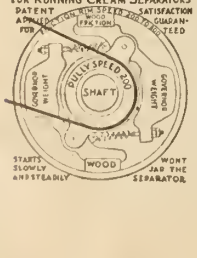
RIFE ENGINE CO.
2521 Trinity Bldg., New York

MAKE BIG PAY DRILLING WATER WELLS

Our Free Drillers' Book, with catalog of Keystone Drills, tells how. Many sizes; traction and portable. Easy terms. These machines make good anywhere.

Keystone Well Works
Beaver Falls, Pa.

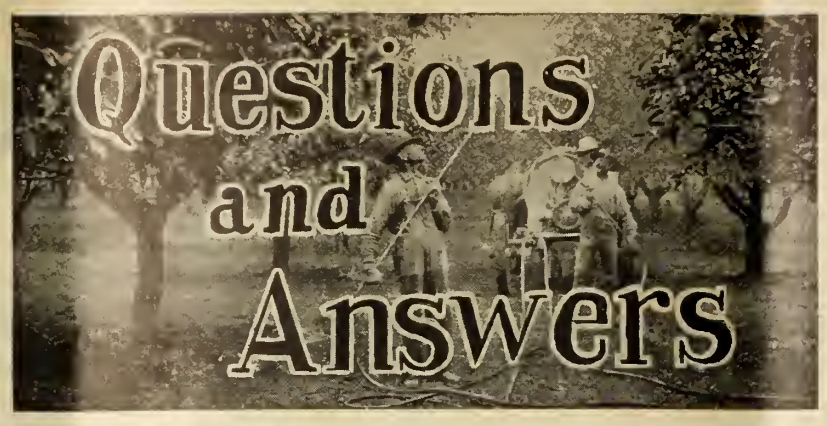
FOR RUNNING CREAM SEPARATORS



DAIRYMEN

to run your cream separator right with your gasoline engine you must have a STRITE Governor Pulley. "If It's a STRITE, It's right." Ask your dealer or write us direct.

STRITE GOVERNOR PULLEY CO.
347 S. 3d. Minneapolis Minn.



Fertilizer for Strawberries.

Question: I have about three acres of strawberries, mostly set out last spring, and all looking nice. They are in matted rows, as under irrigation that system gives best results. The soil is naturally rich, a black loam, with a tendency to get sticky when wet, but when cultivated does not bake.

Some of this land has been in alfalfa for thirty years previous to setting to berries, while other portions of it has been in corn, tomatoes, etc., and has had a little stable manure. Strawberries do very well here, for as long as five years without resetting if kept free from weeds. As it is impossible to get enough stable manure I want to know what commercial fertilizer I can use to best advantage. Also the time of application and the amount I can use to get the largest crops. —H. T. C., Colorado.

Answer by Prof. E. R. Bennett, Colo. Exp. Sta.: We are somewhat skeptical of the feasibility of using commercial fertilizers in Colorado. All of the experiments that we have carried on up to the present time, both at Fort Collins and other places, as Greeley, have not shown results that would warrant their use. Nearly all our soils are rich in phosphates and potassium salts and where we rotate with alfalfa we have at least a fair supply of nitrogen. We do get returns from any good, decomposed compost. For your proposition at Golden, I would favor the use of stock-yard compost from Denver rather than any of the so-called commercial fertilizers. Of course, if you can get stable compost nearby, it will do just as well. This may be applied at any time, although if it can be put on before growth starts in spring, the plants will probably receive more benefit than later in the season.

A Spray Pump Query.

Question: I am hunting for a spray pump that can be used for bordeaux mixture, lime-sulphur and arsenate of lead. Can I use a compressed air pump to force the material from the barrel into the trees? If so, where can I get one? Bordeaux mixture rapidly corrodes a steel lined pump and lime-sulphur eats a copper lining. I want a pump that will stand both of these.—J. H. R., Kentucky.

Answer: You can use either bordeaux mixture or lime-sulphur in any spray pump if you will use care to wash out the pump at the close of each day's work. Pump enough clean water through the pump so as to wash out all of the spray mixture and then drain the pump.

A compressed air sprayer suitable for orchard use is made by the W. H. Owen Co., Springfield, Ohio, and you will find their machine advertised in the last issue of The Fruit-Grower. If you will write to them, mentioning The Fruit-Grower, they will gladly send you a circular describing their machine.

Light In Relation to Insects.

Question: What color of light is most attractive to insects? We know that all insects seek the light. Is there any difference in their reaction to the different colors—blue, green, red, yellow, etc. Or is the behavior of insects approximately the same toward light of any color?

Do the various winged insect pests of the orchard, e. g., the codling moth, curculio, etc., usually lay their eggs at night, or do they do their work wholly in the daytime? Are these insects generally more active during the daytime, or vice versa?—F. B., Oklahoma.

Answer by Prof. L. Haseman: So far as I know there have never been any carefully planned experiments to determine whether or not one particular color of light is more attractive to insects. If there is a difference in the attraction of different colored lights it would probably not hold good for all forms of insects. The essential thing in attracting insects to light is to have the light as brilliant as possible.

All insects are not attracted by light. Some are even repelled just as strongly as others may be attracted to light. The casual observer who finds numerous insects coming to the light has no ground for concluding that all insects are thus attracted. The work which experiment station investigators have done with lantern traps have shown very conclusively that a very large percent of insects are never attracted to them at all. In fact, these trap lantern experiments have shown that of the insects caught a greater proportion of them were beneficial kinds than of the pests. The codling moth, for example, is seldom, if ever, attracted to light. The work carried on by the the Cornell Experiment Station during two seasons showed that a very small number of these insects were caught in these lantern traps.

There is no definite rule that can be laid down with reference to the time at which winged insect pests of the orchard deposit their eggs. Some are night flying insects and deposit their eggs at night; others are active only during the day, and deposit their eggs during that time. The codling moth is one of the night flying insects and begin to deposit eggs late in the evening, just about dusk, and continues most active throughout the early part of the night. The curculio, on the other hand, is most active during the day, remaining inactive at night. The same holds true with reference to the general activity of insects. As a rule the moths fly only at night, while some of the beetles are most active at night, and others during the day. There is no definite rule one can follow in this respect.

What Varieties to Plant.

Question: I have one and one-half acres of land that would be called second bottom. It has two and one-half feet of soil and under that is sand for two or three feet. It is protected on the west from storms and overflow by a bluff, one hundred feet high. It is exposed on the north and east but has a bluff on the south the same as on the west. The ground is well tiled. I want to use it for fruit and chickens, and would like for you to tell me what to put on it in the way of raspberries, apples or cherries. I presume that peaches would not do well on it, on account of the liability to freeze.—O. C. C., Illinois.

Answer by Prof. C. S. Crandall: I see no reason why the land described should not be well adapted to fruit, provided the slope to the north and east is sufficient to insure good air drainage. Two and one-half feet of soil, on sand sub-soil should supply quite ideal conditions.

The matter of what to plant is so much a matter of personal preference, and the ultimate uses to which the products are put may vary so much, that it is difficult for anyone unacquainted with the details of the situation to give advice. If it is desired to plant apples, the question would arise as to whether summer or winter varieties are most desirable. If it is desired to plant for home use only, a succession of varieties extending thoughout the season would be desirable. For the central section of the state, the early varieties that are grown to the greatest extent are the Yellow Transparent, Oldenburg and Benoni. For fall use, Wealthy and Fameuse; for early winter, Jonathan and Grimes Golden; for late winter, Willow Twig and Winesap.

If it is desired to plant cherries, I would suggest that the planting be confined to sour varieties, and of these the best are Early Richmond and Montmorency.

Strawberries, raspberries and other small fruits could be grown between the apple trees for several years, without detriment to the trees, provided proper cultivation is given. In some parts of the country, notably in California, strawberries are made to return a good profit during the years required for the development of the permanent apple trees. This practice can be followed anywhere, but in order to make it profitable, the best of care must be given.

Planting should be done in the spring. Fall planting is sometimes practiced, but as a general rule through the central part of Illinois, the spring planting is much to be preferred.

Why Do the Leaves Stay?

Question: Why do the leaves stay on my apple trees all winter? They seem about as firmly fixed as in mid-summer. It prevents me from spraying. Not a leaf has fallen all winter. These trees were sprayed once with lime-sulphur last year, early, the only spraying they ever received. Some scale shows on these trees and on the fruit they bear. The trees are about ten years old. They are Baldwin, Greening, Spy, Snow and Banana. They all seem to hold their leaves.—F. T. T., Michigan.

Answer: It is quite the usual thing for apple trees to hold their leaves until they are weathered and beaten off by the storms of winter, if the leaves are vigorous at the time of the first freeze in autumn. We have had quite a number of letters similiar to yours and the writers of some of them seem astonished to think the trees did not shed their foliage earlier in the fall.

What seems to be the reason for the trees holding their foliage in a perfectly green and vigorous condition up to the time of the winter freeze, is that the past summer was so dry the leaf destroying fungi such as scab and leaf spot could not develop. This resulted in the leaves remaining in a healthy condition throughout the entire summer, then, as they were still perfectly vigorous at the time of the freeze, they had no opportunity of shedding.

The leaves of the apple tree are like some species of the oak. If the leaves have not dropped when the first freeze comes they will hardly fall until they are beaten off by the wind and rain during the winter. If the trees are in a thrifty condition and have not grown too late, the matter of their holding their foliage through the winter would indicate that the trees have had an exceptionally favorable growing season and should be in better condition for the next year than they would have been had their foliage been destroyed and dropped as usual in September or October.

Frost Cracks in Trees.

Question: The recent cold weather has caused a number of my apple trees to crack open. The wood of the trunk has split from the roots up into the branches, and the cracks extend into the heart of the tree. How can such wounds as these be treated?—E. L., Illinois.

Answer: The cracks which you speak of in the trunk of your fruit trees have been caused by the intensely cold weather. Cracks of this sort form because the outer layers of the wood shrink faster in the cold than do the inner layers. When the outer layers become too tight there is nothing for them to do but crack open, forming a split. In the native forest trees especially those which are standing out in the open, it is not unusual to find cracks of this nature extending from the ground many feet up into the top of the tree.

The best thing to do is to cut the

YOU CAN MAKE $500 Monthly

acting as local representative of the Land Department of the Kansas City, Mexico & Orient Railway, the largest railway under construction in the United States. This new transcontinental railway has reached and is is now aiding in quick development of the

LOWER PECOS VALLEY

in Southwestern Texas. This rich, fertile valley is being developed rapidly and millions of dollars are being invested in this new country. Irrigated land, town lots and agricultural lands for sale; $300,000 irrigation project just completed. The land department of the Orient Railway leads in this development and settlement work and needs able, reliable and energetic representatives in every locality. The people are interested—they are headed toward this new undeveloped empire. It is the last and best Southwest—a land of expanding irrigation projects, alfalfa ranches and fruit farms. Fortunes are being made from the soil by settlers who are already there.

Live wires needed in every locality. A dignified and responsible position for those who will co-operate with me. Evidence of good standing necessary. Positions of importance created for hustlers; no salary; good commissions.

Write quick for free literature and full details showing liberal plan of co-operation.

F. A. HORNBECK, Land Commissioner,
Kansas City, Mexico & Orient Ry., Kansas City, Mo.

Apply Western Methods to Eastern Orchards

Subscribe today for the ONLY magazine devoted EXCLUSIVELY to Fruit Growing and Irrigation in the West.

Learn the Secret of Success and how Western Fruit Growers realize as much per box as Eastern Growers get per barrel on their Apples.

Western Specialists write each month exclusively for us. If YOU contemplate coming West, you should certainly subscribe for the only periodical that sets forth the advantages and inducements of EACH important fruit district without favoritism.

Printed on heavy book paper and profusely illustrated.

Send 25c Today, Coin or Stamps, for Three Months' Trial

The Intermountain Fruit Journal
Subscription Dept., Denver, Colo.

Do You Want a Home in the Beautiful Ozarks

of Missouri, in the Famous Strawberry Land

Apples, Peaches, Pears, Grapes, Raspberries, etc., all grow excellently. Ideal location for the dairy and poultry business. We offer for sale 60,000 acres of land in 40-acre tracts or more, cheap and on easy terms. Located in Stone and McDonald counties. For further information address

McDonald Land & Mining Company
Rooms 301-2 Miner's Bank Building
Joseph C. Watkins, Mgr., JOPLIN, MO.

New York Home Farms

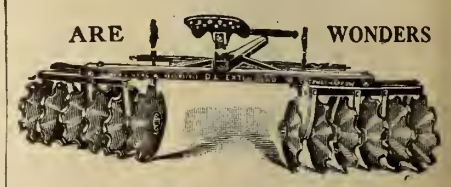
Improved and for sale by us at low prices and on easy terms. For specimen list address or call upon **B. F. McBURNEY & CO., 703 Fisher Bldg., Chicago, Illinois, or Room 309, Bastable Block, Syracuse, N. Y.**

BEAUTIFULLY ILLUSTRATED BOOKLET ABOUT DELAWARE

the State of red apples, luscious peaches, strawberries and of ideal homes. Address **State Board of Agriculture, Dover, Dela.**

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. **Hanson & Soa, Hart, Mich.**

CLARK'S
Cutaway Harrows
ARE WONDERS



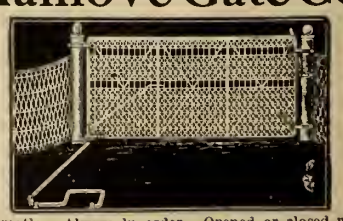
Two-Horse Single Action Cutaway Orchard or Farm Harrow with Extension Head. Reversible; also One-Horse Size; and the Only Double Action Harrow that can hold the rear gangs Rigid to follow in the exact Center of ground left by Front Gangs. The Only Genuine Double-Action Steel Jointed Pole Cutaway Harrows. (Can be Extended.) For orchard or farm.

Protection For Damaged Fruit and Shade Trees

Save those already damaged by rabbits, borers, pruning or other causes. Write for catalog to

E. G. MENDENHALL
Fruit Growers' Supply Depot
Box 300 Kinmundy, Illinois

Manlove Gate Co.

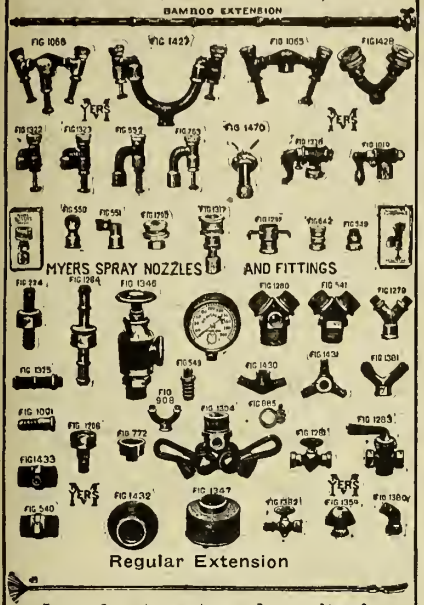


Automatic. Always in order. Opened or closed without assistance or stopping. Adds beauty, value, safety and convenience to any home, and is approved by Government for Rural Routes.

Manlove Gate Co., 23 West Huron St., Chicago, Ill.

MYERS SPRAY PUMPS

ALL KINDS NOZZLES, FITTINGS, ETC.



Regular Extension

In order to get good results from Spraying, you will need Good Spray Pumps and Accessories. You can find in THE MYERS LINE the best Spray Pumps, Nozzles, etc., in the market. Something for every need.

ASK YOUR DEALER OR WRITE US

F. E. MYERS & BRO.

160 ORANGE ST., ASHLAND, OHIO

FITZ Overalls

Are made to fit all from a three-year-old boy to a 500-pound man. The FITZ reserve stock is always complete—insist on FITZ

If your home dealer does not carry FITZ overalls write and we will see that you are supplied. Free FITZ book on request.

Burnham-Munger-Root D. G. Co., Kansas City, Missouri.

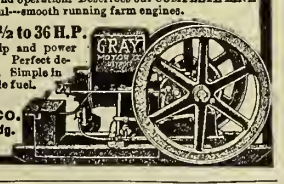
Get the Big Catalog of GRAY ENGINES

Contains valuable information about Stationary Engines—their design—construction—care and operation. Describes our COMPLETE LINE of high grade—powerful—smooth running farm engines.

All Sizes from 1½ to 36 H.P.

Material—workmanship and power absolutely guaranteed. Perfect design. Easy to operate. Simple in every detail. Use little fuel. Shipped complete.

GRAY MOTOR CO. 3355 U. S. Motors Bldg. Detroit, Michigan.



FREE to GAS ENGINE OWNERS

Write us and we will tell you how to overcome your IGNITION TROUBLES.

BOOK! Let us explain to you how to double the efficiency of your engine and save money. MOTSINGER DEVICE Mfg. Co., Mfrs. of Ignition Specialties, 117 Scott Ave. Lafayette, Indiana, U.S.A.

Rubber Stamps

You need Rubber Stamps for marking berry boxes, crates, stationery, etc. Send for free catalogue.

Gardner Office Supply Co. SPRINGFIELD MISSOURI

FOR SALE

Young apple orchard of fifty acres, in Morgan County, Missouri. Eight years planted. Orchard is in good condition. For further information and terms address

J. H. SKINNER & CO., Topeka, Kan.

Don't Wear a Truss

FREE

STUART'S PLAS-TR PADS are different from the truss, being medicine applicators made self adhesive purposely to hold the parts securely in place. No straps, buckles or springs—cannot slip, so cannot chafe or compress against the pubic bone. The most obstinate cases cured. Thousands have successfully treated themselves at home without hindrance from work. Soft as velvet—easy to apply—inexpensive. Awarded Gold Medal, Process of recovery is natural, so no further use for truss. We prove what we say by sending you Trial of Plapao absolutely FREE. Write TODAY.

STUART'S ADHESIVE PLAS-TR-PAD PATENTED SEPT. 12 1908

TRIAL OF PLAPAO

Address—PLAPAO LABORATORIES, Block 220 St. Louis, Mo.

bark away from the margin of the crack. Do this when you do your pruning this spring. It will not be necessary to take off much bark, a strip a quarter or half an inch wide along both sides of the crack will be ample.

This will prevent the bark from rolling back and will make a wound that will heal much more quickly than if the bark is not thus treated. As the crack extends to considerable depth into the wood of the tree, it makes an opening which affords opportunity for wood destroying fungi to gain entrance and eventually cause a hollow trunk.

It would really be worth your while to fill these cracks with cement and tack a little strip of zinc over them after the manner described in the article on doctoring trees which you will find in the January Fruit-Grower.

How Should Old Trees Be Cut?

Question: Should apple trees thirty or forty years old be cut back as hard as was described in a recent article about the demonstration orchards of the Massachusetts Agricultural College?—E. H., Indiana.

Answer: It is a hard matter to say whether trees thirty or forty years of age should be cut back as close as was done in the demonstration orchard of the Massachusetts Agricultural College. The severity of the cutting is a matter of judgment and must be regulated altogether by the condition of the trees. Without seeing your trees, it is entirely impossible for us to say how much cutting should be done, whether light or heavy. You must be your own judge. By reading the pruning articles over again and then observing your trees closely, you may easily determine how much wood needs to be taken off of your trees.

Nitrate on Strawberries.

Question: Will nitrate of soda, when applied to a strawberry bed, injure the plants if it gets on the foliage or crown? How is the best way to apply this fertilizer?—J. W. H., Kansas.

Answer: The best way to use nitrate of soda on strawberry plants is to scatter it lightly along the rows. Nitrate of soda is a very powerful material, and if sprinkled over the rows so that it can fall on the crown of the plants, it will injure them in just the same way that common salt will. But if it is scattered lightly on the ground so that it does not come in contact with either the foliage or the roots, it will serve its most beneficial purpose as a fertilizer. Two hundred pounds is ample for an acre of strawberries.

What to Do For Aphis.

Question: Late last summer and in the fall there was what I presume is some sort of aphis, a green looking insect, bothering my young apple trees. When it would get a good hold on them the bark would turn dark in color and the twig stop growing. Kindly explain what this is and what to do to control it should it appear again this season.—J. K. R., Virginia.

Answer: Without seeing the insect you speak of or a specimen of its work, it is hard to say what it is or what may be done for it. If it is the green apple aphis it can be controlled with tobacco sprays and a good application of lime sulphur while the trees are dormant will help hold it in check. If you can send us one or two of the twigs which were infested by this insect, we will be glad to identify the trouble and advise you in detail how it may be controlled. If it is green aphis, you will no doubt find the little black eggs quite plentiful on the twigs now.

Mixing Varieties for Pollination.

Question: I am thinking of planting Yellow Transparent and Liveland Raspberry apple. Do you think they ought to be put on rather thin clay soil or heavy black freestone, soft and rocky loam bottom land? I have these two kinds of soil. Would you mix these varieties, or will they do all right if set in separate blocks. About what distance for these varieties? I have some one-year-old trees which have been skinned about half way around by rabbits. Do you think these trees will come on O. K., as the other trees?—A. J. M., Georgia

Answer: The Yellow Transparent and Liveland Raspberry apples will doubtless give you the most satisfaction if they are planted on elevated land where the soil is not too rich. Each of these trees grows quite vigorously, especially while young, and they are very sensitive to the pear blight. On this account they must be handled in about the same manner as pears to guard against blight. On this account the high thin clay soil would give you much better results than the rich bottom land.

These trees can be set out 25 feet apart, although on account of the upright habit of Yellow Transparent, it could be set out 20 feet apart. It is better, however, to give them more room than this.

If your nursery trees have not been too seriously nibbled by rabbits, they will doubtless come through all right. Where the injury is of considerable size, either around the trunk or up and down it, it would really be better to throw the trees away. Wounds on the trunk of young trees are objectionable since the decay gets started in the trunk at an early age and the tree is very short lived when planted in the orchard.

Transplanting Four-Year Trees.

Question: We have in our orchard about fifty cherry and 200 Japan plum trees, planted as fillers in an apple orchard. The cherry trees are three years old; the plum trees four years old. I would like to know if we can transplant these trees? I understand that orange trees six to eight years old can be transplanted as long as they are dormant. In case you think it is worth while to try, please state if the trees should be dehorned; also if the roots should be pruned. The trees are growing in loose sandy mountain loam.—D. D. W., Alabama.

Answer: Every one of your trees can undoubtedly be transplanted with entire safety. However the work will have to be done with caution. It is not an easy matter to transplant trees which have become established, but as your trees are still young, the work can be done now more easily than would be the case if they were a few years older.

As your trees have undoubtedly been transplanted once, in digging them you will doubtless find that the roots are in quite a compact ball, rather than long and rope-like. Dig the trees as carefully as possible so as to not bruise or mutilate the larger roots. Cut off any which are bruised or broken, and shorten the longer ones so that they will be of reasonable length.

There is so much difference in the size of trees of this age in different localities, and as you do not say how big your trees are, we cannot say how much to cut back the roots. On this account it will need to be a matter of your own judgment. In your locality this transplanting could have been done better in the fall than now. It would have enabled the trees to have calloused the injured roots and form a new set of feeding rootlets, but if your trees are handled carefully, you should have no trouble in transplanting at any time between now and the beginning of the growing season.

In addition to pruning the roots, it will be absolutely necessary to cut back the tops of the trees very severely. This will be necessary to reduce the amount of leaf surface the roots must support. Without knowing anything about the size of your trees or their general condition, it is entirely impossible to say how severely this pruning should be done, but in general not less than one-half of the branches should be removed.

Whether "dehorning" is a necessity or not depends somewhat on the vigor of the trees. If they have never been pruned and have long slender limbs, it would be better for the trees if they are "dehorned," as they will then form a new head. If they have been regularly and systematically pruned, this dehorning will not be a necessity. In transplanting any kind of a tree it is always safest to prune off a portion of the top so as to enable the mutilated and reduced root system to not be overcrowded.

Kind of Legume to Use.

Question: I have a large apple orchard that I think would be benefited by a leguminous crop of some kind. During each of three years I have tried to get it in clover by sowing it to oats and pasturing with hogs of all sizes. I want to try cowpeas or Canadian field peas this spring. Which would be the better, price of seed considered? Should they be pastured off with hogs or cut up with a disk harrow and left on top of the ground, or plowed under. I would rather not plow the ground on account of soil erosion. When should each be sown?—E. N. L., Illinois.

Answer by Prof. Cyril G. Hopkins: In the latitude of Adams County, Illinois, I should advise sowing cowpeas rather than Canadian field peas for the improvement of orchard soil, and from the standpoint of the soil it would be decidedly better to return the entire crop to the soil, either by thorough disking or by plowing, than it would be to pasture it off with hogs. The hogs will destroy about two-thirds of the total organic matter in the food which they eat, and it is evident that one of the primary objects in growing a green manure crop is to increase the organic matter of the soil, which will help to prevent soil erosion, as well as to increase the absorbent and water-holding power of the soil, and to supply nitrogen gathered from the air, and to liberate mineral plant food by the decomposition of the organic matter in contact with the soil. Cowpeas should be seeded early in June.

Alternate the Blocks.

Question: I want to plant four rows each of Jonathan, Grimes Golden and Rome Beauty and two rows of Delicious across a field fifty rods long. I realize the Grimes Golden are the best fertilizers on the list. Do you think it would be better to plant a row of Grimes Golden every alternate row or two, or would it be just as well to plant them in their turn near the middle of the block? If there is practically no difference in results, I would much prefer to plant the different varieties in blocks of four rows each—W. A. S., Indiana.

Answer: From the available data it seems there is no difference in the possibility of having trees cross-pollinated where blocks of four, or eight rows are alternated. It is entirely possible that every alternating row of a strong pollen producer would insure the most perfect pollination. However, it is extremely inconvenient to have an orchard planted in that manner. Where blocks of four, six or eight rows are set, the pruning, spraying and harvesting can be done far more economically than where there are but single rows.

Of the four varieties you name you have two heavy pollen producers, namely the Grimes Golden and Delicious. By putting one of these varieties in the outside block with the other in the middle, it would give you as good a distribution of pollen as would be possible.

What Kind of Berries for Colorado?

Question: Can you recommend a blackberry and a dewberry that will not winter kill in this locality, altitude 5,700 feet, in the Uncompahgre Valley, Colo.?—S. J. H., Colo.

Answer by Prof. E. R. Bennett: I am in doubt if you will find any blackberry or dewberry that will not winter kill occasionally in your location, when not given protection. I have not investigated the proposition in your district very fully, but for most low altitudes in Colorado we find that it is necessary to protect raspberries, blackberries and dewberries, etc., by laying them down and covering. I presume you neighbors can tell you more about this than I, as I know some of them have been growing berries to a greater or less extent for several years.

The Lucretia dewberry is grown more than any other variety; in fact, is the standard variety in most places. This is the one that has been grown extensively in the Plateau Valley. For the blackberry, I presume you will find Snyder or Taylor as good as anything you can get. I would advise you to test out several of the standard varieties, if you are inclined towards trying such things, and determine which are the best for your particular district. You know very much depends, in blackberry growing, on the resistance of a particular variety to the hot sun as well as to the winter cold. The cold of winter is not the thing so much to be dreaded as our open, drying weather, which occurs particularly on the western slope in Colorado.

Pecans and Orchard Grass.

Question: Can the paper-shell pecan be grown successfully in Lafayette County, Mo.? How about the so-called "hardy" English walnut? Have a piece of land

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

Caustic Balsam

IT HAS NO EQUAL

For the Human Body

—It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons Exterior Cancers, Boils Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for Sore Throat Chest Cold Backache Neuralgia Sprains Strains Lumbago Diphtheria Sore Lungs Rheumatism and all Stiff Joints

REMOVES THE SORENESS--STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

ABSORBINE

Removes Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from any Bruise or Strain; Cures Spavin Lameness, Allays Pain. Does not Blister, remove the hair or lay up the horse. $2.00 a bottle, delivered. Book 1 E free.

ABSORBINE, JR., liniment for mankind. For Synovitis, Strains, Gouty or Rheumatic Deposits, Swollen, Painful Varicose Veins. Allays Pain. Will tell you more if you write. $1 and $2 per bottle at dealers or delivered. Manufactured only by W. F. YOUNG, P.D.F. 34 Temple St., Springfield, Mass.

$584.00 Buys All Lumber, Lath

Shingles, Doors, Windows, Mill Work, Hardware and Nails needed to build this Modern Four-Room Bungalow, including Architect's Blue Print Plans and Complete Specifications.

Size—24x28, 4 Rooms and Bath

Get Our Book of Designs

Our Design Book contains more than 50 Designs of Houses, Bungalows, Barns, etc., for which we furnish all Brand New Guaranteed Material.

Mailed on receipt of 10c Postage.

Read Our Free Building Plan Offer

GET OUR WHOLESALE PRICES ON LUMBER, MILLWORK, ROOFING, PLUMBING AND HEATING PLANTS FREIGHT PREPAID

CHICAGO WRECKING COMPANY

4100 Gravois Ave., St. Louis, Mo.

Mention The Fruit-Grower.

Make Your Own Gas

The Detroit Combination Gas Machine provides the Home with a Satisfactory Gas Supply.

Gas to Light with.
Gas to Cook with.
Gas to Heat Water for the bath, laundry and other uses common to city coal gas, at no greater cost.

On the market over forty years. More than 15,000 in daily use. Our catalog will interest you. Write today for copy, and names of users in your vicinity.

DETROIT HEATING & LIGHTING CO. 472 Wight Street, Detroit, Mich.

Why Not Have The Best Light?

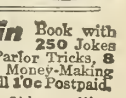
STEEL MANTLE BURNERS. Odorless, Smokeless. Make the home cheerful and bright. Three times as much light as an ordinary burner. Every one guaranteed. Just what you need! If your dealer doesn't keep them send his name and address with your name and address and we will mail you as many as you wish at 25c each. Agents Wanted everywhere.

THE STEEL MANTLE LIGHT CO. 323 Huron Street. Toledo, Ohio

FREE WATCH RING & CHAIN

We positively give to BOYS and GIRLS a BEAUTIFUL American-Made stem-wind, stem-set watch with handsomely designed case, proper size. GUARANTEED 5 YRS. Also dainty ring, set with three sparkling stones, for selling 20 jewelry articles at 10c each. Order jewelry today. When sold send $2 and we will send watch, ring and chain. We Guarantee Satisfaction.

Dale Watch Co., Dept. 48 Chicago



How to Entertain Book with 250 Jokes and Riddles, 73 Toasts, 67 Parlor Tricks, 8 Fortune-telling Secrets, 52 Money-Making Secrets, 22 Funny Readings. All 10c Postpaid.

J. C. Dorn, 709 S. Dearborn St., Dept. 42, Chicago, Ill.

that has been planted to fruit trees for about forty years. Some have died and been replaced by new trees, so that the orchard is a mixture of old and young trees. There has been orchard grass among the trees for as long as I can recollect, and the young trees do not seem to do nearly as well as they should. Insect pests are very bad. I sprayed the trees last year, but not with entire success. Would you advise plowing this orchard? Do you think the grass hurts the trees much? Do you know of any concern making spray nozzles which point at an angle from the spray rod?—H. J. R., Missouri.

Answer: It is not likely the paper-shell pecan can be grown in your locality with any degree of success. This type of pecan is of Southern origin and is scarcely hardy above the central part of Arkansas. There are a few varieties of native pecans which can be grown with fair success as far north as central Missouri, but as a rule, these do not produce nuts of as high quality as the paper-shell.

There is a hardy variety of English walnut which is growing satisfactorily and is quite productive in New York state. This nut has been advertised and written about a few times in The Fruit-Grower. It is for sale by N. Pomeroy, Lockport, N. Y. The apple orchard which you mention would no doubt thrive very much better if the land were plowed thoroughly and planted with a crop of cowpeas or red clover. Then give the trees a good, vigorous pruning and spray them thoroughly. Orchard grass or any other grass is very satisfactory where the orchard is carefully handled and the grass mulch properly cared for, but where the grass is allowed to grow at will and the trees given no care, it is hardly to be expected that the trees will do well.

Young trees planted in an old orchard very seldom give satisfaction. This is largely for the reason that young trees need different care from old ones, and also because the young trees will hardly receive as much sunlight as they should because of the shade they will get from the older trees.

Without seeing the orchard in question, it is a hard matter to say just what would really be the best thing to do. I am inclined to believe, though, that if this orchard is plowed good and deep this spring and kept cultivated until the latter part of July, then planted with a crop of cowpeas to be turned under next spring, that it would do better. In fact, the addition of the cowpeas together with the other humus that has accumulated from grass, would add a great deal of available fertility to the soil. Then by pruning the trees hard this spring, they would be thrown into a vigorous growing condition. The top could be really renewed and in the course of two or three years the orchard would be practically made over.

Left Over Arsenate

Question: Are grafted peach trees as long lived as budded? Is arsenate of lead which has been carried over from last year in a wooden bucket that has never been opened, as good as ever?—B. J. F., Mississippi.

Answer: As a rule peach trees are not grafted but are propagated by budding. This is largely for the reason the peach doesn't take a graft as easily as it takes a bud. If one has peach trees that have been grafted and they are good, strong, vigorous trees, there is no reason why they are not equally as good as budded trees, and should be equally as long lived.

The arsenate of lead you speak of should be as good this year as it was last if it has been kept in an air-tight package. It comes in a paste form and if allowed to dry out gets so hard it cannot be used with satisfaction, but if it is still pasty when opened, it is just as good as new.

New Books and Bulletins.

Principles and Practice of Poultry Culture, by John H. Robinson. Published by Ginn & Co. Price $3.

This is another volume in that notable series of books in the Country Life Education Series. While intended as a text book for agricultural college classes, the detailed treatment of each topic makes it a whole library for the practical poultryman. The subject is treated as a branch of agriculture and as a necessary permanent feature. It covers every important item relating to raising poultry; and each of the important breeds are splendidly illustrated. In fact the illustrations in the book form an exceedingly good feature, as there are more than five hundred of them, which are systematically arranged with reference to the text and to each other, showing graphically the evolution of methods and systems of poultry keeping, common appliances, buildings, etc.

Insect Pests of Farm, Garden and Orchard, by E. Dwight Sanderson. Published by John Wiley & Sons. Price $3 net.

This volume illustrates and describes most of the important insect pests with which the farmer, gardener and fruit grower must contend. The illustrations are all made from good photographs and well made drawings, so that the insects are more readily recognized. One of the admirable features of this book is that the means of control which are described are the very newest ideas. There are many good books describing insects, but for one the everyday practical man needs, none of those published thus far give such new, clean, modern means of combatting insects, as does this volume. Everyone who wants a good book on insects should not fail to get a copy of this one.

The Book of a Thousand Gardens. Published by The Henry Field Seed Co.

This is an entertaining little booklet containing reproductions of many photographs and "a bunch of letters to Henry Field by his loyal friends—his customers." These letters "being the true accounts of the trials, tribulations and successes in a dry year of something less than a thousand gardens in as many states and climates."

New Bulletins

Fancy Cheeses for the Farm and Factory, by C. A. Publow, Bul. 270, Cornell Exp. Sta., Ithaca, N. Y.

Lime-Sulphur as a Summer Spray, by Errett Wallace, Bul. 289, Cornell.

The Effect of Fertilizers Applied to Timothy on the Corn Crop Following It, by Lyon and Morgan, Bul. 273, Cornell.

The Apple Orchard from Planting to Bearing Age, by Arthur L. Dacy. Bul. 136, W. Va. Exp. Sta., Morgantown, W. Va.

The Purple Scale, by H. J. Quayle. Bul. 226, Calif. Exp. Sta., Berkeley.

Cheese and Its Economical Uses in the Diet, by Langworthy & Hunt. Farmers' Bul. 487.

Orchard Management, by C. I. Lewis. Bul. 111, Ore. Exp. Sta., Corvallis, Ore.

Proceedings of the Thirty-First Annual Meeting of the Arkansas State Horticultural Society, Ernest Walker, Secy., Fayetteville, Ark.

Annual Report of the Alaska Agricultural Experiment Stations for 1910. Office of Exp. Stas., Washington, D. C.

Transactions of the Illinois State Horticultural Society for 1911. Vol. XLV. W. B. Lloyd, Secy., Kinmundy, Ill.

Ninth Annual Report of the Vermont State Horticultural Society. M. B. Cummings, Secretary, Burlington, Vt.

The Gain in Nitrogen During a Five-Year Pot Experiment With Different Legumes, by Hartwell and Pember. Bul. 147, Rhode Island Exp. Sta., Kingston.

Field Experiments on Individual Farms, by H. L. Wheeler. Bul. 148, R. I. Exp. Sta.

Pedigreed Nursery Stock, U. P. Hedrick. Cir. 18, New York Exp. Sta., Geneva, N. Y.

Analyses and Valuations of Commercial Fertilizers and Ground Bone, by C. S. Cathcart. Bul. 241, New Jersey Exp. Sta., New Brunswick, N. J.

Hog Cholera and Swine Production. Cir. No. 1, Live Stock Commission of N. J., New Brunswick, N. J.

Twenty-fourth report of Purdue Experiment Station, Lafayette, Ind.

Report of the West Virginia Horticultural Society for 1911. John M. Millan, Secy., Charleston, W. Va.

Apple Orcharding in Ontario. Bul. 194, Fruit Branch, Ontario Dept. Agr., Toronto, Ont.

Insecticides and Fungicides, by Harcourt and Fulmer. Bul. 195, Ont. Dept. Agr.

Tomatoes, by A. G. Turney. Bul. 196, Dept. Agr.

Soil Culture and Modern Methods. Issued by Soil Culture Department of Deere & Company, Moline, Ill.

Seed Corn, by C. P. Hartley, Farmers' Bul. 415.

Report on Condition of Elk in Jackson Hole, Wyoming, in 1911, by Edward A. Preble. Bul. 40, Biological Survey, Washington, D. C.

The Place of Economics in Agricultural Education and Research, by H. C. Taylor. Research Bul. 16, Wisconsin Exp. Sta., Madison.

West Virginia as a Poultry State, Horace Atwood. Bul. 135, West Virginia Exp. Sta., Morgantown.

A Method of Budding the Walnut, by E. J. Kraus. Cir. 16, Oregon Exp. Sta., Corvallis.

Diseases of Apple Trees and Fruit Caused by Fungi and Insects, Hewitt and Hayhurst. Bul. 109, Arkansas Exp. Sta., Fayetteville.

An Improved Method of Pollination in Corn.

An Improved Method of Artificial Pollination in Corn, Collins and Kempton. Cir. 89, Bureau Plant Industry, Washington, D. C.

California Plant Diseases, Ralph E. and Elizabeth Smith. Bul. 218, California Exp. Sta., Berkeley.

The Red or Orange Scale, by H. J. Quayle. Bul. 222, California Exp. Sta., Berkeley.

Drainage of the Wet Lands of Effingham County, Ga., by F. G. Eason. Cir. 113, Office Exp. Sta., Washington, D. C.

Concerning the Relation of Food to Reproductive Activity and Longevity in Certain Hymenopterous Parasites, by Samuel B. Doten, Technical Bul. 78, Nevada Exp. Sta., Reno.

Beef Production in Pennsylvania, by W. A. Cochel. Bul. 112, Pa. Exp. Sta., State College.

Land Drainage by Means of Pumps, by Woodward and Elliott. Bul. 243, Office of Exp. Stations, Washington, D. C.

Development of Methods of Draining Irrigated Land, by O. G. Elliott, Office of Exp. Sta.

Breeding Poultry for Egg Production, Raymond Pearl. Bul. 192, Maine Exp. Sta., Orono, Me.

Heading Off Boll Weevil Panic, by W. E. Hinds, Ala, Exp. Sta. Bul. 159.

Spray Calendar, by Green, Selby and Goossard. Bul. 232, Ohio Exp. Sta., Wooster, Ohio.

Varieties of Corn in Ohio, by Gail T. Abbott. Cir. 117, Ohio Exp. Sta., Wooster, Ohio.

The Production of the Lima Bean, by Shaw and Sherwin. Bul. 224, California Exp. Sta., Berkeley, Cal.

The Movement of Nitric Nitrogen in Soil and Its Relation to Nitrogen Fixation, by Stewart and Greaves. Bul. 114, Utah Exp. Sta., Logan, Utah.

A Method of Making a Social Survey of a Rural Community, by C. J. Galpin. Cir. of Information 29, Wis. Exp. Sta., Madison, Wis

Increasing Creamery Profits by Handling Special Products and Utilizing By-Products, by S. C. Thompson. Cir. 188, Bureau An. Ind., Washington, D. C.

Practical Methods of Disinfecting Stables, by Geo. W. Pope. Farmers' Bul. 480.

The Plum Leaf Miner, by C. R. Crosby. Bul. 308, Cornell Exp. Sta., Ithaca, N. Y.

Sorghum Syrup Manufacture, by A. Hugh Bryan, Farmers' Bul. 477.

The Temperature of Pasteurization for Butter Making, by Rogers, Berg and Davis. Cir. 189, Bureau An. Ind., Washington.

An Apple Orchard Survey of Ontario County, by H. M. Martin. Bul. 307, Cornell Exp. Sta., Ithaca, N. Y.

Report on Swamp Drainage in Robeson Co., N. C., by McCrory and Mengel. Bul. 246, Office Exp. Sta., Washington.

Report on Drainage, Washington Co., Miss., by H. A. Kipp. Bul. 244, Office Exp. Sta., Washington.

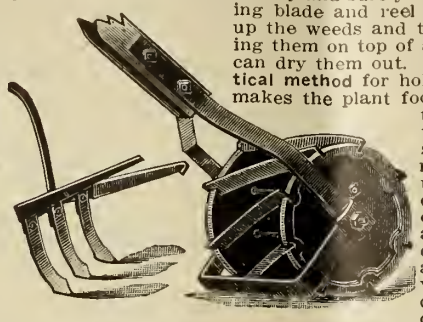
Tolerance of Eucalyptus for Alkali, by R. H. Loughridge. Bul. 225, California Exp. Sta., Berkeley, Cal.

Twenty-second Report Missouri Botanical Gardens, St. Louis, Mo.

Ask your neighbor to subscribe for The Fruit-Grower.

WHY LET WEEDS GROW

In your garden? They actually poison and check plant growth by absorbing the moisture which is needed to form the nutrient solution upon which growing plants live. Weeds are easily and surely killed by using a "Barker." The mulching blade and reel knives, working in combination, cuts up the weeds and tears the roots from the ground, leaving them on top of a level, even soil mulch where the sun can dry them out. This soil mulch is also the only practical method for holding moisture in the ground where it makes the plant food soluble, forming the nutrient solution. The "Barker" is the only garden tool which will form a perfect level soil mulch of even depth and just the right degree of granulation, breaking up the capillary attraction, holding the concentrated soil moisture at the root of the plant where it is easily absorbed and used. The Barker Weeder, Mulcher and Cultivator is very easy to operate. No complicated adjustments when changing from shallow to deep cultivation. Is constructed so that you can work right up to the growing plant without injuring the roots. One man with a "Barker" can do more work, do better work, than ten men with hoes. Made in four sizes. Inexpensive. Send name and address for descriptive folder and our special "Factory-to-User" offer. We pay freight to your station. Write today—NOW.



THE BARKER MFG. COMPANY, David City, Nebraska

Surplus Fruit Tree Stocks
AT CUT PRICES

Mahaleb Cherry, 3-5 and 2-3 mm. French Pear, either straight or branched, 3-5 mm. A few No. 1 and No. 2 Japan Pear Stocks, French Apple Seedlings, 5-7 and 3-5 mm. American Grown Apple Seedlings, No. 2 and No. 3 Quince Stocks, 5-7 and 3-5 mm.

Apple Grafts, piece roots and whole roots, all at reduced prices. Send list of wants for quotations.

THE SHENANDOAH NURSERIES
D. S. LAKE, Proprietor **SHENANDOAH, IOWA**

$5000
A YEAR FROM A TEN ACRE FARM

Is not an unusual record with small fruits when best varieties are selected and proper culture given.

Knight's Book on Small Fruits

Tells what varieties to plant and the care to be given them in order to produce these results. Send for a copy of it today, read it carefully and learn the facts about

Giant Himalaya Berry, St. Regis Everbearing Raspberry, Great Gibson Strawberry

and all of the other money-making varieties of strawberries, raspberries, blackberries, dewberries, gooseberries, currants, grapes, etc.

This book is not mere theory but the result of over thirty years of experience and study. A copy will be mailed free if you write us at once, for the edition is limited.

DAVID KNIGHT & SON **Box 100** **SAWYER, MICHIGAN**

Send Quick for Himalaya Plants and Get Prices on Other Berries

Surely you are not going to miss planting some Himalaya Berries, Strawberries, Currants and Gooseberries. You ought to plant five acres. You certainly can plant a home garden. And planting time is here.

Himalaya is the thousand-dollar-an-acre berry; plants grow thirty feet a year, do not die or freeze down at all, and bear fruit along the entire length—the one best berry for every home garden as well as for commercial berry farms.

Plants, 6 months, $2.00 doz. Prepaid.
Plants, 12 months, 25c each, Prepaid.
Plants, 18 months, 50c each, Not prepaid.
Plants, 24 months, $1 each, Not prepaid.

The 18 and 24-months plants should bear heavily this year.

Our other varieties and strains of berries are the pick of the whole known list. Many have been selected and improved during forty-four years by Mr. Mitting.

The Berrydale Berry Book tells about them all, and is well worth having. Give us your address, tell us what you want. You can plant this spring if you act quick.

Berrydale Experiment Gardens
Fruit Ave., Holland, Mich.

Don't Delay Too Long

If you have not sent for the 1912 Thorburn Seed Catalog, write for it today. It gives you a wealth of information regarding Seed selection and planting. It contains 144 well-illustrated pages and is a veritable encyclopedia of gardening knowledge and advice. It tells you all about

Thorburn's Seeds

Thorburn's Seeds have back of them a record of 110 years of fair dealing. They are the result of over a century spent in the scientific cultivation of high-grade seed stocks.

Everything that can interest you is told in this big Thorburn Catalog. Cultural directions, plainly given, guide you in every step from the preparation of the soil and the planting of the seed right up to the time of gathering the crops, all in accordance with the very best principles of gardening as proved by our 110 years' experience.

Write for this Catalog today. Better write now before you forget it. A postal card will do.

J. M. Thorburn & Co.
110 Years in Business in New York City
33-H Barclay St., New York

A CHANCE TO MAKE MONEY.

Yes, elegant Free Homesteads in the Banana district of Mexico, adjoining improved land, can still be had. Hundreds of acres are in production in this district. From 10 to 25 per cent being received from the first year's production. The market for bananas is unlimited. You are required to have five acres of bananas planted within five years. People living in the United States and Canada, can secure this land by addressing The Jantha Plantation Co., Block 925, Pittsburgh, Pa. They will have the bananas planted for you, and cared for on shares, so you need not go to Mexico at all. Bananas bear in from 12 to 16 months and should yield a profit of about $200 per acre. Producing banana orchards are worth about one thousand dollars per acre. The climate is delightful and health conditions good. Tell your friends about this chance, it is only duty to help one another. —Adv.

WATERWORKS FOR FARM

Any Farm House May Be Supplied With Running Water at Nominal Outlay

Since special articles on labor saving machinery are to be published in this issue of The Fruit-Grower, it is proper that attention should be given to conveniences which will save labor for the farmer's wife and daughters, and at the same time increase the comfort of every member of the family. Nothing that can be done about the house will save as much labor as the installation of a modern water supply system. If one could know the miles traveled by the housewife in carrying water from the pump to the house, and the miles traveled in carrying out the waste water, then one could appreciate why the first labor saving improvement made this season should be a modern water system.

And these systems would be installed by the thousand, until practically every farm home had running water, if it were only known how cheaply these plants can be installed and how effectively they can be operated.

There is a widespread movement to make country homes more comfortable and more convenient—to save labor of housekeeping—and many forces are at work. We quote from an article by Prof. F. G. Person of the Colorado Agricultural College, and this shows how the experiment stations are helping along in the good work.

"The opinion which has been so general 'that modern conveniences can be had only in the city,' is beginning to change, and instead of the country coming to the city, the city is going to the country.

"In this article, I wish to speak of the home water supply delivered at the tap in the house. With the systems that are being used today, one can have the convenience of hot water, heat, bath, etc., although living several miles from the city.

"The most essential is a source of pure water supply. This can be had from a deep well from which all surface waters have been excluded. Having obtained the supply, the next question is the pumping and storage for use when wanted.

"The pumping can be done by various methods, such as windmill, gas engine, etc. These machines are placed upon the market at prices that are within the reach of the average country home.

"In the storage of the water, the pressure system used is an important factor. If the pressure at the tap is derived from a gravity system, the storage tank must be placed high enough to give the desired force. This of course necessitates a framework support for the tank; besides, in places where the winters are severe, the tank must be protected from freezing.

"If the system of pressure is from compressed air over the water in the tank, then the tank can be placed in the basement and the factor of cold does not interfere.

"The plumbing for the house will, of course, be the same as ordinarily used. In case one does not have a range with water front, or does not care to connect to the range, gasoline gas heaters are made to supply the need.

"The point of sewage is very important. This can be taken care of by means of a well constructed cesspool. This should be dug to a gravel bed having a good flow of water through it, then walled up and well covered. Many may object to the cesspool. Of course it is not equal to an up-to-date sewer system, but if it is properly made, its drainage, etc., well cared for, there will seldom be any trouble from it. (Septic tanks are easily made, absolutely sanitary and are in every way better than the average cesspool. The Fruit Grower will shortly publish some articles telling just how to make septic tanks.—Editor.)

"Having your water supply, storage, plumbing, and sewage, you have an independent water works system which will give excellent results."

Following Prof. Person's statement it may be said that for ninety-five per cent of farm homes the compressed air system will be best. An overhead tank involves strengthening of walls in many cases, to support the additional weight. Then there is always danger of freezing. Or the tank may spring a leak and ruin the plastering of the rooms below. In a tank in the attic, too, there is always danger that mice will get in the water, for the tank is out of the way and is hard to clean out.

The modern water system is to put a tank in the cellar or in some other convenient place and force the water over the house by compressed air. These tanks are made to withstand a great pressure, and are absolutely sanitary. They can be cleaned out every day, if desired, and the water supply is free from contamination.

The pressure water systems are not expensive. The cost will depend entirely on the size of plant installed, but one which will serve the average farm home will not cost much, and the money spent for it will give greater satisfaction to every member of the family than can possibly be secured from the expenditure of the same amount for any other purpose. Every member of the family will share in the benefits, for besides saving the never-ending job of carrying water into the house, a water system will make possible a modern bath room, with hot and cold water, and a laundry room can be equipped which will save more work for the housekeepers. Then there will be other advantages of such a system: Windows can be washed more quickly and with less labor; a hydrant in the yard will enable one to wash a buggy quickly and with minimum of work; the flower beds can be kept fresh and bright, and, if desired, enough water can be provided to sprinkle the vegetables in the garden during a dry period.

In planning to save labor about the farm, therefore, for every member of the family and in trying to add to the comforts of the farm home, a water system should be installed the first thing. If the matter were left to a vote of the farmers' wives and their children, it is safe to say that they would be unanimous on this point. Investigate the modern pressure water systems and their advantages, and thousands of them will be installed this season—and all will be the better for the improvement.

Book Farmers.

Two young farmers of McDonough County, Illinois,—"book farmers" both—one of them a graduate from the Illinois College of Agriculture and the other having attended some short courses at the college for five years—were left with an 80-acre farm on which was an orchard of 175 apple trees, about 200 cherry and plum trees. The orchard was badly run down but has been brought up to pretty nearly full bearing during the past five years. The farm was used for general crops, mostly corn and ten acres in pasture.

Three years ago these young men concluded to go into dairying on a concentrated scale, using their knowledge gained at the agricultural college and from their observation of the work along these lines done by some of their relations in Wisconsin.

They plowed up most of the pasture and put it into soiling crops with which they fed their cows during the summer. There were sixteen cows in the herd and with them were running four yearlings. In June there were twenty calves to be accounted for and this entire bunch of stock was fed from April 15 to September 15 on the following acres: One and one-half acres of fall rye, four acres of oats (sowed at intervals of two weeks apart), two and one-half acres of millet, one acre of early sorghum, one-half acre of late sorghum and one and one-half acres of corn.

The eleven acres lasted until new silage was ready. They have one silo which holds about forty tons and will erect another this year of equal capacity.

The sorghum and corn are run through a cutter before being fed. The milk flow was kept up during the entire summer, although pastures in that locality were dry as a bone by August 10. This herd of cows and calves would have fared badly on fifty acres of pasture, in fact it is doubtful if the animals could have been brought through the summer on pasture alone, to say nothing of keeping up the milk flow.

Of course it took some extra work to cut up the crops the entire summer, but the experiment is accounted entirely successful for it showed that there was a saving of at least forty acres of ground. It is not hard to estimate the returns for the work of cutting and feeding the soiling crops on this place when you take into consideration the possibilities of forty acres of land saved.

For instance, if only $6 net per acre could be obtained from this land the owners of the farm earned $240 by feeding the cows soiling crops. No grain was fed at all during the summer, but each cow produced an average of five pounds of butter per week and this found a ready market in the county seat town from one to three cents above the highest retail store prices.

In addition to the advantage of this method of soiling which enables the young men to keep a larger herd of cows than by the old-fashioned pasture system, it also enables them to retain for the farm the fertility, most of which had been hitherto lost. The extra work of cutting and feeding the soiling crops made some pretty busy times during the fruit harvest, but this lasted only a few days at a time and was quickly bridged over.

Your Wife Wants Running Water in the House

Ask her and see if she doesn't desire this above every other improvement about the house. Running water in the house, with kitchen sink, neat bathroom and toilet conveniences will do more to lighten the burden of housework than any other improvement that can be made.

Our women folks are wearing themselves out carrying water into the house and out again. It's a never-ending grind—no let-up—every day, year in and year out. And think of the extra work on washday! Washing is hard work, and then to have to carry great quantities of water adds to the burden. No wonder women get sick. Think of working in a hot, steamy kitchen in winter; every pore of the skin open from the heat and the exercise; more water is needed, and must be carried from the pump in the yard. Only a short exposure in the cold is necessary, under such conditions, to produce a cold which lasts all winter, and perhaps results in pneumonia.

Your Wife Deserves to Have Her Work Lightened

Men, listen to this: If you or your hired man had to carry water for the stock, like your wife has to carry it for use about the house, you would put in a water system at once.

Now, why not help your wife? Don't you think more of her and aren't you more interested in her comfort and health than you are in saving work for the hired man or even in saving your own labor?

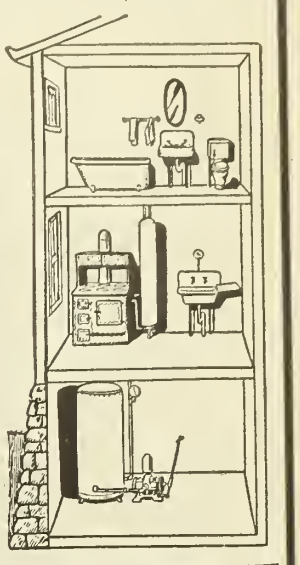
And note this: Running water in the house means comfort for every member of the family. Think how much better you will feel if you can take a cooling bath after a hard day in the field. It will refresh you until you feel like a new man. The children will be better satisfied to remain on the farm if they have these conveniences.

You can have water for sprinkling the lawn and the flower beds, and in a dry season can carry your garden through the drouth.

A Water System Will Not Cost Much

Everyone who reads this advertisement, who has not running water in the house, would at once install a water system if he only knew how slight the expense will be. **A good Water System is not expensive.** We furnish all materials at manufacturer's cost. All our goods are absolutely guaranteed, and we even guarantee that you can install the system yourself—if you cannot, send the goods back at our expense. We know you can do the work.

We Furnish All These Fixtures You Can Install Them Yourself



OUR GUARANTEE BOND

We guarantee each and every customer satisfaction or his money back. When we ship you a bill of goods, after you have received same, if there is anything in this shipment you are not satisfied with, you are at liberty to return it to us at our expense, and we will pay the return freight charges, refund you full price that you have paid for the article, and refund you the amount of money that you have paid for freight on same. Everything we sell is new and first class and **GUARANTEED.** This guarantee is made without any reservation whatever, and means just what it says.

MISSOURI WATER & STEAM SUPPLY CO.,
H. B. HOLIHAN, President.

I want to send you our new catalogue, which fully describes water systems of all sizes—we furnish a splendid system, all complete, as low as $37.80. This book quotes rock-bottom prices on all kinds of plumbers' goods, such as bathtubs, sinks, laundry sinks, water closets, etc.; it lists iron pipe of all sizes and lengths and tools to cut the same; it quotes prices on pumps of all sizes and styles, as well as windmills and gasoline engines to operate them. In fact the book is most complete, and contains letters from dozens of our customers who have had no difficulty whatever in installing our Missouri Water Systems.

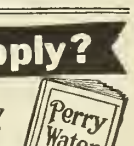
Send for this book today—it's free to you, and will save you much money in buying anything needed about pumps or water systems. When you get this book, then you will understand why I say there is no excuse for you doing without running water in your home. You can't afford not to have this book. Write today for it, saying you want the book advertised in The Fruit-Grower. I refer you to the editor of The Fruit-Grower, who knows us.

H. B. HOLIHAN, President
MISSOURI WATER & STEAM SUPPLY CO.
1025 South Sixth Street **St. Joseph, Missouri**

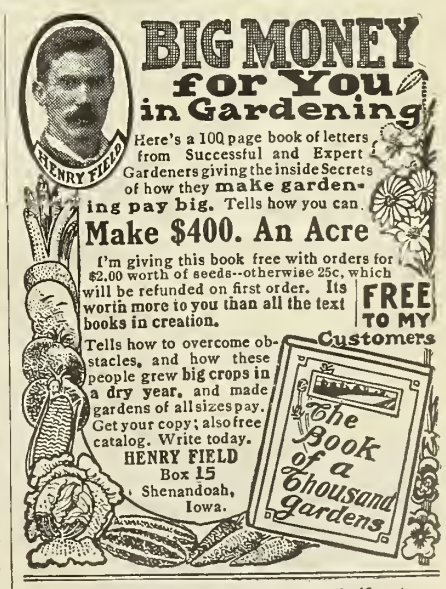
How About Your Home Water Supply?

IS IT PURE—PLENTIFUL—DEPENDABLE—ECONOMICAL?

Supply your home with all the pure, clear, sparkling water you need—direct from well or spring by the Perry System. Write today for the free book which explains this new water supply. No water tank to collect slime, mud and rust. Compressed air delivers fresh water under the pressure and in quantities you need. Automatic—economical in operation—easily installed. Water left in well until you need it—then drawn fresh. Write today for book. **UNITED PUMP & POWER CO., 497 Old Colony Bldg., Chicago**



Mail a Postal for the Perry Book—FREE



OUR HOME FOLKS

Conducted by MRS. RUTH MOTHERBY. Address all Communications to Home Editor The Fruit-Grower

"Hard Times" Prize Story.

A great many interesting letters have been received in response to the offer in the January number of a prize for the best "hard times" story. Announcement of the winners, and the best of the stories will appear in an early issue.

RUTH MOTHERBY.

A Plain Woman's Experience.

I am very glad to see that Mrs. Motherby does not consider it silly in a young girl to want to be pretty. All during my girlhood days I had the unhappiness of realizing that I was plain and uninteresting. I used to overhear enough to leave me in no doubt as to the opinion of my acquaintances, and it was agony! I can never forget what I suffered. I can sympathize from my heart with those who have anything like that to bear.

It chanced that a very lovely woman came into my life when I was just entering womanhood. She understood, and had the wish to help me. I can't imagine what my life would have been like, had it not been for her, for I was becoming more unhappy, resentful, unloving and unlovable every day. She did not attempt to comfort me by the assurance that beauty was only skin deep, or anything of the sort. That would only have made me more resentful. I had heard of such things until they made me furious, and no one could convince me that an ugly woman ever made or accepted such cold-blooded statements! She went to work to make me presentable!

Now I can't tell you exactly what this good friend said or did, for all this happened many years ago. I've been counted among the reasonably attractive for a long time; still I have not forgotten those years of suffering. I always try to help girls whom I believe to be suffering as I did, and I know I have brought comfort to many. I believe it to be as good a work as to teach the heathen to wear skirts, and so I ask space to speak a word of encouragement to the girl who grieves because she knows she is unattractive.

In the first place, dear girl, the chances are that you look much better than you think you do; but no matter how you look, don't let your suffering make scars on your heart. What if you are uninteresting today? That need not be true of you a few months later. It really and truly rests with yourself much more than you can possibly believe, just now; but take my word for it. I know.

To begin with, you must live hygienically. No matter how perfectly well you may think yourself, I must insist upon that. You must stop drinking tea and coffee. You must drink eight glasses of water every day, and not one of them during mealtime. Eat your meals without drinking at all. That is the way to have a good complexion—plenty of water between meals, upon rising, and just before retiring, and four glasses of buttermilk every day! You must have plenty of good fresh air in your sleeping room. I keep a door that opens from my room upon a porch standing wide open every night, when the thermometer is only ten degrees above zero. Eat fruit and nuts and raw carrots and raw turnips. Whole wheat and parched corn are also good for the complexion. Take exercise. Begin carefully, and increase as your strength increases. Work of some sort is usually better exercise than physical culture because it is more interesting. Get interested in Christian Science or mental science. I don't care if you don't believe in it. Get interested just the same. You'll find many good suggestions, even though you still employ your doctor. Take the good and leave the rest. You must learn something of the power of the mind over the body before you can use your own mind to make you pretty. You can change your expression, if you can't change your features; but if you will examine a few photographs of the same individual taken at different periods of his life, you will see that it is not impossible to change features. And it is all done by thinking.

But it is not done in a day, or a week, or a year. Nothing of great importance is done in a minute.

It would be impossible to outline every step of the way for you. All I can do is to give the suggestion—point out the way. If you are not anxious enough to be interesting to work out the details for yourself, there is little hope for you. But I have found that most women find the way, when once they know there is a way to be found.

MARIE SIAS.

Useful Items.

A really bad cut can be quickly cured by applying a small lump of lard upon which you have poured a few drops of laudanum. If you have a bad scratch, put on a paste of alum moistened with water. Alum water is fine for brittle finger nails. Soak them a few minutes just before retiring.

For tender corns, apply a poultice of bread and vinegar just before retiring. After a few applications, the corn can be readily removed with the finger and thumb nail. The soreness will disappear, as a rule, after the second application, but it will take longer than that to get the corn loosened enough to take out. Corns should not be cut.

A fine ointment for burns is made by frying white clover blossoms in lard. Make it rich with the clover blossoms; then strain it and put it away in covered glasses. If a bad blister forms almost immediately, beat an egg into a teaspoonful of olive oil or of linseed oil, spread it on a bit of linen, and cover the blister with it.

For severe sprain, mix together the white of an egg, and a tablespoonful each of vinegar and spirits of turpentine. Bathe the sprain with this as frequently as seems necessary. I mix this by putting all the ingredients into a bottle and shaking well; but an egg beater will do the work nicely.

There is nothing better for joints that have become stiffened through rheumatism than to rub them twice daily with angleworm oil.

To make the oil, gather the angle worms, put them in a bottle, and hang it in the sunshine. If there is no sun, put the bottle near a fire. In a few days there will be enough oil for an application, and it will continue coming, as used, for some time. This is not a pleasant remedy, but it works wonders.

S. J. JONES.

Home Canning Suggestions.

I was much pleased to note the continued interest in farm canning shown by the articles in the February issue of The Fruit-Grower. These give bona fide experiences, and not pen and ink theories, hence their value. While tomatoes have been his main crop, Mr. Preston has canned many other things, and has been very successful, and desirably so, for his goods were extra fine, and for such there is always a demand.

The number of farm canners in the Ozarks is steadily increasing as one man's success is a sure inducement to his neighbors to do likewise. The display of farm canned goods at the Springfield, Missouri, Land Congress was a surprise and delight to me. Tomatoes are usually the main crop, but other lines are followed successfully. One man had a display of about 24 varieties, if memory serves me aright, including chicken and rabbit.

Canned chicken was nothing new, but that our pestiferous cotton tails could be put to such good use was certainly news to me. The gentleman making the display assured me they were very fine eating, and I know he knows what's good. He said that when there was a surplus of fryers, who were eating their heads off because of low prices for them and high price for feed, he would slaughter them in quantity and his wife and daughters would fry and can them, and then they had a supply of fried chicken ready for all the year. It is

This Hand Can do the Work of Two

The wonderful, cleansing properties of Old Dutch Cleanser, enables you to do more work in less time and with less effort than otherwise possible. And there is hardly any end to its uses — cooking and dairy utensils, floors, woodwork, metalwork, and most everything about the house and barn. There is nothing so effective.

Many uses and full directions on large Sifter-Can 10c.

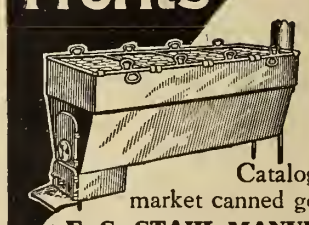
Old Dutch Cleanser

Don't Let Your Surplus Fruits and Vegetables Go to Waste

Thousands of dollars worth of fruits and vegetables go to waste every season. It may be the market is overstocked, prices low, or the supply must be disposed of at once; whatever the cause, the farmer who will invest a few dollars in a

A Home Canning Outfit Means Big Profits

STAHL Canning Outfit



for taking care of the farm or garden produce that cannot be sold will be surprised at the amount of money he can make upon his investment. We'll start you out with everything needed to make a complete canning factory on the farm. Stahl Canning Outfits are the best and cheapest, made in all sizes, fully guaranteed. Catalogue describing these Canners and telling how to market canned goods to the best advantage sent free on request.

F. S. STAHL MANUFACTURING CO., Box 302G, Quincy, Ill.

WASHING MADE EASY

Wash and Wring by Power

Roanoke Power Washer and Wringer

Save Health, Strength and Nerves

Will do your washing easier, quicker, more thoroughly and economically than any other washer. It cleans more carefully than by hand. It is the only practical, efficient washer with **movable power wringer** which slides along wash stand and wrings from either wash tub or rinse tub. **It is the only two tub power washer** made. The friction drives save clothes and machinery. No cogs, chains or sprockets to get caught in. Runs by gasoline engine or electric motor. **Recognized as best washer made.**

Write for **FREE** interesting booklet "Washing Made Easy" and name of our nearest dealer.

ALTORFER BROS. CO. Dept 544 Roanoke, Ill.

the same way with rabbits. There is a time when the young rabbit, fried, makes as fine eating as one could wish. Then they would fill a few dozen cans, and at any time of year could feast on the contents thereof.

His labels interested me much. They were uniform. Above the usual cut of the fruit or vegetable appeared the words "Sheldon's Brand," and below the name of the vegetable, his address, etc. Just those two words at the head of each label showed that the man stood behind his work, and gave one confidence in it. No superfluous adjectives anywhere on it—they were all inside.

What Kind Shall I Get?

In line with farm canning is another industry which an enterprising man in a small town a few miles out of Springfield, Mo., has taken up successfully—that of farm sausage and meat. From his advertisement in the Springfield paper, he is evidently following the lead of the "Jones Farm Sausage," so widely and expensively advertised in the high class magazines, and is making good at it, too.

The letters I receive from prospective operators of farm canners almost all contain these two inquiries: What kind of canner shall I get, and is there profit in corn? In reply to the first query, I usually recommend the canner I used myself. But it isn't the only good one. However, beware of the coverless canner. Read what Mr. Preston says of his in the February Fruit-Grower. I know of one in use by a farmer neighbor of mine, bought cheap, and he wonders why his goods are mushy, instead of firm, like mine. The reason is, that in an open vat, his stuff just stews, instead of boiling hard. Every housekeeper knows the principle of the thing.

I cannot answer the second question very satisfactorily from my own experience, as I had only put up a little for my own use. A fine grade of goods can be produced, with a little care, and there is excellent demand for corn. I always had more calls for that than for anything else. But the work is slow. I had thought too slow for profit.

Prof. Paul Evans of the Missouri Fruit Experiment Station, while camping last year with his family on his Beaver Creek farm, canned some corn, and his opinion on the matter of profits will be helpful. There was on his farm a field of sweet corn planted for early feed, and it was so very nice that canning some of it was proposed, and taken up by the party as a frolic. This was the first farm canned corn I ever found on market, and it certainly was excellent. I think there is nothing where the superiority of farm canning shows up better than in corn. However, from his experience, Prof. Evans assures me that with the ordinary farm canner, without steam, where the corn must be boiled five hours, there is no profit when there is anything else to can. Tomatoes pay far better. He says, too, that it is too tedious work to prepare the corn by hand to be profitable as a market crop, and machinery for the purpose is expensive.

While there is nothing to recommend corn as a commercial proposition, I would advise every one having a canner to put up enough for their own use, even if one can buy factory goods cheaper. Possibly one could work up a fancy trade among retail customers and make it pay, but at ordinary prices it would not be profitable. Tomatoes and beans are standard crops, sure, easily raised and very profitable. So are peaches, and doubtless these will continue to be the main canning crops of the Ozarks, and elsewhere.

MABEL EMERSON MOORE.

Missouri.

Appendicitis.

Land sakes alive! Are all the readers of The Fruit-Grower having appendicitis—or are they just afraid they're going to have it! The letters I have received! Say, sisters, I'm not rich enough to buy stamps to answer all of you. Why didn't you send along a stamped envelope? But I could never have answered all the letters anyhow. Mrs. Motherby, please let me have a few inches more of your space.

To begin with, it is very difficult to give advice about appendicitis without seeing the patient. Sometimes, it will be so far developed that nothing but an operation can save the patient's life. When pus has formed, you've got to see a doctor. Sometimes it isn't appendicitis at all. I had a patient who was angry because I wouldn't say she had appendicitis when the pain was on the wrong side! But the directions I shall give will be found good for the bowel troubles that seem like appendicitis even if they are not.

I should never try to cure appendicitis if there was a doctor near. I wouldn't take the responsibility. But the cases I had were too far from a doctor for us even to consider an operation. We just had to work. And here is what I'd advise you to do if you're a long way from a doctor, and are sure you have appendicitis.

First, wash the bowels out with hot water. Use the enemas as hot as you can bear them—even if the water seems to scald the outer surface—for the hotter the water is the more good it will do, and the less it will hurt. I usually put half a teacupful of castor oil in a gallon of water. There are few who can retain a gallon of water at first; but keep trying until you can. The water must be felt in the upper part of the bowel. It will probably make you a little sick to the stomach, but you must persevere. The hot water and castor oil have a wonderfully healing effect. Do this twice a day, at first, then once a day, continuing for at least a week after the soreness has all disappeared. If it was caused by a collection of gas, you'll be well very soon.

Now, in connection with the hot enemas, take only a liquid diet—not a crumb of solid food—for at least ten days. If you want oranges, strain the juice before you drink it. Take all the liquid food you want, and also take several teaspoonfuls of olive oil every day. Keep in bed as long as there is any soreness or pain, and use cold compresses over the bowels. Some like to use ice bags, but I think there is more virtue in a cloth wrung from ice water and put directly on the flesh. Cover it with oiled silk, or folded flannel, and change it frequently. Have more than one cloth, so as to use a fresh one each time. I don't care what the doctors may say to the contrary, I am sure that poison comes from the system on these cold compresses, and should be washed off before they are used again.

Now the only danger in my treatment is that it may be begun too late. If the appendix is full of pus, flooding the bowels might rupture it and cause trouble. I can't advise you without seeing you. If there are chills, it is quite safe to predict pus—although that is not always an indication. One case I had was told by a doctor in the city that there must be an operation at once. He became frightened and went home, riding in a carriage about twenty miles from the station, and I happened to be at his home when he got there. Scared? You better believe I was. But he lives to tell the tale. And the next time I wasn't so scared.

AUNT KETURAH.

Traveling With Children.

No one likes to take children on a railway trip; but it is sometimes unavoidable. Other travelers should consider that, and not make the mother's task so much harder by showing how greatly they are annoyed over the presence of children in their car. On the other hand, mothers should exact obedience, and try to see that their children are no more obnoxious than is absolutely necessary. There are children who act so badly that other travelers are excusable when they make caustic remarks concerning their behavior. I know, from experience, that if you try to keep your children near you and away from others, you will soon find yourself with more offers of assistance than you can accept. I have been obliged to make several quite long journeys with my children, and have learned to manage so comfortably that I thought I might offer a helpful suggestion to some other mother.

I economize on hand baggage, as much as possible, for it isn't easy to carry a baby and two or three grips. To be sure, one is very likely to find strangers who are kind to women with children, yet one should not build on that. At many large cities, one can find "red cap" boys waiting to carry baggage for a 10 cent tip; but there are many stations where they are not found; so it is best to take only what you can manage to carry if no one comes to your assistance.

I carry a valise and a shawl strap,

EVERY FARM NEEDS ELECTRIC LIGHT

Primitive lighting methods are a serious drawback to the comforts, safety and conveniences of farm life. The farmer who uses modern agricultural machinery keeps in touch with his neighbors by telephone, and uses an automobile.

The business-like progressive farmer has electric light generated in his own electric plant. The initial cost is moderate, the expense of operation small. He installs in the corner of his toolhouse or barn a small gas engine, dynamo and switchboard, and the

"Chloride Accumulator"

—the same well-known storage battery that has been used for years in the great plants of the city electric light companies, by the railroads and telegraph and telephone companies and by the U. S. Government.

Such a plant will furnish safe, brilliant illumination for all parts of the house, barns and other buildings. It is easy to install, perfectly safe and simple to operate. All that is necessary is the running of the gas engine a few hours daily to charge the battery, which then furnishes current at all other times, lights being available day or night.

Electric light is the most efficient, safe and economical illumination for farm use—it's indispensable in emergencies. Ask our nearest Sales Office for the descriptive booklet, "Farm Electric Lighting Plants."

THE ELECTRIC STORAGE BATTERY CO.

1888 Philadelphia 1912

New York Boston Chicago St. Louis Cleveland Atlanta Denver
Detroit San Francisco Toronto Portland, Ore. Seattle Los Angeles

You Need This Knife

The Wonder Knife can be used to advantage by every farmer, fruit grower and stockman. Every knife is guaranteed. This is the handiest and best knife ever manufactured.

The illustration shows slightly reduced size of the knife. Besides the large blade, which is two and three-fourths inches long, this knife has a smaller punch or reamer blade two and one-eighth inches long, and cuts holes exactly as shown in illustration. Both blades are of finest tempered tool steel, finely ground and polished. You have paid $1.00 or $1.50 for a knife not as good as this one.

The Wonder Knife is built for practical use, not filled with Nic-Nacs, as is the case with most combination knives. Especial care is taken to make the knife sufficiently strong for use of farmers, fruit growers and stockmen. It is no more clumsy or awkard to carry in the pocket than an ordinary three-bladed knife.

With this knife you can make a round hole of any size in the thickest leather more easily and more quickly than with a belt punch.

The Leather Punch will be found indispensable for making various sized holes in leather for buckles, rivets, belt lacing, etc. The Leather Punch acts as a swedging awl or marlin spike when turned to the left; especially adapted for use in lacing belts, untying knots, etc. This knife is a marvel of mechanical ingenuity, embodying every essential element, viz., Simplicity, Convenience, Durability, Smoothness and Strength.

How to Get the Wonder Knife

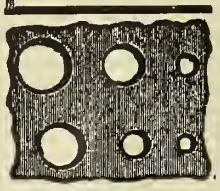
Send $2.00 for two yearly subscriptions to The Fruit-Grower, either two new subscribers or your own renewal and one new subscriber, and we will send this knife by return mail, prepaid, free of charge.

Send remittance of $1.25 and we will enter your name for a year's subscription to The Fruit-Grower and send the knife prepaid without further charge.

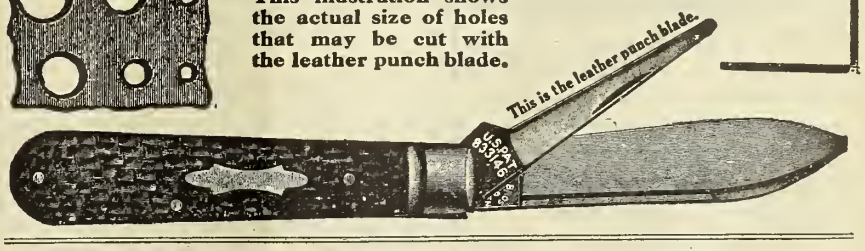
If you want the knife only, send remittance of 50c, and the knife will be mailed to you postpaid.

When you write, address, "Knife Premium Department,"

The Fruit-Grower, Saint Joseph, Mo.



This illustration shows the actual size of holes that may be cut with the leather punch blade.



Allcock's PLASTERS

Rheumatism in Shoulder can be relieved and cured by them. Also invaluable for *Pains, Stiffness or Soreness* of joints or muscles.

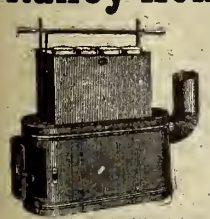
Apply Wherever There Is Pain.

Constipation, Biliousness, Indigestion, etc.

Brandreth's Pills

Entirely Vegetable.

Raney Home Canner



Practical, successful, profitable for housekeepers, farmers, fruit and truck growers. Goods put up with Raney Canners have a quality and flavor secured in no other way. Complete outfits from $5.00 up, with daily capacities from 200 to 10,000 cans. The best, lowest priced and longest lasting canner on the market. Write for illustrated catalog and detailed information. We have a full line of canner's supplies at right prices.

THE RANEY CANNER CO.
Dept. 10 Chattanooga, Tenn.

and I can take them both in one hand, if necessary, and carry the baby on my arm. It is easier to carry a shawl strap than a suit case. It is not so heavy, and you can take more things. I have made a canvas case for my shawl strap that is the greatest convenience. When open, it looks something like a huge card case, with two pockets; when folded, the two pockets come together, the strap is put around it, and it forms a bundle, large or small, according to what you put into in. I have buttonholes in the pocket flaps and buttons on the case, so that the pockets can be securely buttoned together. That prevents the things tumbling out of one pocket when I am rummaging in the other. It is surprising how much you can carry in such a case, without feeling that your arm is being pulled from the socket; and when folded together, the case makes an excellent pillow for the children to rest against.

I used to carry my leather toilet case when traveling, but soon learned to get along with a small bag that weighed much less, even though not quite so convenient. You can buy very convenient traveling cases of oilcloth now, and I think I'll have one for my next trip.

I always carry plenty of lunch, and seldom take the children to the dining car, for there they are a nuisance. I can always buy milk, and get boiling water with which to make hot soup, of which they are very fond. I take a jar of meat extract for the purpose, and they are well satisfied with a cupful of the hot broth with bread crumbled into it. I have sandwiches, ginger cookies, graham crackers and plenty of fruit, so that I know they are well nourished. I get them all to bed early in the evening, then go into the dining car and have a warm meal in comfort. That rests me, and helps me to keep good natured, as might not otherwise be the case. I put up my lunch in shoe boxes, marking them so that I can know which must be opened first. Usually some one goes to the train with me and can carry the boxes of lunch. When a box is emptied, I throw it away. If anything is left at the end of the trip, I give it to the porter, so that there are no boxes to carry when I leave the train.

I take old cotton cloth for the baby's napkins, and throw them away when soiled. The children wear knitted union suits, and over these full black sateen bloomers that take the place of drawers and petticoat, making it easy to dress them. Over all they wear princess slips of black silk, finished with a narrow ruffle. Over the gown they wear plain white aprons of dimity that take so little space that I can easily carry half a dozen for each child.

I have a little medicine box in which I carry camphor pills for sudden colds, pepsin for diarrhoea, tiny liver pills for constipation caused by riding, ipecac for croup, and peppermint for vomiting or for gas on the stomach. There is also a small bottle of toilet cream for chapped hands and lips, and a bottle of witch hazel for bruises. These go into the valise where they are easily found when needed. I also carry a tin cup for each child, to be used at luncheon time for milk or the hot broth, and of course there are spoons. I wrap these in a small dishtowel to be used in drying them after they have been used.

I usually provide a new picture book and some small toy that is new to them and will help to keep them quiet. I have found that a little of the moulding clay to be found in shops where kindergarten supplies are sold will keep them quiet for hours; they enjoy trying to mould it into shapes that they fancy resemble the household pets with which they are acquainted.

ELIZABETH ANDREWS.

The Social Hour.

I must tell the sisters how I got rid of a most annoying mole. I applied spirits of salt, using a toothpick with which to put it on, so as to be careful not to get the least bit where it was not wanted. It will turn the mole either white or brown, and the surrounding skin will become quite uncomfortably inflamed. Put a little oil on, however, and that will relieve it. If the mole is large, rub oil all around it before applying the spirits of salt; if it is small, cut a hole in a piece of paper, slip it over the the mole, and then apply the salts. The mole will come off in the form of a scab, which must be pulled off, since it seldom comes off by itself. Rub the place with sweet oil for several days after the scab is removed, to prevent a scar from forming. Warts may also be removed in the same way. Moles are usually killed by one or two applications; but a bad wart will often require several. I have a brother who is a doctor who procured the spirits of salts for me; but I imagine it is to be found in most drug stores. If your druggist doesn't have it, ask him to get it for you. It is a pity to go about with an unsightly mole when it isn't really necessary.—Alpha E. Root.

Not so many years ago I had a talk with a warden of Sing Sing prison, where I had gone with my husband on a tour of inspection, and in the course of the conversation he said, "It is my firm conviction that the want of family discipline is responsible for our prisons. The indulgence of parents leads to unformed, undisciplined characters in the children, and there is nothing back of them to enable them to withstand temptation. Parents who look upon disobedience as an incident of childhood, sure to be outgrown, make a grave mistake. There is a moral quality to be considered, and every parent who tolerates disobedience may blame himself for educating a criminal."—Mrs. L. B. E., Fredonia, N. Y.

Have you ever tasted mock turkey? If not, try it. It is a fine recipe for vegetarians, because their meat eating guests like it as well as they do. To make it, chop sufficient nuts—English walnuts, pecans, and a few almonds, to make a pint. Add a quart of well cooked hominy grits, or dry boiled rice; hominy preferred. Mix, adding a saltspoonful of black pepper, and two level teaspoonfuls of salt. Now add half a cupful of dried bread crumbs and one unbeaten egg. Mix and form into a roll the size and shape of a turkey, baste with melted butter and bake in a moderate oven for one hour. This is good either hot or cold. We are not vegetarians, but one member of our family is not allowed to eat meat at all, and he finds this a very good substitute. We even have it for supper. Sometimes I serve it with meat gravy, for a change, and sometimes I serve it cold with salad dressing.—Mrs. C. C. Jacobs, Los Angeles, Cal.

A specialist in nerve troubles says that comparatively little can be done with medicines. He gives phosphoglycerates, and not much else. But much may be done, in his estimation, with proper foods. Of course, if one is able to travel, nothing is better than frequent change of scene and climate; but there are many neurasthenics who must get along at home as best they can. To such, the following diet is recommended by this specialist: Oranges, unpared apples, peaches, apricots, melons, and all berries except strawberries, which must be shunned like poison. Oatmeal porridge, cracked wheat, rice and hominy may be eaten, if one has some outdoor exercise every day. Rye bread, graham bread and barley bread, or bread made of whole wheat flour may be eaten; but white bread contains no nerve food. Boiled or broiled fish is good, but not that which is baked or fried. Raw oysters, white meat of chicken, lamb chops, venison, bacon, eggs, clams and veal may be eaten sparingly, but no other meat. Peas, beans, celery, lettuce, cucumbers, onions and spinach are the vegetables recommended. Baked potatoes may be eaten occasionally, but avoid potatoes cooked in any other way. Hot malted milk is excellent. Hot grape juice is good. Hot sage tea is one of the very best drinks for nervousness, and if not made very strong, and taken with cream and sugar, it will be found both palatable and soothing. A large cupful should be drank upon retiring.—Mrs. Lee Barrett.

The Old-Fashioned Nurse—No. 4.

While fever accompanies most acute diseases, it does not follow that feverish symptoms always indicate serious trouble. In some cases, an attack of indigestion is accompanied by high fever; colds often begin with feverish symptoms, and I've known cases where a fit of temper brought on a high fever. A patient may have feverish symptoms, and yet have no rise of temperature; on the other hand he may be shivering with cold, and yet show a rise of temperature that is near the danger point. I have seen children who looked so feverish that I really expected to find a temperature of at least 102 degrees; yet my thermometer showed it to be hardly a fifth of a degree above normal. Every mother should have a clinical thermometer and know how to use it; but if you haven't one, and can't know absolutely whether there is a rise of temperature, it is wisest to treat the feverish symptoms exatly as you would treat fever. Many a severe illness may be prevented by so doing, and harm never results.

The first thing to do is to ascertain the condition of the bowels. Secure a good movement as soon as possible. Nothing is better for this purpose than a tablespoonful of Epsom salts in hot water—a cupful if you can possibly drink that much. This is for an adult. A child should be given a smaller dose. Phosphate soda is nearly as effective as Epsom salts, and is much more easily taken; but I so seldom find that in the home medicine chest that I leave it out of the reckoning. If no good, safe physic is at hand, use an enema. If the kidneys refuse to work, try giving three drops of camphor on a teaspoonful of sugar. Stir it in well then pour a cupful of hot water over it, and drink it as hot as possible. This

Townsend & Wyatt Dry Goods Company

Our Piano Department has been a success from the day we opened. We find that the public likes to save money when they make a purchase for as large an amount as this.

On account of the small expense in operating this department in connection with the rest of our store we can save you from fifty to one hundred and fifty dollars on a piano.

New Pianos are Fully Guaranteed from one-hundred and nineteen dollars up

"Style 'F' Hillsdale."

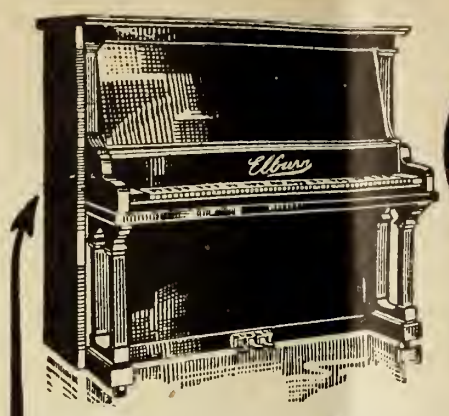
The above cut represents the popular Style "F" Hillsdale. This piano bears our own name on the metal plate. It is manufactured especially for us.

The reputation that we have established after being in business forty-four years, is behind these Instruments. The sweet round, full-toned Hillsdale will satisfy you, no matter how critical you are. Its plain, square lines will please the eye.

It is useless to pay $375 for a piano no better, when you can have this piano **Direct from the Factory to You**, no matter where you live, freight prepaid, new scarf and stool furnished, for $225 cash, or payments, if desired, 6 per cent on deferred payments. **Write Us Today.**

Townsend & Wyatt D. G. Co.

ST. JOSEPH, MISSOURI



This is the ELBURN H-2, the BEST PIANO Value Ever Known, for only..... **$225**

$6 Monthly.

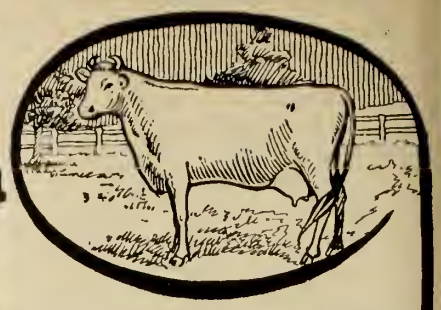
Herington, Kas., May 18.

Gentlemen: Enclosed please find money order to finish paying for piano.

We are entirely satisfied with piano and with dealings with you. The piano looks and sounds as well as when we bought it and has not been tuned in the meantime.

Hoping you continued success in your busness, I am, ALONZO FROST.

209 North D St., Herington, Kas.



Any Ordinary Cow Can Earn $6 a Month, the Amount It Would Take to Buy This Magnificent Piano

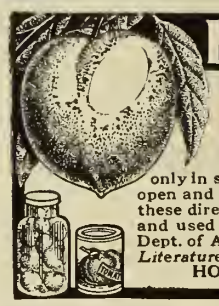
Just think, only one of your cows would furnish the small sum required to buy an Elburn. Practically no sacrifice at all. And the pleasure the piano would bring into your home would be worth twenty times this insignificant sum. Let us send you an Elburn on free trial. You won't need to pay a cent unless you are entirely satisfied with it. If all of your friends don't say it is one of the handsomest pianos they ever saw and is worth every cent we ask, you can send it back. We'll stand all of the expense.

We have hundreds of letters like the one quoted in this advertisement. Piano experts all over the country have congratulated us on being able to sell such a piano for so little.

REMEMBER OUR OFFER—We will send you an Elburn H-2, freight prepaid, for trial. You can thoroughly test it; you can have all the musicians in your neighborhood test it. And if it does not measure up to what we say about it, send it back; the cost to you will be nothing. We also have many bargains in Used Upright Pianos of famous makes. Write today.

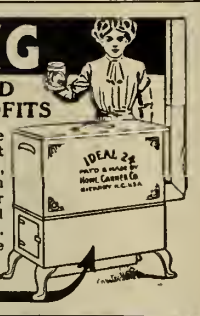
J. W. JENKINS' SONS MUSIC CO., St. Joseph, Missouri

S. S. OAKFORD, Manager



HOME CANNING

MAKE YOUR SURPLUS FRUITS AND VEGETABLES EARN HANDSOME PROFITS



Great demand for goods canned at home. We can furnish you with a complete canning outfit just like those used in the largest canning factories, only in smaller sizes—even Kitchen Outfits. Operated both open and under pressure. Evaporaters and cookers. Order these direct from us and save middleman's profit. Adopted and used by the Girls Tomato Clubs, Members in the U. S. Dept. of Agriculture. *Send us a Card for Free Descriptive Literature and Price List.* Good agents wanted.

HOME CANNER COMPANY, Hickory, N. C.

The All Fruit Club

Many readers are interested in securing data from every possible source, in regard to fruit growing. We quote herewith a special proposition covering five leading publications devoted especially to fruit, and we offer a bargain price.

A $4.00 VALUE FOR $2.50

	REGULAR PRICE
Green's Fruit Grower, Rochester, N. Y., 4 years	$1.00
The Western Fruit-Grower, St. Joseph, Mo., 1 year	1.00
Better Fruit, Hood River, Ore., 1 year	1.00
Southern Fruit Grower, Chattanooga, Tenn., 1 year	.50
Fruitman and Gardener, Mt. Vernon, Iowa, 1 year	.50
	$4.00

SEND $2.50—GET ALL FIVE PAPERS

THE FRUIT-GROWER, Saint Joseph, Missouri

is intended for one dose; give another if necessary in an hour. If that does not suffice, a doctor should be called at once.

If fever patients can be induced to drink sour buttermilk to the exclusion of all other food or drink, I feel that the battle is practically won. Buttermilk is nourishing, it keeps the bowels and kidneys in good order, and it is cooling. When possible to get it, I prefer the buttermilk that is made by putting the tablets made for the purpose into new milk. These tablets can be purchased at most drug stores, and directions for using come with them.

Give your patient a hot bath as soon as you notice the feverish symptoms, and try to induce persipration. If you can do this, the feverish symptoms usually disappear almost as quickly as they appeared; but when they persist in spite of your efforts, then resort to a pack in a sheet wrung from cool, but not cold, water.

Sometimes a patient will have feverish symptoms, and even a rise of temperature for several days before the real nature of the disease is recognized; but you will have made no mistake by beginning your treatment as above indicated.

Allow no solid food from the very beginning of the attack. It never hurts anyone to live on a liquid diet for a few days, and complications are frequently prevented by so doing, when it develops that the feverish symptoms indicated some serious disturbance. This is particularly true when the symptoms of fever end in typhoid.

Fever is often caused by overloading the stomach, or by starvation, by worry or anger, by a cold or a sunstroke, by overwork, by checking perspiration too suddenly, or by living or working in unsanitary places. Such fevers are easily cured, as a rule, if taken in time; but if neglected they may run into some one of the fevers, with fearsome names attached, that are too apt to end disastrously. For that reason, I usually take vigorous measures to break up a fever, even when I'm quite sure that it is not at all dangerous. And when one has learned to do this, one gets the name of being a good nurse—"almost as good as a doctor"—like your

AUNT KETURAH.

Saving Work for Housewives.

Dear Editor: Permit me to say a few words about saving labor for housewives. Since there are to be some articles in the April Fruit-Grower on subject of labor-saving machinery for farmers, I want to urge that attention also be given to saving labor for farmer's wives.

How many farmers think of this as a subject worthy of consideration? They look for advertisements of latest-improved farm machinery, gasoline engines, disc cultivators, etc., and think these are the only labor-saving devices worthy of consideration.

But how about the women folks? Why not save labor for them? Here is a list of some things advertised in The Fruit-Grower which are calculated to save labor for farmers' wives, and I would urge that every reader look up these advertisements, study them, and write for full information regarding the different articles:

Vacuum cleaners, to do away with sweeping.

Washing machines, to lighten work of washday.

Cream separators operated by gasoline engines.

Water systems, to provide running water in the house.

Lighting systems, doing away with endless job of filling and cleaning lamps and lamp chimneys.

Modern incubators and brooders, lightening the work of caring for poultry.

Wheel hoes—for many women do all the garden work.

Home canning outfits, making it easy to can fruits and vegetables.

There may be more of these labor-saving devices advertised in the Fruit-Grower, but I found these in a single issue. Will the men who read this article hunt the advertisements, and, for the sake of their wives and daughters, spend some money for these improvements, to lighten their labor? And, sisters, if you will hunt up these advertisements, and tell the men folks what a saving of labor for you they will make, you can get some of them this year. "Ask and ye shall receive."—So make up your mind what you want, and you will get it.

Victor-Victrola

Victor-Victrola IV, $15

Victor-Victrola IX, $50

Every home should have a Victor-Victrola

because
this instrument satisfies the love of music that is born in every one of us; touches the heart strings and develops the emotional part of our nature; freshens the tired mind and lightens the cares and worries of every-day life.

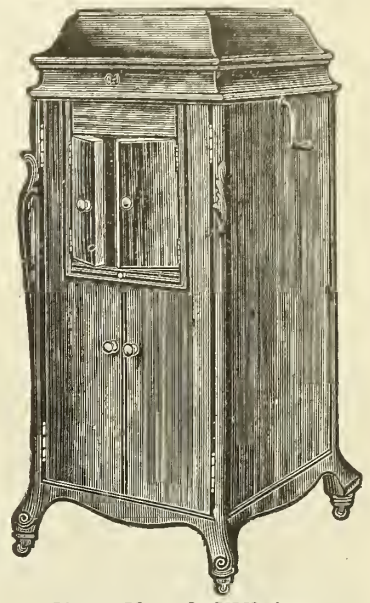
because
the Victor-Victrola brings to you the best music of all the world and gives you a complete understanding of the masterpieces of the great composers such as you can acquire in no other way.

because
the Victor-Victrola places at your command the services of the world's greatest opera stars, who make records exclusively for the Victor, besides a host of famous instrumentalists, celebrated bands and orchestras, and well-known comedians and entertainers.

because
the Victor-Victrola is universally recognized as the world's greatest musical instrument, occupies a place of honor in homes of wealth and culture everywhere, and has awakened millions to a proper appreciation of music.

because
with Victor-Victrolas ranging in prices from $15 to $200 and Victors from $10 to $100 no home can afford to be without one of these wonderful instruments.

because
any Victor dealer in any city in the world will gladly play any music you wish to hear and demonstrate to you the Victor-Victrola.



Victor-Victrola XVI, $200

Victor Talking Machine Co. 23rd & Cooper Sts., Camden, N. J., U. S. A.
Berliner Gramophone Co., Montreal, Canadian Distributors

Always use Victor Records played with Victor Needles—there is no other way to get the unequaled Victor tone.

The Value of the Gas Engine.

Time changes all things. It is not many years since our fathers followed down the potato row, knocking the bugs into a can and picking the leaves that contained the eggs. As time passed they found better methods. Only a few years back the spraying of fruit trees was considered a whim, and very few people gave the matter a thought, but today a considerable portion of time is given to studying spraying in all its phases. In looking about the country and visiting the fruit growers we find equipments for killing the adult insects as well as the egg. With the ideas and apparatus that is available today the fruit grower should be able to make fruit growing a profitable as well as pleasant industry. Still we find occasionally some who have not awakened to the fact that it pays to invest in the modern tools and who still cling to the old pump of fifteen or twenty years ago.

If one has a large orchard to spray, it is an absolute fact that to do a first-class job he must have a power sprayer of some sort. Traction power is unsatisfactory in many ways. Steam power is both unsatisfactory and expensive, but we have the gasoline engine which fills the bill to a figure. It may be mounted on the same truck with the sprayer, the entire outfit operated, if necessary by at least two men at an expense that is hardly noticeable.

People are beginning to awaken to the fact that the gasoline engine is no longer an experiment and is here to stay, but many are not posted on the many uses the gasoline engine can be put to on the farm.

Low Cost of Operation.

The present day engine is so simple that the children can operate them; the housewife can take care of them and do her household work. Aside from doing the spraying let's stop for a moment and see what else this little engine will do. There is the small grinder, the pump, washing machine, fanning mill, corn grinder, grindstone and a dozen other things we might mention which may be run with the engine at an expense of about 15 cents per day per horsepower, depending, somewhat on the price of gasoline in different localities. But at any rate if we figure about one gallon of the gasoline to the horsepower we will have it close enough. Two or three dollars worth of dry cells will run the small engine a year, unless the operator should forget and leave the switch on when the engine is not in use. In this case the battery will run down very fast, and once they are run down they are of no value farther for ignition.

Engines these days are constructed as nearly perfect as is possible to make them and one need not fear being "stung" with a cheap, good for nothing engine, for competition is so strong that the manufacturer cannot put out a cheap, inferior engine and expect to get the business. If the engine does not start readily, do not condemn it at once. There are, unless something be broken, four things that will most likely prevent the engine from starting; these are, compression, ignition, fuel supply and lubrication.

Loss of compression may be due to any of the following: A valve stuck in its guide, weak valve springs, broken or worn rings, insufficient lubrication, or the valves may be leaking and need grinding.

As to the ignition apparatus, the spark coil may need adjusting, if jump spark, or the spark plug may be fouled or broken; wires may be oil soaked; switch may make poor contact; battery may be exausted or the contact at the timer may be poor.

As to fuel we have: water in gasoline; over rich mixture, too much gas and not enough air; too weak mixture, too much air and not enough gas; in either case the adjustment is made at the needle valve. Clogged pipe or the pump not working, if one is used, may also cause trouble.

It is a good plan to strain the gasoline through a funnel over which is hung loosely a piece of chamois skin. This will catch all particles of dirt that might find way to the gas tank, as well as prevent water being mixed into the tank.

Lubrication will prevent starting by flooding the cylinder and fouling the plug points, or for the lack of lubrication the engine will not compress the charge enough to fire it. Oil is cheaper than machinery and should be used freely but not wasted. A good grade of lubricating oil will be found the cheapest in the long run and poor oil is dear at any price.

Nebraska. J. N. BAGLEY.

Light for the Farm Home.

Every year farmers are getting more and more of the conveniences that used to be the exclusive boast of the city dweller.

Farmers are getting tired of using kerosene lights, or even the cheaper form of gasoline lights. Many of them are installing gas machines which operate automatically, and make a permanent gas producing outfit that gives all the advantages of city gas, at as cheap or cheaper cost.

One of the best of these machines is that produced by the Detroit Heating & Lighting Company, of Detroit, Mich. With this machine the fuel, which is gasoline, it stored in a large reservoir at some distance from the house, where it is entirely safe. By an ingenious device the vapor from the gasoline is properly mixed with air and forced through the pipes of the house, so that it can be turned on and used instantly in any part of the house for lighting or used in the kitchen in a gas stove in summer.

It is a real gas making machine, and is well worthy of the consideration of the farmer who is looking for a permanent lighting plant that will last as long as his house. Some of these machines have been in service over thirty years and are still doing their work well, and with almost no attention.—Adv.

Experience With Goslings.

If one wishes to make a specialty of geese, of course it would be necessary to make special preparations; but for utility purposes a flock of geese may be raised on almost any farm each year without any unusual bother, and at a very small expense. We keep the Toulouse; they are easy to raise and do not make so much noise as other geese. They are not as good layers as some others, however, and their feathers do not bring as high a price as white ones.

We sold our crop of feathers last year at 75 cents per pound, here at home. In spite of the fact that we have never been able to get over 10 cents per pound (live weight) for our geese, we find that they can be raised at a profit. We hatched ninety-six goslings last year, and raised eighty-two. Not a gosling died of disease. Hawks took several while small, and a number were killed by foxes after they were over half grown.

They are inclined to wander far away from home, and if given free range they have to be watched. Both old and young are easily controlled as they cannot get over a fence that will turn cattle or sheep—but they will creep through if possible. Old geese can fly but seldom do so. Young goslings have no wings to speak of and cannot get over an eighteen inch fence.

Poultry netting is very good to use for fencing the yards. We have a number of yards for the goslings while they are small.

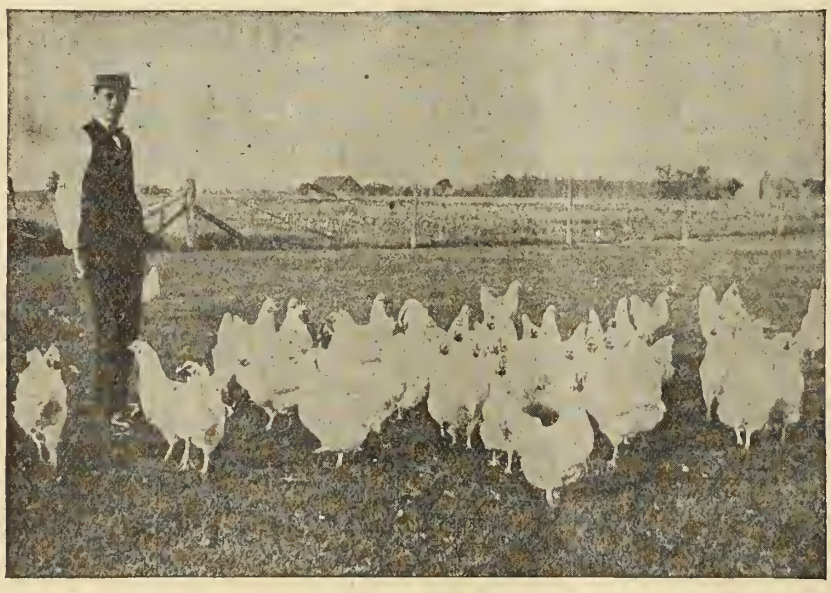
In each enclosure there is a house—not an ordinary coop, understand, but a well-built house—large enough to hold from fifteen to forty, according to size of goslings. These houses have good floors, and roofs that will not leak; they are also rat-proof. They are enclosed on one side with fine-mesh poultry netting, and with curtains to be let down in cold or wet weather. After the goslings get a start, they are kept in the houses only at night. The houses are not high. The goslings sit on the floor, therefore no roosts are required. Cheap lumber was used and the cost was not worth considering. If there is a shed or house that could be used it is not necessary to build small houses, although it is not a good plan to have goslings of different sizes in the same house or yard. The smaller ones are sure to be abused. Wherever they are placed be sure that they are not crowded and that there is plenty of dry litter or straw on the floor. Dampness will cause cramps and sometimes it will cause roup or some similar malady.

Houses that have been occupied by other poultry should not be used for goslings without being thoroughly cleaned. If there are lice in walls or floors it will not be safe to put goslings in such a place. They get lousy the same as other fowls if there are lice on the premises. When they become infested with lice, they are very hard to "doctor" with any kind of success. We used to imagine that a gosling would not get lousy, but have had some experience since. If taken in hand before the vermin have gotten a very good foothold one may be able to kill the lice without killing the gosling at the same time.

Killing the Lice.

One of the most effective remedies for lice on young fowls is olive-oil. Castor-oil is also good. A very little of either will kill lice. But it must not be used as a preventive. It must come in contact with the lice in order to be effective. Keep all young poultry in a cool shady place for a few days after using the oil. Never use kerosene or animal grease of any kind for this purpose, and always remember that "an ounce of prevention is worth a pound of cure."

Our geese usually begin laying about March 1st. But if the weather is very cold we do not save the first eggs for hatching purposes because they are apt to be chilled in the nest. Geese lay very early in the morning or during the night, and therefore it is difficult to care for the eggs properly in cold weather. Eggs from yearling geese seldom hatch well; if they hatch at all the goslings are small and weak.



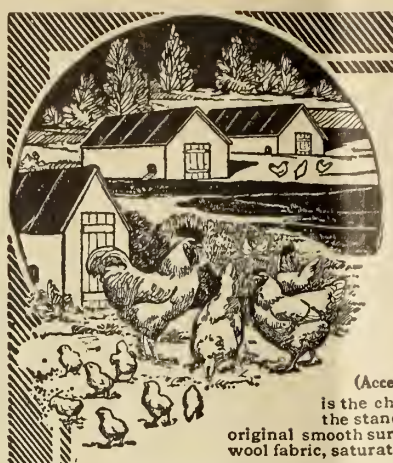
A FLOCK OF WHITE ROCKS, BRED BY GEO. LEHMKUHL, NEW BREMEN, O.

Geese are at their best as layers when from two to seven years old. At present we have none over five years old. We keep one gander for every two geese and the eggs hatch fine. Goose eggs will keep in hatchable condition for several weeks when properly cared for. Of course, it is not advisable to keep eggs any longer than is really necessary but they will keep in good condition for twenty-one days if they are wrapped in paper and placed where they will not freeze or be too warm. A temperature of from fifty to sixty is about right. Turn the eggs every day until placed for hatching. Don't keep eggs in a damp cellar. And don't risk hen eggs or duck eggs for the same length of time. Both goose and turkey eggs, when wrapped and turned, will keep for twenty-one days. We have kept both kinds that long and with good results.

We find that geese make very poor "mothers." In the first place they are so heavy that they are apt to break the eggs. If they hatch the goslings, they will usually wander away and lose them. Turtles are sure to take goslings if they go into swamps or creeks. It is best to keep the goslings away from such places, anyway, as they grow much faster. When they have access to a creek or pond, they spend most of their time paddling or swimming, while if kept away from such places they will nearly always be found grazing or sitting in the shade. In summer they must have shade.

Feeding.

The eggs require from twenty-eight to thirty-two days to hatch. We use large chicken hens to hatch the eggs. From five to seven eggs are given according to size. Goose eggs vary greatly in size. Good nests are provided and each hen is given just what can be easily covered. They should be placed where no other poultry will bother them. The nests and nest-boxes should be clean and free of lice. If the hens have lice they should be dusted with louse-killer. Never use oil or grease as this would spoil the eggs. The hens should be given good care while setting. Don't feed sloppy mashes to setting hens. Whole corn is about the best feed that can be found. Wheat comes next. Sloppy mashes sometimes cause a disorder that is similar to cholera. If the hens



Protect Your Poultry

from all kinds of weather—rain and snow, heat and cold. To do so, you need a roofing for your poultry buildings that is rain-proof, snow-proof, heat-proof, cold-proof, time-proof and fire-resisting. RU-BER-OID is all of these. It lasts longer than metal or shingles, is easier to apply and costs less.

RU-BER-OID

(Accent on the "RU" and always spelled with one "B")

is the cheapest roofing known, considered from the standpoint of 10 or 20 years' service. It is the original smooth surface, ready-to-lay roofing. It is made of wool fabric, saturated and coated with RU-BER-OID Gum.

When buying roofing always demand RU-BER-OID and remember, unless the RU-BER-OID Man is shown on the outside wrapper, the roofing is not the genuine RU-BER-OID. The RU-BER-OID Man is your protection. Look for him.

KA-LOR-OID is the only permanently colored prepared roofing—(Colored Ruberoid) THREE COLORS: RED, GREEN, BROWN.

Trade Mark Reg.

We want every reader of this excellent publication to send at once for book, "Around the World," containing illustrations from every nook and corner of the globe, and FREE samples.

THE STANDARD PAINT CO.

100 WILLIAM STREET NEW YORK

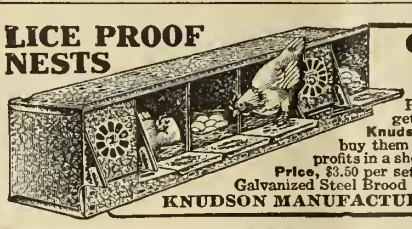
Branches: Boston, Philadelphia, Chicago, Kansas City, St. Paul, Denver

Why Incubator Chicks Die

The book entitled, "The History of White Diarrhoea, or Why Incubator Chicks Die," will be sent absolutely free by return mail to anyone sending us the names of 5 to 8 of their friends that use Incubators. This book can save you $100.00 this summer, it describes White Diarrhoea, or bowel trouble, the cause, and tells of a cure. Book absolutely free for the names.

RAISALL REMEDY COMPANY, BLACKWELL, OKLAHOMA

LICE PROOF NESTS



GALVANIZED STEEL KNUDSON PATENT

Get Rid of Lice and Mites by equipping your Poultry Houses with these wonderful sanitary nests. They cannot get out of order and will last a lifetime. You really pay for Knudson Nests whether you buy them or not; if you don't buy them the lice and mites will take the price of them out of your profits in a short time. Regular price $3.90 per set of 6 nests. Special Price, $3.50 per set, 3 sets (18 nests) for $10.00. Send for free catalog of Galvanized Steel Brood Coops with Runs, Chickfeeders, etc. Address

KNUDSON MANUFACTURING COMPANY, Box 304 St. Joseph, Mo.

Your Name Will Get $2 Eggs

For 50 Cents Per Sitting

The White and Brown Leghorns are the greatest layers in the world. I keep 2000 of the celebrated Chamberlain laying strains on my Experimental Farms, and to increase the sale of my Perfect Chick Feed, I will send to any one who will send me their name so I can send them my Perfect Chick Feed Catalogue, 2 sittings of Single Comb Brown or White Leghorn Eggs for $1 for the 2 sittings. Not less than 2 sittings sold. White or Barred Plymouth Rock or Rhode Island Reds or Silver or White Wyandotte or Rose Comb Brown Leghorn or Single Comb Black Minorca Eggs, $1 per sitting. W. Orpington Eggs, $2 per sitting. 13 to a sitting. Large white Pekin Duck Eggs, $1 for 10 Eggs. Indian Runner Duck Eggs, $2 for 10 Eggs. This is a rare chance to get a start of extra fine stock. Send Post Office order on St. Louis and have your orders hooked early. Get our prices on Old Trusty Incubators, freight prepaid.

W. F. CHAMBERLAIN, (*The Perfect Chick Feed Man*)
KIRKWOOD, St. Louis County, MO.

REFUND YOUR MONEY

HACKETT'S GAPE CURE

KILLS THE WORM AS WELL AS THE GERM

T.C. HACKETT

REGISTERED HILLSBORO, MD. THE NEW WAY.

IF IT FAILS

It's a powder. The chicks inhale it. Whole brood treated in 5 minutes. Ask your dealer for it or send 35c for full sized package, postpaid. Address Hackett's Gape Cure Co., Hillsboro, Md., Dept. F.

YOUR HENS YOUR FARM YOUR MONEY

The Story of 25 Years with Poultry and Farmers and Fanciers will help many Farmers get more eggs—better prices; make more and save more money; tell things few folks know on making money with hens. Find out about America's Largest Line of Incubators and Brooders, and get six poultry chapters written by Robert Essex himself—It's all in our Free Catalog—Write today. Address

Robert Essex Incubator Co., 71 Henry St., Buffalo, N. Y.

PERFECTION SANITARY CIRCULAR METAL BROOD COOP

made entirely of galvanized iron which will last a life time. They are properly ventilated, and are Rat, Mink, Weasel and Skunk proof. Just the coop you are looking for. Write for circular & special introductory prices.

Perfection Metal Brood Coop Co., Warsaw, Ill.

Indian Runner DUCKS

All varieties. Best blood lines obtainable. Pens mated by an expert poultry judge. Excellent layers. Money makers. Eggs $1 to $8 per 13. Mating list free.

Mrs. D. O. TEASLEY, Anderson, Ind.

PEARL GRIT

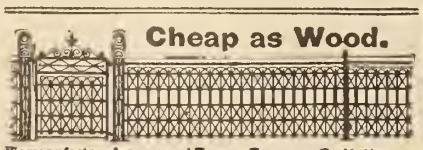
Good laying follows right digestion. Pearl Grit helps hens get the good of what they eat. Sharp, clean, white, great shell maker. Grit for fowls of all ages. Try it. Write for free booklet.

OHIO MARBLE COMPANY
757 S. Cleveland St., Piqua, O.

ORNAMENTAL IRON FENCE

Strong, durable and cheaper than wood. Hundreds of patterns for lawns, churches, cemeteries, public grounds, etc. Write for free catalogue and special offer.

WARD FENCE CO., Box 925, DECATUR, IND.



Cheap as Wood.

We manufacture Lawn and Farm Fence. Sell direct shipping to users only, at manufacturers' prices. No agents. Our catalog is Free. Write for it today.

UP-TO-DATE MFG. CO. 976 10th St., Terre Haute, Ind.

PFILE'S 65 Varieties

LAND and Water Fowls. Farm-raised stock, with eggs in season. Send 2c for my valuable illustrated descriptive Poultry Book for 1912. Write Henry Pfile, Box 617 Freeport, Ill.

"Bred-to-Lay" Poultry Pays. 31 Varieties. Stock, Eggs, Baby Chicks. Incubators, Brooders, Poultry Supplies, Ginseng. Big Catalogue, 2c.

HARRY E. RUBLE, Box 88, ALBERT LEA, MINN.

refuse to come off their nests for feed they should be carefully lifted off and turned outdoors for a while each day. When hens die or leave their nests it is a sign that they are either lousy or else have been neglected in some way or other. If the weather is cold be sure that the hens are comfortable. If they are not, the chances are they will leave the nests.

When incubators are used, be sure to keep the temperature even. Very few goslings are hatched here in incubators. But they ought to hatch as well as other eggs. We have hatched ducks in an incubator. We always test all kinds of eggs when they have been set about ten days or two weeks. No use keeping hens setting on eggs that won't hatch.

We hardly ever set a hen on the ground, therefore we find that it is necessary to either sprinkle or dip the eggs before they hatch. Once is sufficient, as a rule, but occasionally, when the weather is very warm and dry they need it twice.

Goslings pip the shells a long time before they are ready to hatch. Sometimes thirty-six hours before, but usually about twenty-four hours. Don't get scared if they stay in the shells a while. They are not like chicks. A gosling is not ready to come out when it breaks the shell. But it wants some air. This gives it the needed strength to free itself from the shell. Therefore, it is often necessary to remove a little of the shell to admit air. If the gosling has pipped the shell and yet is unable to break through the lining, we take a needle and carefully pierce the tough membrane, making a tiny split. If the gosling is not out in a reasonable length of time, a little of both shell and lining are removed, so the head and "shoulders" are free.

We always take the goslings from the nest soon after they are hatched and place them in a basket lined with a warm woolen cloth. They should not be covered too closely, however. The basket is then set behind the kitchen range or in the sunshine. If the weather is warm the goslings prefer to be outdoors. As soon as all are hatched and dried off they are placed with the hen in a house. The houses are arranged for two hens. Each house is five by six feet with a movable partition through the center. As the the houses are only three feet high at front and two feet high at back the partition takes very little material. We use fine-mesh netting for partitions. When the goslings are two weeks old the hens are not needed unless the weather is cool. If the two broods are about the same age, we take out the partition. When the goslings are about forty-eight hours old they will begin to eat a little. Dry bread and sweet skim milk is always the first feed. They will also eat a little grass. During the first two weeks we feed the goslings a little bread or boiled wheat three times a day. After that, if there is plenty of grass, two feeds a day is sufficient. Never feed whole grain without boiling it first. Green corn (raw) is all right for growing goslings. We also feed cooked vegetables mixed with bran and cornmeal. They must have plenty of clean water to drink. Also coarse sand for grit. Don't put it in the feed.

ANNA WADE GALLIGHER.

Record in National Egg Laying Contest for February.

The record in the National Egg Laying Contest at Mountain Grove, Mo., for February was a very gratifying one. A total of 6,442 eggs were laid in the 29 days, which was double that of the previous month, and more than one-half of the grand total for the previous three months. The grand total to March 1st was 17,845 eggs.

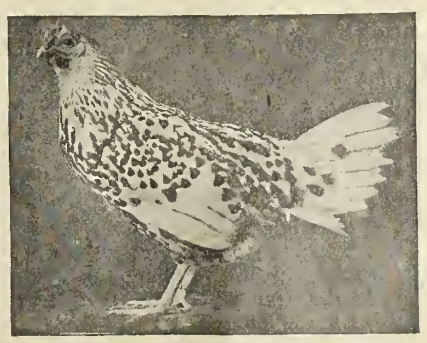
During this month, the S. C. Reds went from second to first place, and now head the list, the leading pen having 310 eggs to its credit. The Black Orpingtons which have been leading for three months dropped back one notch, and the Buff Orpingtons and Silver Wyandottes tied them for second place, each of these three pens of five hens having 309 eggs to their credit, each pen being only one egg behind the leading pen in the contest. White Wyandottes moved from eighth to sixth place. Barred Plymouth Rocks and White Leghorns have moved up until they are among the ten leading varieties of the thirty-nine varieties competing for places in the contest.

The highest individual records made at the close of the fourth month are as follows:

Pen.		Eggs.
346	S. C. Red	96
402	Silver Wyandotte	89
79	R. C. W. Leghorn	86
541	White Orpington	86
883	White Orpington	85
545	White Orpington	83
821	Cornish Indian	83
888	Columbian Plymouth Rock	82
315	R. C. Reds	80
790	Silver Wyandotte	78
401	Silver Wyandotte	78
572	R. C. Reds	77
373	Buff Orpington	77
863	Black Orpington	75
525	Silver Wyandotte	75

Winter still hangs on and will go on record as one of the most severe and longest cold spells ever experienced in this section of the country. We have had to confine the hens too much of the time and during the past month, had a snow two feet deep on the level, and it has not disappeared up to the present time. The weather has not been conducive to high egg production, but on the other hand, has made the work unusually difficult. Despite these facts, the hens in most pens have responded and given very satisfactory results.

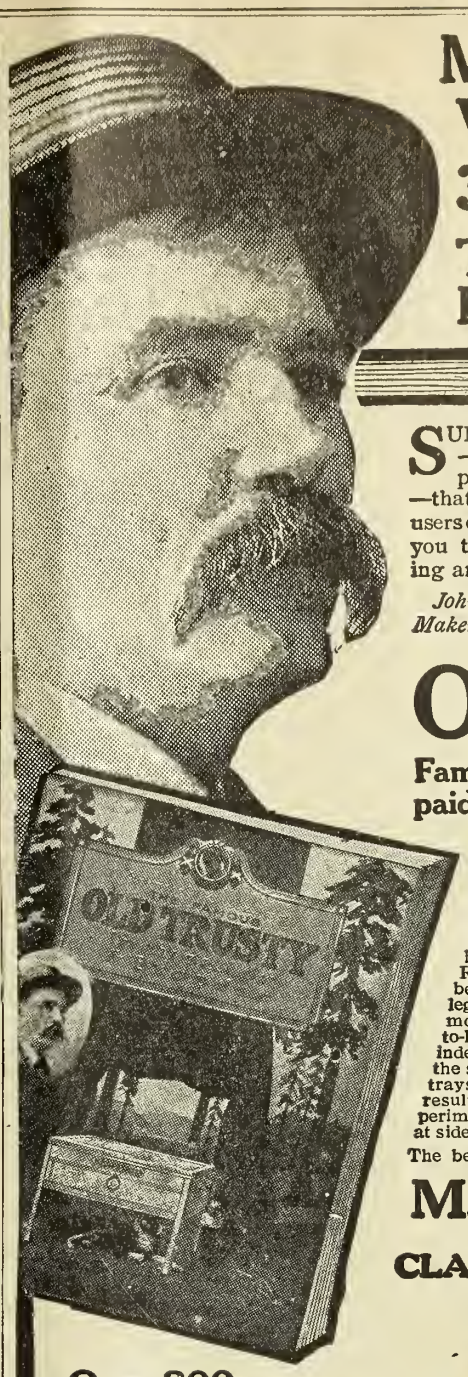
Some criticism has been offered because we do not make our feed formula known. Perhaps some explanation is due, and in reply to this will say that it is not the custom of experiment stations to publish such facts until they have satisfied themselves that they have something which is dependable and of value to the farmer and poultry raiser. We have had to make slight changes in the feed from time to time for various reasons. We will be able to draw some conclusions by the end of the year, and will possibly be in a position to give some facts with reference to feeding that will be of real value. But until we know that we have what we consider a good ration, we don't want to mislead any farmer or poultry raiser by publishing the ration in advance of that time. All of the facts



SILVER SPANGLED HAMBURG PULLET, FROM FRANK HEILMAN, NORTH JUDSON, IND.

M. M. Johnson, The Incubator King, Who Has Made and Sold Over 325,000 Old Trusty Incubators

The Secrets of the Success of these 325,000 Incubator Users are yours FREE—for the Asking



Over 300 Photographs

SUPPOSING you had the inside facts—the inside information—the experience—the practical knowledge—that an army of 325,000 successful users of Incubators could give you—don't you think it would help you in choosing an Incubator to make money with?

Johnson, the King of all Incubator Makers—at Clay Center, Nebraska—has all this information—and he wants to send it to you FREE—in addition to his own practical knowledge and experience gained in raising Poultry on a big scale and in the manufacture of *325,000* Incubators. All this information is centered in Johnson—and he has written it into his Big Book for 1912 which is now ready and FREE to you for your name and address on a postal.

Old Trusty Incubators

Famous the World Over—Sold for Less than $10—Freight Prepaid—30 to 90 Days' Free Trial—10 or 20 Years' Guarantee

The Old Trusty is made like a watch—self-regulating to a quarter of a degree—guaranteed to give 75% better hatches. Read the brief description which gives proof of the superior quality of its construction.

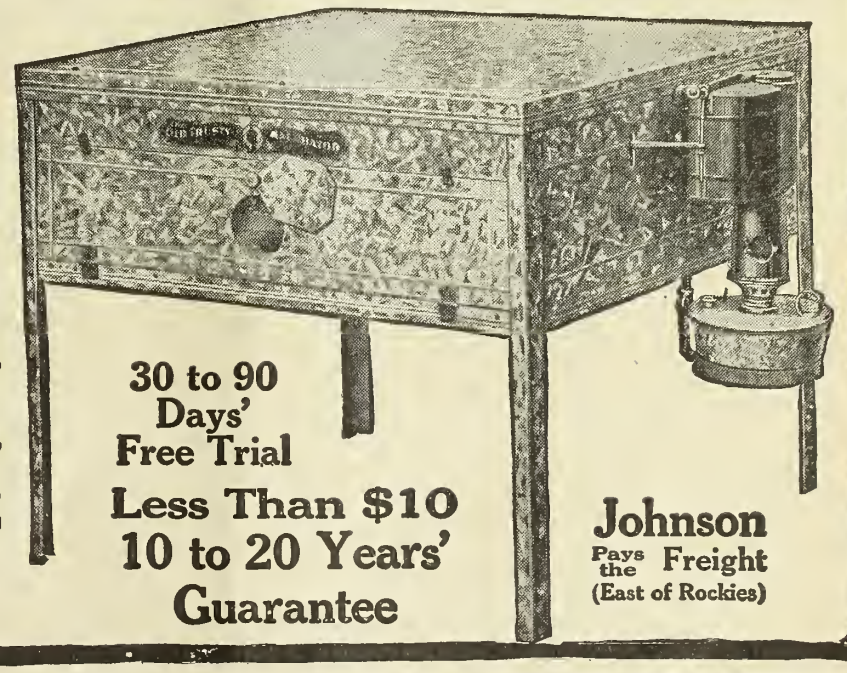
Triple-cased throughout—inner case of high-grade ⅞-inch powder-dry California Redwood—middle case of highest grade asbestos—fire-proof insulation—outer case, legs and all, of galvanized metal, handsome mottle finish—equipped with guaranteed-not-to-leak cold-rolled copper tank and heater—indestructible—can't warp, swell, or open at the seams—with best thermometer, egg-tester, trays, and instructions—ready to run with sure results by anyone—no trouble—worry—or experimenting. Safety lamp and regulator fitted on at side—top clear for use as table in egg-testing.

The best machine of any kind always hasthe largest sale. That's why the Old Trusty outsells any five other machines made—every year. And it's because Johnson sells five times as many machines as any other maker that he can make such a low price on the highest-quality patented machine made. No other manufacturer can equal the Old Trusty—because Johnson owns the patents that prevent them from doing so. Every exclusive feature of the Old Trusty is patented—so you can get them only from Johnson. Write for Free Book Today. When he sends the Book Johnson will tell you for how much less than $10 he'll sell you an Old Trusty. Why pay double Johnson's price for a machine of inferior quality? Why not join the Old Trusty family of 325,000 satisfied customers? Read their experience and let their success point the road to *your* success. Poultry is going to bring big money this year—there are big profits to be had. Why not start right in the beginning—and get the best machine at the smallest outlay? Address

M. M. Johnson, The Incubator Man,

With a Score of 325,000 Satisfied Customers

CLAY CENTER, NEB., *The Place Where Most Incubators Come From*



—Send Johnson your name on a Postal today for His Own Big 1912 BOOK FREE.

30 to 90 Days' Free Trial

Less Than $10

10 to 20 Years' Guarantee

Johnson Pays the Freight (East of Rockies)

PATENT APPLIED FOR 235

Crown Aluminum Leg Band

fits any chicken or turkey leg. 50 for 35c, 100 for 60c. Pigeon bands or rings 50 for 30c, 100 for 50c. Each band or ring is stamped with number and one letter. Prices postpaid.

A. TORGE, 1251 35th Street. Milwaukee, Wisconsin

HENS LAY AND PAY BY THE PHILO SYSTEM

FREE Booklet by E. W. Philo, entitled "A Little Poultry and a Living." Or New 96-page book, "Making Poultry Pay," 10c. Both books and the new enlarged edition of the Philo System text-book, $1.00, or all three books with our monthly magazine, Poultry Review, one year, $1.50.

E. R. PHILO, 86 North Ave., Elmira, N. Y.

will be published in bulletin form at the close of the year. The results obtained and the facts which we have observed during the year, and the conclusions which we are able to draw will be made public at that time. In the meantime, let's all co-operate for the good of the cause, and wait with patience, trusting that the results of one of the first great contests ever undertaken in this country will result in some good to the great industry which we represent. Miss S. C. Fellows' pen, No. 118, Buff Orpingtons, won the Golden Egg Silver Cup for February, laying 107 eggs.

Missouri. J. E. QUISENBERRY.

Feeding and Caring for Incubator Chicks. Twenty Rules.

As inquiries are continually being received seeking information on the feed and care of little chicks, a few suggestions at this time may be of some benefit. I offer here the following instructions, more as a set of rules than as a general discussion, because: First, they may be tacked up in some convenient place and referred to each day until one is familiar with them, and hence they make a very good working plan. Second, by constantly referring to these rules the importance of the minor things in chick raising will be more appreciated.

WHITE ORPINGTON COCK, FROM GILBERT W. SCHNABLY, McKEESPORT, PA.

1. Start the brooder a day or so before the incubator hatches, so as to regulate and thoroughly warm all parts.

2. Remove the chicks from the incubator when they are about 12 to 24 hours old, or when dry and sprightly. Put them in a box containing some fine chaff, and cover with a cloth until they are about 36 hours old.

3. Kill all the crippled chicks or those that are so weak that you believe they will not live. The growing period is so short that it is not worth while to attempt to raise them.

4. Put all the healthy chicks in the brooder when they are about 36 hours old. Do not put too many in the brooder so as to crowd them. Usually a brooder which is rated to hold one hundred chicks will give much better results with about sixty.

5. After they have been in the brooder a little while to get accustomed to it give them their first feed. This may be done by putting it on a paper in the front of part the brooder.

6. The first feed should consist of either the yolks of hard boiled eggs, or old dry bread soaked in milk and allowed to drain before feeding. The infertile eggs or those that had weak germs, and which were taken from the machine during the first half of incubation may be used.

7. Do not feed much at first, but feed every three hours during the first week. This would bring the feeds about as follows: 6 a. m., 9 a. m., 12 m., 3 p. m., 6 p. m.

8. After the second day ground grain or rolled oats may be gradually substituted for eggs and soaked bread. A mixture similar to the following may be used: Ground wheat two parts, ground corn one part, ground oats or beans one part, beef scrap one-fourth to one-half part.

9. Keep clean, fresh water before them at all times.

10. Generally speaking the temperature of the brooder should be kept at about ninety to ninety-five degrees the first three or four days, then may be lowered to eighty-two to ninety for the next week and one-half. After this it will not be necessary to burn the lamp except at night unless the day is cold.

11. However, watchfulness and good judgment are usually better than a thermometer. When chicks are warm and comfortable they will be scattered around under the hover, if cold they will huddle and crowd in the corners, and if too hot they will hunt the openings, spread their wings and are liable to contract disease from being in the drafts.

12. Be very careful not to leave the lamp turned too high, as it always crawls up after burning a little. See that it has plenty of air as carelessness here may result in fire.

13. If any water is spilled on the floor, put in some more litter, as wet floors cause disease.

14. If the weather is cold the chicks can be kept in the brooder the first two days, then allowed to run through the small opening, and after the third or fourth day the large opening may be used. If the weather is warm allow them to be out from the first day.

15. Keep fine grits, oyster shell or gravel so they can have access to it at all times.

16. Clean the brooder thoroughly every week, and spray with some disinfectant.

17. When the chicks are six or seven weeks old, remove the brooder and put low roosts in the brooder house.

18. Feed meat scrap, ground green bone, or any other form of animal food, together with green vegetables at least three times a week, and a little every day is better.

19. Always see that the chicks are comfortable and contented. They are usually fairly quiet if they are.

20. It is very essential that you give careful attention to small things, as young chicks are very delicate, and carelessness will mean failure.

H. H. SIMPSON.

New Mexico Exp. Station.

Why I Breed Buff Rocks.

When but a boy on the farm my parents had but a mixed flock of chickens. They learned from experience that it paid them, and paid them well to get some good blooded cockerels each season to breed to the flock. As I grew older and desired to keep chickens for myself, I reasoned that if it paid them to get good blood to mix with an ordinary flock would it not pay still better to get the pure bred to begin with and keep it pure by having just the one kind?

After deciding upon this I made a study of the various breeds to decide the one I desired to take up. This matter I found was not to be one of hasty decision although I had decided

BUFF ROCK COCKEREL, from D. P. NORTH, WAVERLY, N. Y.

that I wanted to obtain two things from the breed I adopted: First, I wanted a breed that would not only be good layers but one that would be good winter layers and also layers of good sized eggs; and second, I wanted one that would bring a good price for meat. Thus if eggs were low in price I would still have a chance of making something on what I raised from the meat standpoint.

I figured that for quick growth, abundant size, and good layers the Rocks seemed to come nearest to filling the ideal I was seeking and of the different varieties my choice was finally placed on the Buff Plymouth Rocks. Here the beautiful golden color, which the Buffs invariably have, appealed to me. I have never once had a cause to regret my starting in with pure bred poultry or with the Buff Rock variety. I have had no occasion to double mate which seems to me akin to keeping two breeds; I have no smoky white fowls resulting from dusting of white breeds, no conspicuous color to catch the eye of all that preys upon fowls, be it bird, varmint or man.

Layers.

I have found my favorites good layers, possibly not as good summer layers as some breeds, but I think they easily make up for this by being good fall and winter layers and by laying a large egg and at a time when the prices are two or three times as great as in the heat of summer. For instance, last spring eggs were as low as eleven cents per dozen here and this winter up to thirty-two. While I got many eggs when they were the cheapest I also got many when they were the highest and all winter long, and not on a force feed proposition either.

It was but a few years since that springers and even old hens were sold on the market by the dozen. That is changed now and they are sold by the pound, and not only by the pound but if your hen weighs under three pounds she brings much less per pound. Look in your Kansas City papers of February 18th, and you will see that hens are quoted at 11½ cents per pound; under three pounds at only five cents per pound. It will be but a few years more until eggs will either be sold by the pound or at least a dozen will be required to weigh so much per dozen to bring best prices. You can see this agitation in almost all up-to-date farm and poultry papers of today. Therefore it is well to get or keep a breed that lays good sized eggs.

Besides the eggs as a consideration for the past several years a hen as meat has been worth considerable and well worth one's time and consideration if one is in the business for the profit as well as pleasure. Local prices here in our town last summer were as high as thirteen cents per pound making a Buff Rock hen worth better than a dollar each when sold on the open market just for meat, and this after you are through with her as far as eggs are concerned. Thus, in this breed I have been able to take advantage of both the egg and meat proposition.

Another feature of the Buffs, and I believe the buff varieties stand alone in this matter, as soon as they are feathered you can quite accurately tell as to how they are going to be when matured. Many varieties cannot be told until they are more developed or have their full feathering. Being able to tell this at an early stage enables one to cull out early all unpromising ones and dispose of them at the time market is at its best in prices and demand. This leaves one with only their best birds to keep through the hot summer months and during the time that the price of feed is at its highest.

I find my favorites are not flyers, they are not wild and scary and prefer their own home to roaming far away to nest and brood in hidden and secluded places. When I say that they are not roamers I do not mean that they are not hustlers, but to have hustlers does not mean that they should roam a mile from home to neighbors flocks or hog lots to carry home every disease that may be found on your neighbors farm.

Their feathers do not show soil easily and are easy to judge, that is to tell when you have a good buff bird. Their feathers should be a solid buff over their entire body. If they are not, you know you still lack a perperfectly colored bird.

The breeding of very heavy birds to very heavy ones, year after year increases the entire weight, but I believe at the expense of egg production. The last Standard changed the weight of the pullets from six and one-half to six pounds. A pullet that will weigh six and one-half pounds at the early poultry shows in December, unless she is a very early hatched one will weigh more than standard calls for as a hen, which should be seven and a half pounds.

Kansas. WM. A. HESS.

Get My Prices

I'll Send You This "Can't-Sag" Gate

Without a Penny of Pay in Advance Send no money—just send for my Free Catalog and pick out the gates you want. Use them 30 days. If you don't find Can't Sag Gates the best you ever saw at any price, I'll take them back and pay the freight both ways.

Costs Less Than Wood—Lasts Three Times as Long

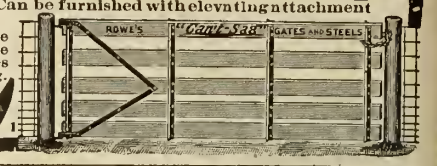
Cost only one-third as much as iron, gas pipe, or wire gates, and even less than home made all wood gates. They can't sag, drag, warp or twist. Made with either 4 or 6 inch boards, double bolted between 8 angle steel uprights—not screwed or nailed. No nails to gather rust or pull out—no wood joints to collect water and rot.

Can be furnished with elevating attachment

Guaranteed 5 Years Freight Prepaid

I furnish Complete Gates ready to hang, or the Gate Steels, hinges, bolts, etc.—everything but the boards. You can put up your own Can't Sag Gates if you wish and save money. Postal brings catalog. Send for it today. Alvin V. Rowe, Gen'l Mgr.

Rowe Manufacturing Company
632 West 4th Street Galesburg, Ill.



BROWN

WE PAY THE FREIGHT

Heavyest Fence Made
Heavyest Galvanizing

We make 160 styles. Horse cattle, sheep, hog, and bull proof fences made of No. 9 double galvanized wires and absolutely rust proof. Bargain Prices: 13 cents per Rod Up. Poultry and Rabbit Proof Fences, Lawn Fences and Gates. Send for Catalog and Free sample for test.

The Brown Fence & Wire Co.
Dept. 14 Cleveland, Ohio

SAMPLE FREE.

FENCE

No Break ENDLESS STAY FENCE Advance 10 YEARS THE SAME

11½ AT FACTORY PRICES 11½

Farm, Hog, Sheep, Poultry, Fruit Fences sold direct. Send for freight prepaid catalog.

CENTS-Advance Fence Co., Box 732, Elgin, Ill.-CENTS

STRONGEST FENCE MADE
FROM FACTORY DIRECT TO FARM

26-inch Hog Fence,.....15c.
47-inch Farm Fence,...23½c.
60-inch Poultry Fence....30c.
80-rod spool Barb Wire, $1.40

Many styles and heights. Our large Free Catalog contains fence information you should have.

COILED SPRING FENCE CO. Box 125 Winchester, Ind.

KITSELMAN FENCE

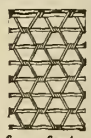
Sold direct to you at factory prices on 30 days trial. Save the dealers profit. Farm, Hog and Poultry Fence at from

11½ CENTS A ROD UP.

All wires are heavily galvanized 80 rod spool of Ideal galvanized Barbed Wire $1.40. Write to-day for large free Catalog showing 100 different styles and heights of fencing

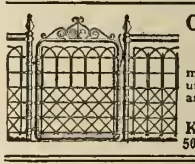
Box 103 KITSELMAN BROS. MUNCIE, IND.

The TIGER FENCE



Made of Open Hearth High Carbon Coiled Spring (double strength) Steel thoroughly galvanized wire. May be returned at our expense if not satisfactory. Shipped direct from factory. Field Fence, 49-in., 22¾c; Hog Fence, 27-in., 15½c; Strong Poultry Fence, 48-in., 27c; 60-in., 30c. Special price on Glidden Barb Wire. Catalogue FREE.

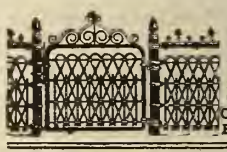
The TIGER FENCE CO., Clarksville, Tenn.



ORNAMENTAL FENCE
25 Designs—All Steel

Handsome, cost less than wood, more durable. Don't buy a fence until you get our Free Catalogue and Special Prices. We can save you money.

Kokomo Fence Machine Co.
501 North St., Kokomo, Ind.



LAWN FENCE

Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Churches and Cemeteries.

Coiled Spring Fence Co.
Box 413 Winchester, Ind.

11½ CENTS A ROD

For 18 inch Hog Fence, 14½c for 24-in. 26c for 48-in. Poultry. 78 styles. Bottom prices. Catalog Free.

OTTAWA MFG CO. 608 KING ST. OTTAWA, KANS.

Indian Runner Ducks.

April, May and June are the best months in which to hatch Indian Runner ducks. If hatched earlier it is more difficult to raise them, especially in cold climates.

The method of hatching the Indian Runner is much the same as hatching a chicken, except, of course, that it requires twenty-eight days instead of twenty-one days to hatch the duck eggs. If you hatch with a hen, do not give her more than eleven duck eggs, especially if hatching early in the season, for they are a little larger than a hen egg and she may not cover them well.

The membrane lining of the shell of a duck egg is very tough; sometimes, therefore, the ducklings die in the shell. To prevent this there are several methods to treat the eggs, as follows: Sprinkle the eggs in the nest once a week with a half pint of warm water. The proper temperature of the water should be 107 to 108 degrees—not too hot, but more than luke warm. The fourth week sprinkle the eggs every other evening until they begin to pip. Then sprinkle only slightly, and leave the hen unmolested to hatch her ducklings. Always sprinkle the eggs after dark; if the hen is disturbed in daytime she is likely to chill the eggs. Another method is to sprinkle same as above with water during the last ten or twelve days of the hatch. Either way is good. The moisture afforded by the water is necessary to "rot the shell."

If you use an incubator use none but the best—none with poor ventilation—and regulate it the same as for hen eggs, only carry the temperature 103 degrees throughout the hatch. Open the ventilators about half way at the end of the first week. On the fifteenth day open wide the ventilators and leave open until the end of the hatch. Eggs in the incubator, because of the drying tendency of the artificial heat, require more artificial moisture. They should, therefore, be treated something like the following: On the fifth or sixth day begin to supply moisture by using sand trays almost as large as the eggs trays and about a half inch deep, under the egg trays. Fill the sand trays with fine sand. Keep the sand damp, but not wet, all the time until the end of the hatch. On each day after the fourteenth day sprinkle the eggs with water heated to 107 to 108 degrees. Allow the eggs to cool a few degrees before sprinkling. Return trays immediately to the machine after sprinkling. Do not allow heat to fall below 103 degrees at hatching time as heat is absolutely necessary to a good hatch. If the temperature has been regular, they will pip the shell about the twenty-sixth day; after that they will make no further effort to get out until the twenty-eighth day. Some amateurs become alarmed and think they ought to pick the ducklings out of the shell. Do not do this, but leave them alone. When fully developed they will come out themselves. If the shell seems to be drying, pull tray out, sponge eggs slightly with warm water, and put back into the machine immediately. Open the machine only when necessary, for every time it is opened moisture and heat escape which are very essential to a good hatch.

The Indian Runner duck after it is five weeks old is one of the hardiest of fowls, and requires but little care. Until the ducklings are about five weeks old, however, they require careful feeding and attention.

More important than feed, and first in order of time, is the imperative caution, do not allow the ducklings to chill when taking them from the incubator or from the hen to the brooder. An old hen will brood the ducklings, but she must not be allowed to run around with them. Confine her in small, warm quarters until the ducklings are four or five weeks old. After that time they will pay but little attention to the old hen, and will have no further need of her motherly care. The ducklings may be successfully raised in an ordinary heated chick brooder without the assistance of mother hen. I have had as good results one way as the other. Above all, first, last, and all the time, they must not be allowed to chill. Exposure to cold wind will make them turn up their heels and die faster than a half dozen incubators can hatch them.

It is important that the ducklings should have plenty of water to drink, but they should not be allowed to play in it or to get wet. When wet they are more likely to chill and die. They should have water deep enough so that they can immerse their bills. Otherwise their nostrils stop up with food and dirt. A good way to give them water is in a deep pan filled with small stones. The ducklings can drink between the stones, but cannot get into the water and get wet all over. The chill should be taken off the water the first few days.

A duckling should not be fed until it is twenty-four to thirty-six hours old. Its first feed should be stale bread soaked in sweet milk, squeezed rather dry, with a sprinkle of fine river sand over the bread. Feed this every two hours for the first five days. Gradually add wheat bran shorts, equal parts to the bread and milk, also a sprinkle of fine beef scrap. By degrees accustom them to five feeds a day, and then to four. When they are about four weeks old, feed them gradually on a mash made as follows: Four parts wheat bran, three parts shorts, two parts corn meal, one-half part beef scrap, (gradually increase beef scrap,) one-fourth part fine, sharp sand. Mix with water or milk to a thick sticky mass. Feed what they will clean up in five minutes. They will begin to feather when about five weeks old, and will reach market size when about nine or ten weeks old. My ducks began laying at four and one-half months of age.

An excellent laying ration is made as follows: Four parts wheat bran, three parts shorts, one part corn meal, one part alfalfa meal, one part beef scrap, one-half part fine, sharp sand. Mix to a crumbly state with water or milk, and feed in long troughs. Crushed oyster shell, charcoal and grit should be kept before them at all times.

As for housing, they do not need expensive buildings; a cheap shed or anything to furnish shelter from the wind and rain will serve the purpose, and straw bedding to keep their feet warm in cold weather is all the Indian Runner requires. No roosts, nests, or automatic feeders are necessary. In my Indian Runner duck breeding house, I have it divided into eleven pens by wire mesh, and have a large run for each pen. Here I keep three varieties of Indian Runners: English Waltons, Pure White, and the American Standard. They lay their eggs in the straw early in the morning. It is a beautiful sight to see the pearly white eggs scattered around through the pens.

The Indian Runner has no lice, no mites, no roup; in fact, none of the various diseases to which the chicken is subject. With reasonable care they are extremely hardy, and the most prolific of all layers. They are the poultryman's money maker, and the farmer's financial friend.

Indiana. MRS. D. O. TEASLEY.

Fighting Melon Aphis.

Melon growers around Rocky Ford, Colo., where canteloupes are grown extensively, find that the best way to fight melon aphis is to burn the infested vines just where they are. At least every other day they get over their patch of vines and look for the very dark green color and swollen, watery appearance of the leaves of the plants. A little later the leaves and vines take on a black, powdery cast that no one can mistake. The leaves curl under, but do not begin to wilt sometimes for days.

By keeping careful watch and destroying the plants as they show the presence of aphis, one can usually control the pest. Scatter straw over the infested hill and burn at once. To attempt to carry the vines to the edge of the field will simply spread the insect.

After burning a hill keep careful watch over adjoining hills, to see that the insects have not spread. Of course, the same treatment is recommended for cucumbers.

Doubting Thomases

Read This From Weaver Orchard Co.

One of the Largest and Most Successful Orchard Companies

WEAVER ORCHARD CO.

GROWERS OF FANCY SPRAYED WINTER APPLES

Falls City, Nebr., March 20th, 1912.

Cushman Manufacturing Co.,
St. Joseph, Mo.

Dear Sirs:

Six years ago we purchased one of your Power Sprayers, and four years ago we purchased an additional machine. These Sprayers have proven highly satisfactory in every respect; in fact, after investigation as to whether there has been any other make better than the ones we have, we now desire to place an order for five more of your very latest and best equipped machines, four of these being for our own orchards and one for a neighbor.

We find spraying very necessary in order to realize the full profits of the business, and we wouldn't try to handle an orchard without using the latest spraying equipment.

While we have used Cushman Sprayers exclusively, we have investigated other makes in the hands of other orchardists, and we prefer the Cushman, because of lighter draft, power, convenience and general construction.

We thank you for the courteous manner in which you have always treated us, and we acknowledge that much of our success has been by reason of thorough spraying methods with your machines.

Very truly yours,
Dict. WEAVER ORCHARD COMPANY,
By A. J. Weaver and P. B. Weaver.

Since this letter was written three more of Weavers' neighbors have bought the Cushman machines.

Don't Let Your Orchard Fail This Year. SPRAY and SPRAY RIGHT.

MAIL, TELEGRAPH OR TELEPHONE YOUR ORDER
WE CAN MAKE IMMEDIATE SHIPMENT

CUSHMAN MFG. CO., St. Joseph, Mo.

Spraying Guide and Catalog Free. Send for a Copy.

Branches: Spokane, Wash. and Grand Junction, Colo.

$1 Worth for 25c

We have a few hundreds of the Brother Jonathan series of fruit booklets, of which we sold thousands a few years ago, and want to close them out quickly. These books originally sold at 25c each, and Fruit-Grower readers took thousands of them at that price.

We Now Offer Four of These Books, postpaid, for 25c

Select the numbers you want, and send your order today, for there are only a few of several numbers. Orders will be filled as they are received, and if any number you select cannot be furnished, we reserve the right to send another number instead. Here is the list of those we can furnish now:

No. 2—A Treatise on Spraying. Tells all about how to fight insects and diseases which attack apples and strawberries.

No. 3—Strawberries and How to Grow Them. A dandy little book telling how to grow this most valuable fruit.

No. 4—Gardening. A practical little booklet which discusses all phases of gardening, including making and management of hotbeds.

No. 5—Packing and Marketing of Fruits. This book takes up the problem of packing and marketing in a common-sense manner.

No. 6—Bush Fruits. A booklet which discusses the culture of raspberries, blackberries, gooseberries, etc.

No. 7—Grapes. This booklet discusses planting and care of vineyards, and illustrates the famous Munson system of training the vines. Only 75 copies of this number are available.

No. 8—Pruning Booklet. Discusses the whys and wherefores of pruning fruit trees and shrubbery. Only 50 copies available.

No. 10—Stone Fruits. Discussing the culture of cherries, plums, peaches, etc., with notes as to varieties.

No. 12—The Corn Book. A little book containing valuable information on corn culture, including chapters on seed selection.

Order These Books at the Rate of Four for 25 Cents

Send us list of the numbers you want, and act quickly, so that you will be sure of getting the numbers you want. Here's a real bargain, for thousands of these booklets were sold at 25c each, and every purchaser received his money's worth. Send order today to

THE FRUIT-GROWER, Book Dept., ST. JOSEPH, MISSOURI

Our Classified Advertising Department

For advertisements in this department, of not less than twenty words each, in which no display type is used, we make a special rate of FIVE CENTS PER WORD, EACH INSERTION. If several different advertisements are inserted in the same issue, the charge will be $1.00 for each ad, no matter how small. The first four words of each ad will be set in black type. Every initial and number to count as one word. This department is for the benefit of our subscribers who have anything to sell, including farm lands, fruit farms, dogs, ponies, poultry and eggs, live stock, plants, shrubs, vines, etc. All advertisements for this department must be PAID FOR IN ADVANCE. Count the number of words you send, and remit at rate of 5 cents per word, stamps, currency or money order. This is considerably less than our display rate, and offers a splendid opportunity to reach our readers at a low figure. Send a trial advertisement with remittance at rate of 5c a word. THE FRUIT-GROWER, St. Joseph, Mo.

POULTRY DEPARTMENT

Anconas

Sheppard's Famous Anconas. The world's best. First at world's greatest shows, including London, England, Madison Square and Cleveland. Greatest egg record. Catalogue free. Cecil Sheppard, President International Ancona Club, Berea, Ohio.

Anconas. American Beauty Strain. Biggest money makers. Real hustlers. World's best layers. Will produce four eggs on same feed Orpingtons require for one. Outweigh Plymouth at 10 weeks. I win at all shows. Send for catalog. C. A. Nicbur, Dept. 2, Lindsay, Neb.

Anconas—Both Combs. Large dark birds, evenly mottled, black tails and wings, winners Buffalo, Rochester, Cleveland, Williamsport, Madison Square. World's best. Eggs a specialty. W. A. Ellison, Elkland, Pa.

Anconas—Stock, eggs. Three pens. Show, trapnested egg strain and utility. Reasonable prices on application. Honest complaints made right. M. E. Wells Brewster, Ohio.

Prize Winning Mottled Anconas. Famous winter layers. Eggs, $1.50 to $3.00. Baby chicks $2.50 per dozen up. Write for Circular. W. H. Hardman, Frankfort, Kansas.

Anconas exclusively. Eggs from exhibition matings, $2.00 and $3.00 per 15. Thoroughbred utility matings, $1.00 per 15. Fred Crosby, 3251 Gillum Road, Kansas City, Mo.

Rose's Anconas and Indian Runners. Prize winners and great layers. Eggs, $1.00, $2.00, $3.00 per 15. Write for circular. Mrs. Daisy Rose, Bois D'Arc, Mo.

Fernecliff Farm Anconas are the kind you like. Bred to show and lay. Quality and prices will suit you. Circular free. C. Krichbaum, Youngstown, Ohio.

Get Anconas, the greatest layers known today. Stop last, begin first; lay when others rest. Pure, dark, grand birds, the best. L. Evitts, Falls, Pa.

Ancona Cockerels of Quality—Have a choice lot. Write me stating kind of bird wanted. J. B. Firestone, Spencer, Ohio.

Andalusians

Blue Andalusian Eggs, $2.00 pen; setting 45 eggs, $3.00; 100 eggs, $6.00. Prompt shipment, fertile eggs. Satisfaction with every sale. William C. Foote, Wellington, Ohio.

Blue Andalusians. Winners at the leading shows for fifteen years. Great layers—and the prettiest of fowls. Stock and Eggs. F. L. Garnett, Nottingham, Ohio.

Bantams

Bantams, Eggs, 34 varieties, Sebrights, Cochins, Games, Polish, Rose Combs, Brahmas, Japanese. Send 2c stamp for circular. A. A. Fenn, Box 10, Delavan, Wisconsin.

Partridge Cochin Bantams with and without score cards. Stock and eggs. Also eggs from fine Single Comb Brown Leghorns. L. Beechler, Springfield, Ill.

My White Cochin Bantams took first prize at Chicago three years in succession. Cockerels, $1; eggs, $1 for 12. T. Barber, Stoddard Ave., Wheaton, Ill.

Brahmas

Light Brahmas exclusively; high grade, vigorous, good layers, good lookers, good prize winners. Stock and Eggs for sale. Harold E. Davis, Sleepy Eye, Minn.

Buff Brahmas and Light Brahmas. Eggs for hatching $2 a setting. If you want fine winter layers try mine. C. C. Arnold, Millers Falls, Mass.

Light Brahmas, scored to 95½; never been defeated in show room, Felch strain; best layers; $1.50 per 15. J. H. Willis, Jeweler, Norris City, Ill.

Buckeyes

Buckeyes—Dark red, small "pea" combs, small wattles, long backs, broad shoulders—ideal winter layers. Eggs and baby chicks; silver cup winners, Missouri State Show. Highland Poultry Farm, Box F, Nevada, Missouri.

Buckeyes, the great utility and fancy red, keep winter egg basket filled; eleventh year; state fair, Cincinnati and Columbus firsts. S. G. Dunning, Logan, Ohio.

Cornish

Forest City Cornish Yards, Shawnee, Okla. Home of World Beater Dark Cornish and White Indian Runner Ducks. Stock and eggs for sale. Mating list free.

Cornish Indians—Thoroughbred exhibition stock. Fine laying strain. 15 eggs, $1.50; 30, $2.50. Baby chicks, $12.00 per 100. S. A. White, Box G, Timberville, Va.

Dominiques

The American Dominique is the only hen that will lay prolificly for fourteen years. Eggs 14 for $2. Mrs. A. L. Carson, 1425 Main St., Evanston, Ill.

Dorkings

Silver Gray Dorkings. Try these grand English fowls for excellence and profit. Hens at $1.25; eggs at $2.00 per setting. D. W. Seibert, Somerset, Pa.

English Red Caps

English Red Caps—Z. T. Turner, Eleroy, Ill., importers and breeders of America's best Red Caps. Catalogue free. Five other breeds. Exhibition quality.

Faverolles

French Salmon Faverolles are fastest growers; best winter layers, and are unequalled for broilers and market fowls. A. Essig, 2460 East 9th street, Cleveland, Ohio. Circular free.

Hamburgs

Silver Spangled Hamburgs, Black Orpingtons scoring to 95½, winners of silver cups and blue ribbons at Blue Island, Chicago, Missouri State, Kansas City. Eggs, $1.50 to $3.00 per 15. D. Van Rennen, 6440 So. May St., Chicago, Ill. Square Deal.

Silver-Spangled Hamburgs — Winners at leading shows. Many fine utility and exhibition cockerels. Stock and eggs for sale. Satisfaction guaranteed. Frank Heilman, North Judson, Ind.

Silver Spangled Hamburgs, real good ones, spangled all over, winners at 18 shows and fairs, guaranteed eggs $2.00 for 15; $3.50, 30. Descriptive circular free. Charley Laughlin, Bloomfield, Ind.

Silver Spangled Hamburgs, bred from egg record and prize winning stock from $1.50 up. Eggs, 15 for $1.00, 50 for $2.50; 100 for $4.50. Henry Bartig, Augusta, Wisconsin.

Houdans

Houdans—Dependable exhibition and utility cockerels for sale. Eggs from selected matings after March 1st; $2.00, 15; $3.50, 30. Satisfaction assured. Elm Park Place, Lawrence, Kan. W. L. Bullene.

Famous Houdans. Eggs and day-old chicks from our fine large farm raised Houdans. Eggs, $2.00. Catalog with photograph for stamp. Prospect Poultry Farm, Orleans, Ind.

Eggs for sale from pure bred Houdans, $1 50 setting of 15; my birds won first and second at the county fair. Mrs. Clarence J. Bettis, Route 7, Forestville, N.Y.

Langshans—Black and White

Black Langshans; eggs, $1.00 setting; $5.00, 100. Rose Comb Brown Leghorns and Single Comb White Leghorns; eggs, $4.00, 100. Satisfaction guaranteed. Golden Gate Farm, Lafayette, Indiana.

White Langshan, Buff Rocks—Fine color. Eggs, 15 $1.25. M. B. Turkeys, Hadley strain winners, 55-lb. sire eggs. Mrs. Lizzie Mumpower, Chillicothe, Mo.

Black Langshans. Choice stock for sale from prize winners. Eggs booked for delivery from now on. Mrs. W. S. Wood, Route 1, Hunnewell, Mo.

Happy Hollow Black Langshans are as good as grow. They have won more prizes than any flock in Illinois, same number of entries. Eggs, $3.00 for 15. Chal White, Prop., Hillsboro, Ill.

Langshans, Black and White—The great winter layers. Black, 15 eggs for $1.50, 100 eggs $7. White, 15 eggs for $2, 100 eggs $8. Can ship by Adams Express and U. S. James A. Armann, Powhattan Point, Belmont Co., Ohio.

High quality Black Langshans, S. C. Rhode Island Reds and Light Brahmas Prize winners and good winter layers. Eggs $1.00 and $2.00 per 15. Brock Bros., Mill Shoals, Ill.

Black Langshans. Winners American Royal, Missouri State shows. Farm raised, healthy, vigorous, big layers. Show stock, utility prices. C. M. Stackhouse, Box 567, Parkville, Mo.

Prize-winning Black Langshans, Buff Orpingtone. Eggs, $1.50 per 15. Fine cockerels for sale cheap. Jno. Cole, M. D., Williamsfield, Knox County, Illinois.

Leghorns

Single Comb White, Brown, Buff and Black Leghorn, hatching eggs and baby chicks. Good farm raised stock. Moderate prices. Paul Bechtner, Route 5, Waukesha, Wis.

Winter Laying Leghorns. Bred to "Shell Out" eggs, and do it. Baby chicks, eggs, stock. Catalogue free. O. C. Frantz, 85 South, Rocky Ford, Colo.

Leghorns—Brown

Single Comb Brown Leghorns. Phenomenal layers and prize winners, in any size show, regardless of competition. This season they have won high honors at Hagerstown, Maryland, Roanoke, Front Royal and Lynchburg, Va., Charlotte, North Carolina, and Atlanta, Georgia. Eggs only $2 per 15. Mating list mailed upon application. H. C. Adams, Lynchburg, Va.

Rose Comb Brown Leghorns. First prizes at Illinois and Missouri state shows, Indianapolis, etc. Heavy laying strain, best chickens for farmers. Eat least, lay most. Eggs from flock, $5.00 per hundred. Pens, $5.00 per 15. Oscar Wells, Farina, Ill.

Brown Leghorn Eggs, $3.00 per 15. Winners at Chicago, St. Louis, Cleveland, Cincinnati, Indianapolis. Over 400 premiums. Free circular on show record and matings. 25 cockerels at $1.00 each. E. E. Carter, Knoxville, Tenn.

Eggs for sale. Single-Comb Brown Leghorn pure-bred stock. Free range from a good laying strain. Incubator eggs in season, 120 eggs for $5, 260 for $10; a setting of 15 eggs, 75c. Fred Huecker, Route 1, Bunceton, Mo.

Eggs that will hatch from pure bred farm raised Single Comb Brown Leghorns. Great layers. $1.00 per 15; $4.00 per 100. Day old chicks, 25 for $4.00. Satisfaction guaranteed. Wm. Ellerman, Rt. 1, Versailles, Indiana.

Lamson's Rose-Comb Brown Leghorns are bred to lay. Madison Square and other big show winners. Stock, eggs and chicks. Circular free. H. Lamson, Box L, Cameron, N. Y.

Rose Comb Brown Leghorns, Mammoth Pekin Ducks. Winners at State Poultry Show, Detroit, 1911. Stock, eggs and baby chicks. Prices reasonable. Claudia Betts, Hillsdale, Mich.

Single Comb Brown Leghorns. Bred-to-lay strain. Also Light Brahmas, utility bred. Eggs for hatching. Circular free. Maple Leaf Poultry Yards, Tunnell City, Wisconsin.

Rose Comb Brown Leghorns, hardy Northern birds, good layers; eggs, 20, $1.00; 100, $3.50. Shipped the same day laid. Mrs. Chas. Brown, Cavalier, N. D.

S. C. Brown Leghorns. 4 pens mated. Booking orders now for eggs. Bright's strain, finest in the world. Granite State Poultry Yards, Nashua, N. H.

Single-Comb Brown Leghorns. Champions of the entire West. Over 300 prizes won in 22 yeare. Circular free C. F. Lang, LaCrosse, Wis. Box F.

S. C. B. Leghorns—Bred exclusively for 25 years. Have as good as money will buy. Try some of my stock. W. W. Egbert, Millersburg, Ill.

R. C. Brown Leghorns of quality. Show birds for big shows. Bred for years to lay. Circular free. W. C. Pifer & Son, Keyser, W. Va.

Single comb Brown Leghorn eggs 75c per 15, $4.00 per 100. Get circular describing show matings. Geo. F. Blake, Maquoketa, Iowa.

Leghorns—Buff

S. C. Buff Leghorns, Gold Dust strain. I am waiting for your order and will fill it promptly. A few good ones for sale. Eggs from 4 best pens, $2.00 per 15. Write for list and mention Fruit-Grower. J. C. Eisenman, Greensburg, Ind.

For Sale—S. C. Buff Leghorns. Some fine show birds. A lot of magnificent cockerels and pullets, all prices. My old birds are select matings from the best breeders in America. Mrs. Anna H. Baldwin, Keswick, Ia.

The Sunshine Flock S. C. Buff Leghorns. Gold on your farm; gold in your pocket. Pen 1, $3.00 per setting of 15; Pen 2, $2.00; Pen 3, $1.00. Range, $5.00 per 100. Mrs. Anna H. Baldwin, Keswick, Iowa.

Green's Golden Feather strain Buff Leghorns, single rose. Best blood produced; winners everywhere. All scored by Pierce. Photos, feathers, winnings free. Horton Green, Colchester, Ill.

Hart's Single Comb Buff Leghorns are layers, winners and payers. You can get along without this strain but you can get along better with it. Mating list free. W. D. Hart, Ashland, Mo.

Pure Bred Single Comb Buff Leghorns, winners at two state shows. Bred to lay. Beautiful Golden Buff. Eggs, $1.00 for 15; $5.00, 100. E. L. Aldrich, Keokuk, Iowa.

Rose Comb Buff Leghorns, perpetual layers. Buff Orpingtons, winter egg machines, 15 guaranteed eggs, $1.50. Goldenrod Poultry Farm, Mesa, Colo.

Single Comb Buff Leghorns, the laying kind. Eggs from prize winners. $2.50 and $3.00 per 15. Joseph E. Mattison, Box 377, Paducah, Ky.

15 Eggs, $1.50, from 6 choice pens of Single Comb Buff Leghorns and Rhode Island Reds. Also stock for sale. G. C. Mahle, Washington, Ill.

Merihews Buff Leghorns. Won five regular and special prizes at the last Madison Square Garden show. Write for mating list. L. E. Merihew, Marathon, N. Y.

S. C. Buff Leghorn eggs, $1.50 per 15; bred for unusual egg production, exclusively, and they deliver the goods. Edwin M. Larason, Newark, Ohio.

Single Comb Buff Leghorns exclusively. 14 years. Select matings. 15 eggs, $1.50. Utility stock, 15, $1.00, $3.00, 100. Mrs. Frank Carnahan, Route 3, Adrian, Michigan.

Single Comb Buff Leghorns. Cockerels, $1.50. Pen eggs, 15, $2 00. Range, 15, $1.00; 100, $5.00. Baby chicks, 12½ cents each. Mrs. John H. Wood, Solomon, Kansas.

Choice Single-Comb Buff Leghorns, $1.25 each, $3.25 per trio. Indian Runner drakes, $1.25. Eggs in season, from prize winners. Hillcrest Farm, Blackwater, Mo.

Single Comb Buff Leghorn Eggs that hatch winners, $1.00, 15; $4.00, 100. Partly grown baby chicks a specialty. Mrs. L. Boldig, Tigerton, Wis.

Silver Leghorns

Silver Leghorns a specialty; 11 years a breeder of this beautiful variety. Send for my free circular. Sylvester Shirley, Rt. 3, Port Clinton, Ohio.

Leghorns—White

The famous laying and paying 240-egg strain. Single Comb White Leghorns, and Barred Rocks. 300 yearlings as pullets paid a profit of $2.50 each, from September 5, 1910 to September 23, 1911, in market egg records. Hatching eggs and baby chicks, baby chicks hatched in our candle mammoth incubator; season's capacity 50,000 chicks. Send for booklet. Lilly White Poultry Farm, Grand Rapids, Mich.

Single-Comb White Leghorns exclusively. D. W. Young's strain, finest in the world. Greatest layers, all on free farm range; 4,000 breeders. Eggs for hatching now ready at $6 per 100, in any quantity. Baby chicks ready in March. My great book, "Profits in Poultry Keeping Solved," will start you right. Price, $1.; circular and testimonials free. Edgar Briggs, Box 44, Pleasant Valley, N. Y.

Single-Comb White Leghorns—Our famous "Weja" strain. Barred Rocks, Ringlet strain. Cocks, cockerels, hens and pullets for sale. Booking orders for baby chicks, 10 cents each. Our customers return year after year, which is proof conclusive. Our stock pleases. Peerless Poultry Farm, Kenton, Ohio.

Single Comb White Leghorns of Quality. Prolific layers. Large snow white. Free range. Best equipped poultry ranch in Southern Indiana. Stock and eggs for sale. Eggs, $5.00 per hundred. Satisfaction guaranteed. Write, The Maples, Dr. J. D. Horton's Poultry Farm, Paoli, Ind.

Hoyle's Single Comb White Leghorns. Prize winning egg machines. Prices reasonable. Eggs and baby chicks. Special rates in quantities. White egg strain. Fawn and White Indian Runner duck eggs. The Hoyle Poultry Farm, Whittier, Iowa.

Rose Comb White Leghorns, bred from winners at Chicago, St. Louis, Minneapolis, Oshkosh and Fond du Lac. Eggs, $1.50; $1.00 per 15; $5.00 per 100. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

Standard Bred S. C. White Leghorns. (D. W. Young's strain); not one drop of any other blood. Eggs and stock for sale. Mating list free. Now ready. S. F. Shallcross, Box 80, Odessa, Dela.

S. C. White Leghorns exclusively, raised on open range. Strictly healthy eggs for hatching, $1.00 per 15; $5.00 per 100. From prize winning stock. Walnut Grove Poultry Farm, Gallatin, Mo.

Empire State Single-Comb White Leghorns. Prize winners and heavy layers. Trios $5.00. Eggs for hatching $1.00 for 15. $5.00 per 100. Circular free. C. H. Zimmer, Weedsport, N. Y.

Single-Comb White Leghorns—Winners at leading shows for 28 years. Choice stock for sale. Eggs in season. Write your wants. J. H. Kollmeyer, Quincy Heights Poultry Farm, Quincy, Ill.

Single Comb White Leghorns, Young and Wyckoff strains. Stock for sale. Eggs $1.50 per 15, $2.50 per 30, $7 per 100. Baby chicks $15 per 100. K. I. Miller, Box 53, Lancaster, Mo.

Sunflower Poultry Farm. Single Comb White Leghorns exclusively. Best mating, $3.00 and $5.00 per 15; utility, $1.00 and $5.00 per hundred. Arthur L. Knapp, Branford, Conn.

Brookside famous winter laying strain of Single Comb White Leghorns, the kind that lay and pay. Eggs for hatching a specialty. Catalog free, Brookside Poultry Farm, Bachmanville, Pa.

Bliem's Single Comb White Leghorns. World's famous exhibition and laying strain; stock; eggs; 16 years experience. Circular free. Samuel S. Bliem, R. R. 5, Pottstown, Pa.

S. C. White Leghorns. Breeder of "Bred to Lay," a strain of unsurpassed winter layers. 15 eggs, $1.00; 100 eggs, $5.00. No order too large. R. S. Ketcham, Box 20, Boonville, Ind.

Snow White Leghorns, Single Comb, Young's strain. None better. Eggs and cockerels scored by Heimlich for sale. Circular free. John J. Schmidt, DeSoto, Mo.

Single-Comb White Leghorns; large plant, large fowls, large eggs. Stock for sale; eggs for hatching, baby chicks in season. Catalog. Fowler Egg Farm, Fowler, Colorado.

Ozark Strain White Leghorns; great layers, great beauties. Send for catalog, its different. Eggs of quality for incubator or hen. F. S. Newcomb, St. James, Mo.

Cherry Grove Poultry Farm. S. C. W. Leghorns. 300 pullets and yearlings for sale and eggs for hatching. Baby chicks a specialty. J. A. Hochstedler, Rocky Ford, Colo.

171 eggs per hen per year; average of our S. C. White Leghorns. Prize winnere. Stock, eggs, chicks; mating list free. Cunningham Bros., Route 5, Lansing, Michigan.

S. C. W. Leghorn eggs from prize winners, St. Louis, East St. Louis, Quincy and Belleville. Several splendid cockerels left. Julius W. Weber, Belleville, Illinois.

Single Comb White Leghorns. (Young etrain). Prize winners, 92 to 96 pointers. Eggs and baby chicks a specialty, Booklet free. W. H. McCormick, Ransom, Illinois.

Single Comb White Leghorns exclusively, large, stay white kind, heavy layers, and profit payere. Eggs, $4 and $10 per hundred. H. A. Teegarden, Union City, Indiana.

S. C. W. Leghorns, Ingraham strain. Large white birde, prolific layers; none better. Egge for sale. C. G. Ingraham, Originator of the etrain, Waukegan, Illinois.

Single Comb White Leghorns. Winners of the Blue and Red. Baby Chicks. Eggs for hatching, any number. Yarmond Poultry Farm, Dept. F. Cranford, N. J.

Eggs, S. C. W. Leghorns. Pen scores 90 to 95½. 75 cents per 15; $4.00 per 100. S. C. Mottled Anconas, 75 cents per 15. L. J. Hooper, Palmyra, Wis.

Cole's S. C. White Leghorns. Large, vigorous, farm raised birds. Heavy laying strain. Eggs, $1.25 per 15; $5.00 per 100. Cole's Poultry Farm, Quakertown, Pa.

Single Comb White Legborns. The quality kind. Good winners at Detroit and Indianapolis, 1911; stock and eggs for sale. C. W. Hosmer, Union City, Mich.

S. C. White Leghorns—From grandest laying strains in America. Hatching eggs, $1.50 for 15; $5.00 per 100. A. Nafziger, Route 5, Benton Harbor, Mich.

Stoughton's Single Comb White Leghorns are a strain of winners, bred to lay; 25 acre range; 15 eggs, $1.50 Circular. Geo. A. Stoughton, Rockbridge, Ohio.

Eggs from fancy Single Comb White Leghorns, prize winning birds, Easling strain; $2.00 per 15; farm eggs, $1.00 per 15. Nat L. Brasfield, Unionville, Mo.

Reiff, the Farmer Fancier breeder of R. and S. C. White Legborns. Eggs for hatching 10c each, $10 per 100. Joseph Reiff, Route 2, Chambersburg, Pa.

$1.50 buys 15 eggs of thoroughbred single comb White Leghorns and a reliable naturol hen incubator. Aug. Ulrich, Route 3, Box 79, Kimmswick, Mo.

Single Comb White Leghorns, Runner Ducks. Eggs, $1.00 per 15; $4.00 per 100. Rose Comb Black Bantams, $1.50. Phil Ried, Castalia, Ohio.

Conradt's S. C. W. Leghorns lay large white shelled eggs; $1.00 per setting; 100 hens and cockerels for sale. C. G. Conradt, Ft. Madison, Iowa.

Get the best laying strain, S. C. White Leghorns Eggs, $6.00 and $10.00 per 100. R. M. Clark, Sunnyslope Poultry Farm, Quincy, Ohio.

S. C. White Leghorns. Young, Wycoff, heavy laying strain. Eggs five and ten dollars hundred. Guaranteed. E. E. Wells, Cohoes, N. Y.

S. C. White Leghorn pens score 93 to 94; $1.00 setting 15. 94 to 95¾, $1.50; scored stock have prize. Wm. C. Dahl, Berger, Mo.

Rose Comb White Leghorns. Chicago winners. Thos. Brogden, Rush Lake, Wis.

Minorcas—Black

Single Comb Black Minorcas exclusively (Northrup strain), unexcelled for laying. Eggs, $1.50 per 15. $5.00 per 100. Ward L. Hammond, Route 2, Oswego, New York.

Single Comb Black Minorca Eggs from etrain of National reputation, $3.50, 15; $6.00 per 30. Results guaranteed or your money refunded. Fred Kelm, Seneca, Kan.

I have bred S. C. Black Minorcas ten years, that won first prizes wherever shown. 15 eggs, $1.00; 50 eggs, $2.50. Stock all sold. Alton Finney, Platteville, Wis.

Single Comb Black Minorcas bred exclusively. Excellent laying strain. Eggs, $2.00 per 15 or $8.00 per 100. Minorca Farm, Sta. L, Route 3, Cincinnati, Ohio.

Rose Comb Black Minorca Eggs for hatching from first prize winners at Chicago and other large sbows. Mating list free. Edgar Brooks, Zion City, Ill.

Single Comb Black Minorcas, great egg strain. 237 eggs per hen. Eggs $2 per setting. Black Satin Minorca Yards, 6 Daisy St., Rochester, N. Y.

Rose Comb Black Minorca eggs, $2.00 per 13. From 92 to 96 point birds. Trios and pens for sale. Will Heintz, 819 Vine St., Quincy, Ill.

Minorcas—White

Single Comb White Minorcas. Pens made up from fine selected stock. Scores of satisfied customers. Eggs for hatching at right prices. Write for further information. W. E. Rice, Spartansburg, Pa.

Rose and Single-Comb White Minorcas. Choice, prize winning stock. 15 eggs, $2.00. Booking orders now. Charles M. Palmer, Nassau, N. Y.

Rose Comb White Minorca eggs $2.00, 15; $3.50, 30; $8.00, 100. From hardy range stock bred to lay. N. E. Hurlbert, Morrison, Ill.

Rose Comb White Minorcas, the world's best. Thos. Brogden, Rush Lake, Wis.

Ornamental

Silkies, White Frizzles, Black Frizzles, White Rumpless, Black Rumpless, White Guineas, Pearl Guineas, Gray Call Ducks, English Greyhound pups. (Wanted Peafowls.) Enoch Baily, Albion, Ill.

Orpingtons

Crystal White Orpingtons. Females from Kellerstrass $100.00 pen. Males direct from Kellerstrass. Eggs, $2.00 setting of 15. Rhode Island Reds, Lambke and Justie strain. Both combs. Eggs, $1.00 setting of 15. Orders booked to ship when directed. Roland McKean, Mulberry Grove, Ill.

Orpingtons, Black and White. My famous strain, Ring on Top, are the best by test all over the world, no matter how much you pay, you cannot get any better quality and remember at low prices. Large illustrated catalog free. Wm. A. Heinrichs, Sellersburg, Pennsylvania.

Gee-Whiz Fruit and Poultry Farm Orpington Eggs for hatching. Arkansas bred. Buff, White and Black. Bred right, kept right and sold right. Write for 1912 mating list. Gee-Whiz Fruit and Poultry Farm, Fred P. Phillips, Manager, Rt. 1, Gentry, Benton Co., Ark.

Crystal White and Golden Buff Orpingtons. Winning wherever shown. Twenty-five Buff and ten White cockerels, $2.00 up. Sold on approval. Booking orders now for eggs and baby chicks. Stamp brings mating list. Crystal Orpington Farms, Box F, Batavia, Ill.

Orpingtons, White (both combs), Single Comb. Buff, Black. New York, Boston, Hagerstown, Williamsport winners Eggs, Baby chicks, reasonable. Mating list free. Wm. Seidel, Box G, Washingtonville, Pa.

Orpington Place, where you get the best S. C. Buff and White Orpingtons in the West. Stock and eggs for sale. Send for mating list. Geo. B Moehrl, Marshalltown, Iowa.

Want to Buy or Sell?

Perhaps you have some extra nice cockerels to dispose of; it may be that you have some good pure-bred pigs to sell to those who wish to improve their droves; maybe you have some surplus small fruit plants; you may want to buy a farm or to sell one; you may want to hire a man or to get a job for yourself. No matter—whatever you have to sell, or whatever you want to buy, you should use the advertising columns of The Fruit-Grower, and

Advertise Your Surplus on This Page

Hundreds of Fruit-Grower readers find it profitable to advertise in our Classified Columns. The cost is small, and returns great; you can make money by advertising your surplus wares in this department. There's nothing like it for cheap, effective advertising. Rate is

FIVE CENTS PER WORD PER ISSUE

Cash with order. We don't want to keep books on this department, and cash for advertising must accompany the order. Copy can be changed as often as desired. Send your copy for next issue. Address

The Fruit-Grower Classified Department **St. Joseph, Mo.**

Single Comb Buff, Whits, Rosecomb White. Prize Winners. Bargains in Breeders. Eggs, $1.50 up. Hens with Baby Chicks, $4 up. Mating List. Doctor Evans, LaGrand, Iowa.

S. C. Black and White Orpingtons. Eggs for hatching from prize stock having best blood lines in existence. Prices, $2.50 to $5.00. Vernon Mathews, Vineyard, N. Y.

Orpingtons—Black

Single Comb Black Orpingtons, prize winners. Winning six firsts, four seconds, three thirds, two fourths, two fifths at three shows. Eggs from two grand pens, $2.00 and $2.50 per 15. John Holscher, Dyersville, Ia.

Schuman Single-Comb Black Orpington. Best of all winter layers. Scoring as high as 94½. Winners wherever they show. Eggs in season. $2.50 for 15. Ed. J. Schuman, Neosho, Wis.

Criterion Black Orpingtons for laying and winning. Standard size type, color. Crystal Palace and American winners. Mated up. Catalog. Lykens Valley Farm, Box G, Sacramento, Pa.

Black Orpingtons exclusively. The low, blocky kind. Winners twice of the American Orpington Club Cups. Stock for sale. Eggs, $5.00 and $3.00 per 15. E. F. Arrington, Milton, Wis.

Black Orpingtons, Cook and Owens strains; prize winners. Also Single Comb Black Leghorns. Great winter layers. F. G. Turner, Box 356, Alleghany, N. Y.

Davis Black Orpingtons win wherever shown. A few extra bargains in stock. Eggs, $3.00 per 15. S. H. Davis, Box N, Lansing, Mich.

Black Orpingtons. Stock and eggs for sale. High class, score 93 to 95½. Write for prices. Circular free. Satisfaction guaranteed. T. Haynes, Red Bud, Ill.

Choice breeding pens, blue winning Black Orpingtons. Great layers. Fine color and shape. Eggs, $15.00 per hundred. Ada Pratt, Route 6, Elgin, Ill.

Buff Orpingtons

S. C. Buff Orpingtons. Eight pens headed by cockerels scoring 93. Raised from imported birds scoring dam 93½, sire 95¼. Eggs from all pens, $2.00 per 15; $10.00 per 100. Satisfaction guaranteed. S. B. Terry & Son, Little Sioux Poultry Yards, Little Sioux, Iowa.

Single Comb Buff Orpingtons exclusively. Eggs from special matings, choice exhibition stock, $3.00 to $5.00 per 15. From utility stock, $1.50 per 15; $6.00 per 100. Send for mating list. Leo. W. McDavitt, Lamlata, Mo.

Buff Orpingtons. Our birds are noted for vitality, type, size and utility qualities. Also winning at leading Illinois shows. Mating list free. Eggs, $1.00, $2.00, $3.00 per 15. Tietsort & Stutzman, Box B, Girard, Ill.

Eggs and prize winning S. C. Buff Orpingtons at $1.00 for 15, $2.50 for 50. Eggs from S. C. Black Orpingtons, $1.50 for 15, $3.50 for 50. Satisfaction guaranteed. Carl J. Hedberg, Boxholm, Iowa.

Single Comb Buff Orpingtons, Single Comb White Leghorns, Indian Runner Ducks. Exhibition, heavy laying combined. Eggs, $1.00 per 15. Cedar Hedge Poultry Farm, Box 1101, Savannah, Ohio.

Winter Laying Strain. S. C. Buff Orpingtons. Stock and eggs for sale. All Buff Beauties and bred to lay in winter. Send for catalog and prices. Booking orders now. V. T. Williams, Stanberry, Mo.

Single Comb Buff Orpingtons. Pen headed by 2nd cockerel Kansas State Show, 1910; hens from "Victor," 1st cock, same show. Eggs, $5.00 for 15. Mrs. T. A. Jackson, Yates Center, Kan.

Buff Orpingtons, Owens strain. Won prizes in two good shows. Cock scored 93 by Russel. Stock all sold. 15 eggs, $3.00. Fertility guaranteed. Club member. C. D. Adams, Olathe, Kan.

Single Comb Buff Orpingtons. Ten grand pens of prize winners. Eggs, $1.50, $2.00, $3.00 per 15; $5.00 and $7.00, 100. Over 500 prizes in four years. H. D. Kelley, Reedsburg, Wis.

Eggs for hatching, from best blood lines of S. C. Buff Orpington chickens and standard bred pure white egg strain of Indian Runner Ducks. Prices right. C. C. Dawson, Chrisney, Ind.

S. C. Buff Orpingtons and Anconas. Prize winning stock for sale. Eggs for hatching from free range birds. Price low. Guarantee satisfaction. J. R. Wilcox, Knoxville, Pa.

Closing out Buff Orpingtons. Pullets, $1.50 to $2.00. Cockerels, $3.00. Excellent Barred Rock cockerels, $3.00 to $5.00. Pullet bred. Eggs. Frederick Coons, Greendale, N. Y.

241 egg strain, Single Comb Buff Orpington eggs for hatching, 75 per cent fertile guaranteed. Cook strain direct. Circular free. Try me first. Walter Bardsley, Neola, Iowa.

Buff Orpingtons. Two great shows, won 4 1st, 2 2d, 2 3d, 2 4th, and 8 specials. Eggs, $1.50 and $5.00 per 15. Write for catalog. B. F., Aug. Petersen, Churdan, Iowa.

Would like to buy 25 Buff Orpington hens now laying and about 25 Plymouth Rocks, also 12 ducks and 12 geese. Karl Kraus, La Grangeville, Dutchess County, N. Y.

Single Comb Buff Orpingtons. High scoring stock. Rich in blood of Madison Square winners. Eggs, $1.50, 15; $2.50, 30. Utility, $5.00, 100. Mrs. Fred Jones, Kane, Ill.

Send a $5.00 money order to W. T. Reinlinger, Ottoville, Ohio, for setting Single Comb Buff Orpington eggs and raise some prize winners. Satisfaction guaranteed.

Thorobred Orpingtons — Buffs, pen, $2.00 per 15. Range, $1.00 per 15; $5.00, 100. Whites, Kellerstrass strain, $2.50 per 15. Mrs. S. W. Pfister, Hiawatha, Kansas.

S. C. Buff Orpington Eggs from prize winners at Illinois State Fair, 1911, won 1st cockerel. Write for mating list. Mrs. Ferne Deuterman, Atlanta, Ill.

S. C. Buff Orpingtons and Red Carneaux Pigeons. Quality and price makes business. Eggs and stock for sale. Write me. J. B. Joseph, Sears, Ill.

S. C. Buff Orpington Eggs. Martz and Owens strain, best winter layers. Big egg record. Golden Buff, $1.50 to $3.00 setting. Thomas Fewtrell, Joliet, Ill.

Early Bird Buff Orpington Farm. Orpingtons that are Buff. Eggs that will hatch. Always a cock for sale. Dr. W. I. Griffith, Fort Scott, Kansas.

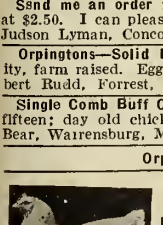
Single Comb Buff Orpingtons (Cook's strain) direct. Good colors, good size, good shape. Write for mating list. Riddle & Sons, Le Roy, Ill.

Send me an order for 50 S. C. Buff Orpington eggs at $2.50. I can please you. $4.50 per hundred. Mrs. Judson Lyman, Concord, Mich.

Orpingtons—Solid Buffs. Mammoth size, fine quality, farm raised. Eggs, $1.50 per 15, $7 per 100. Herbert Rudd, Forrest, Illinois.

Single Comb Buff Orpington; eggs, $1.50 to $3.00 for fifteen; day old chicks; send for mating list. J. W. Bear, Warrensburg, Mo.

Orpingtons—White



Crystal White Orpingtons, Kellerstrass strain. We won the blue at eight big shows. Stock, Eggs and Baby Chicks always for sale. Mountain View Ranch, 8 Sugar Station, Salt Lake City, Utah.

Crystal White Orpingtons are the most popular chickens in the world today. You can see more of them advertised than any other breed of chickens. Why—because they weigh more and lay more. We were the originators of this famous breed. They were originated right here on our farm. If you want to know more about them and the prices of stock and eggs, send for our large illustrated catalog. Kellerstrass Poultry Farm, 9176 Westport Road, Kansas City, Mo.

Single Comb White Orpingtons. Many prize winners mated this season for eggs. Baby chicks after April 1st. Eggs, $2.00 to $10.00 per 15. Send for mating catalogue. Superior Poultry Farm, A. J. Bullis, Prop., Goodland, Ind.

White Orpingtons, Kellerstrass and Cook strains. Heavy layers; winners at Ft. Madison, Keosauqua, Bonaparte, Keokuk, Ia., Warsaw, Camp Point, Ill. Eggs, $3.00 setting, 30 for $4.00. J. M. Skinner, Keokuk, Iowa.

Our Crystal White Orpingtons and Mani Light Brahmas have been awarded sixty-three regular and eleven special prizes at Iowa shows, 1911-1012. At Des Moines we took 1st cock, 1st and 2d cockerel, 1st and 2d pullet, 2d and 3d hen, 2d pen. Silver cup for best cockerel, silver cup for display Brahmas and Sweepstake cup over all Asiatics. Stock for sale; eggs, $3.00 and $5.00 per 15. Fairholm Poultry Yards, 307 W. 4th St., Boone, Iowa. W. Oliver, Mgr.

Imported Single Comb White Orpington stock and eggs from first prize cockerel, third prize cockerel, second pen, second and fourth pullets at Illinois State Poultry Show, Springfield, 1911, and winners at many other shows. Write for mating list and prices. Heaps White Orpington Farm, Kewanee, Ill. Dayle S. Blake, manager Warren T. Heaps, M. D., Proprietor.

Single Comb White Orpingtons, Kellerstrass strain. I furnish you the foundation for top-notchers in cocks, cockerels, hens, pullets, baby chicks or eggs. Send me what you feel you can invest in any of the above, and if I don't please you, you can have your money back (with a smile). Write for mating list. Mrs. W. H. Vreeland, Pattonsburg, Mo.

Buy "Crystal White Orpingtons"—Best for market because they grow faster; best for eggs because they are the "winter egg" machines. I am booking orders now for eggs from prize winners at Lansing and Port Huron, Michigan shows, 1911. Prices, $3.50 and $5.00 per 15. William Purfield, Ann Arbor, Mich.

Crystal White Orpingtons from high-scoring pen laying 63 per cent. Five months old pullets averaged 53 per cent. A few choice cockerels and pullets. Satisfaction guaranteed. Eggs, $1.50 and $1.00. Marion Stevenson, 2712 Pine St., St. Louis, Mo.

Kellerstrass and Jackson Strain of Crystal White Orpingtons. Eggs for hatching, $2.50, $5.00 and $8.00 for settings, of 15. All pens are of excellent stock. Eggs at $8.00 are from first prize winners. Mrs. J. N. Byrd, Branchville, S. C.

White Orpington Eggs, $3.00 for 15, from pen headed by 9-lb. cockerel and 8 and 9-lb. hens, $5.00. Robert Broeker, Nevada, Mo.

Kellerstrass Crystal White Orpingtons, single comb, 75 fine large pullets for sale. Price $5 each. I have no culls. Eggs from five fine pens at $3 15, $5 30, $7 45. Booking orders for January and February. James A. Driggs, Liberty, Ind.

Kellerstrass Orpingtons—April hatched stock from a $100.00 pen direct from the Kellerstrass farm and selected by him. Choice cockerels and pullets at a bargain. Eggs after April first, $5.00 per setting. Miss Susie M. Fowler, Slater, Mo.

White Orpington Eggs from imported pen, $15.00 per 15. First pen American birds, $10.00 per 15. Several pens, all prize winners, $5.00 per 15. Satisfactory hatch guaranteed or refilled at half price. Wm. Thurman, McMinnville, Tenn.

S. C. White Orpingtons and Salmon Faverolles. Winners silver cup Zion City and 3 1sts, 2ds and 3rds, and 1st pen at Oconomowoc, Wis. Cockerels for sale. Mating list. Innes Crystal W. Yards, Chas. Innes, Zion City, Illinois.

We have 40 of Kellerstrass famous breeders, from which he sold eggs at $2 each. We can sell eggs from these identical hens for $3, $4 and $5 per setting. Special rate per 100. Mrs. Little, 36th and Jackson, Kansas City, Mo.

Kellerstrass Crystal White Orpingtons direct. Eggs from a $70 pen, 1911 birds, $3 for 15; others, $2 and $1.50. Hen-hatched, brooder-broke chicks, 20c to 30c each. Wardwell Poultry Yards, Grant Ave., Rutland, Vermont.

S. C. White Orpingtons. The ideal farmer's fowl; quick growers, big weighers, big layers and acclimate themselves easily. Eggs from utility stock, $1.50 per 15. G. F. Fisher, 122 N. Seltzer St., Crestline, Ohio.

6 Single Comb Breeds—Kellerstrass White Orpingtons, Buff Orpingtons, R. S. Reds, Barred Rocks. 15 eggs first pen $1.50, second $1. Partridge Rocks $2. Black Minorcas $1. N. P. Cronk, Montour, Iowa.

Kellerstrass White Orpingtons, I won nine prizes in class of fifty-three shown by eight exhibitors. Birds score to 95½. Mating list. Fifteen eggs, $3.00. Express prepaid. Edward Buss, Janesville, Wis.

Crystal White Orpingtons. Write us your wants, we have both stock and eggs for sale. Foundation stock a $100.00 pen direct from Kellerstrass Farm. Hardin Poultry Farm, Route 1, Noble, Okla.

S. C. White Orpingtons, Philo and Kellerstrass. Pedigreed winter laying and exhibition strains. Matured classy birds. Orders filled in turn. Eggs, 20c each. R. W. Howland, Manchester, Iowa.

White Orpingtons of Quality. Eight grand pens. Eggs shipped anywhere. Catalogue describes each. Noted winners and layers. F. Bullington, Secretary, White Orpington Club, Richmond, Va.

Single and Rose Comb White Orpingtons. Best strains. Single Comb White Cochin Bantams. Eggs after March 1st. Miss Edith Cavanagh, Cavaina Poultry Farm, Orange, Virginia.

Kellerstrass Crystal White Orpingtons, Miles trapnested Single Comb Rhode Island Reds. Baby chicks and eggs for hatching. Forestview Poultry Farm, R. D. 2, Saint Johnsville, N. Y.

From $1,000.00 Madison Square, N. Y., and Crystal Palace, England winners, 6 pullets and cockerel, $10.00. Eggs very best $1.00 to $5.00 per 15. A. M. Sinsabaugh, Wyalusing, Pa.

S. C. White Orpingtons, two grand pens mated for my especial purposes; a few eggs at reasonable prices; also McAvoy's Houdans. Send for mating list. Dr. F. E. Barnes, Charleston, Ill.

Kellerstrass White Orpingtons—Won twenty specials, ten state premiums, two silver cups, first at Missouri State Show and Poultry Association medal. Dr. Gruebbel, Concordia, Mo.

Kellerstrass Crystal White Orpington cockerels; few, $3 to $5. Parent stock direct from Kellerstrass, $30 mating. Eggs, $3 to $5 per 15. W. H. Briner, 1528 Lawn, Kansas City, Mo.

Crystal White Orpingtons (Kellerstrass strain), at Iowa State Fair, 1911, won 2d cock, 2d hen, 3d pen laying contest. Eggs, $2.50 per 15. P. A. Fosselmann, Route 6, Waverly, Iowa.

Orpington Eggs, $3.00 per 15; $12.00 per 100. Birds from $50.00 and $100.00 Kellerstrass trios. My birds have been laying all winter. Cockerels, $2.00. Roy Bowman, Albany, Wis.

Kellerstrass Crystal White Orpingtons; farm raised, hen-hatched cockerels and pullets, sold under guarantee at reasonable prices. Egg orders booked. Harvey Brown, Highmore, S. D.

White Orpingtons of quality. Kellerstrass strain direct. Blue-ribbon winners. Utility eggs, 15 $1, 100 $6. Circular free. Satisfaction guaranteed. J. H. Keefer, Millersburg, Pa.

Eggs for Hatching. Kellerstrass strain (direct). I have eggs from this famous strain of Single Comb White Orpingtons at reasonable prices. Thos. H. Kean, Nantucket, Mass.

Orpingtons—Crystal White (Kellerstrass). The big layers of quality. Breed only one kind, stock and eggs. Send for illustrated catalogue. Crystal Poultry Yards, Fredericktown, Mo.

White Orpingtons. My Orpingtons pay because they are bred to lay, have the size and "Sta-White" color. Eggs reasonable. Satisfaction guaranteed. H. A. Snyder, Tampico, Ill.

Orpingtons—All single-comb varieties. Won 120 prizes at three state shows. Special bargains in pens, trios and cockerels. Boomgaarns Farms, Box F, Humboldt, Nebraska.

High Class White Orpingtons. Eggs, $1.50 per setting. Here's your chance to get good stock or new blood cheap. Book your order early. Will H. Melzer, Effingham, Ill.

Single Comb White Orpingtons, Kellerstrass strains. Stock for sale, eggs $2 per 15, $5 per 45, $10 per 100, express paid. Chicks 30c each. K. I. Miller, Box 2, Lancaster, Mo.

Buy Crystal White Orpington eggs, ten to fifty cents each, of a specialist who is deep in the show business. Winners at the largest shows in Iowa. C. Hummer, Keswick, Iowa.

Single Comb White Orpington eggs for sale, $3.00 to $5.00 per 15. Mrs. Chas. E. Huested, Nassan, Rens Co., Box 84, N. Y.

Kellerstrass Crystal White Orpington cockerels, $2.50 each; eggs, $2 per 15, or $6 for 50. Robert C. Boss, Route 9, La Porte, Ind.

Single Comb White Orpingtons, Kellerstrass strain. Have won at Altoona, Williamsport, Scranton. Eggs, $2.00, $3.00, $5.00 per 15. D. A. Strayer, Box D, Codport, Pa.

Kellerstrass White Orpington eggs and baby chicks from prize winners, for sale. Greatest winter layers. Most popular breed of today. Dr. Walter Turman, Marshall, Ill.

Kellerstrass Crystal White Orpingtons. I have some fine pens, farm-reared stock. Eggs in season. Prices right. Satisfaction guaranteed. Frank F. Peck, Bainbridge, N. Y.

S. C. White Orpingtons, blue ribbon winners. If you need any eggs be sure and drop me a card before you buy. I guarantee satisfaction. O. F. Stark, Boxholm, Iowa.

Kellerstrass Strain Crystal White Orpingtons from his $30.00 matings. "We have the goods." Write for prices. M. A. Clark & Son, 25 Myrtle St., Redlands, California.

Kellerstrass Crystal White Orpingtons at live and let live prices. Eggs and chicks. Literature free. Orpington Club member. S. L. Hurley, Box G, Elmira, New York.

Kellerstrass Crystal White Orpingtons. Eggs, $3.00 per setting; two settings, $5.00, from Pen 1. All others $2.00 per setting. James L. Robinson, Route 1, Smithville, Mo.

Kellerstrass Orpingtons. Eggs, $1.50 per 15. Fishel White Wyandottes; eggs, $1.00 per 15. Satisfaction guaranteed. Safe delivery. Walter Steidinger, Forrest, Illinois.

Crystal White Orpingtons. Descendants of a Kellerstrosa $500.00 pen. Extra layers, grand type and size. Farm raised. Eggs, 10c each. A. E. Starr, Andover, N. Y.

Kellerstrass and Jackson Whits Orpingtons. Direct blue ribbon winners, $5; others $2 and $3 setting. Black Orpingtons, $2 a setting. Henry Fisse, Jr., Kokomo, Ind.

A $100 White Orpington Pen. Eggs from $20.00 matings direct from Kellerstrass; circular; eggs, 8c each and $5.00 per 15. Orpington Farm, Niobe, N. Y.

Royal Strain White Orpingtons. Snow white, ideal layers. Baby chicks, $6.00 for 12. Eggs, $2.50 for 15. Buy the best. Royal Yards, J. H. Irons, Elmira, N. Y.

Kellerstrass White Orpingtons. Pullets and yearling hens, $2.00 each. Also mate pens and trios. Eggs at $10.00 per 100. Mrs. Ad Hanna, Big Rock, Ill.

For Sale. S. C. White Orpington hatching eggs, $3.00, 15; birds score 95 points. Utility, $1.25. W. H. Harbison, 338 S. Douglas Ave., Springfield, Ill.

Best pen of White Orpingtons in Texas. Winners at our largest shows. Imported. Eggs, $12.00 for 13. Texas Orpington Farm, Box FG, Flatonia, Texas.

Crystal White Orpingtons, eggs $5, $3 and $2 per 15. Incubator lots from utility stock a specialty, $7.00 per hundred. Mrs. Jess Burford, Waveland, Indiana.

Crystal White Orpingtons. My foundation stock is from a $100.00 trio, and Kellerstrass eggs. Eggs, 10c, $8.00 per 100. Mrs. Ethel Cook, Andover, N. Y.

Why Snyder's Kellerstrass Orpingtons? My booklets tell. Eggs from stock scoring 92 to 96¼ at $2, $4.50 and $7.50 per 15. W. C. Snyder, Bunceton, Mo.

Quality White Orpingtons. Win every year. Male birds, $3.00 up. Eggs reasonable in season. Whatever you need we have it. C. Colby, Hillsboro, Ill.

Single-Comb White Orpingtons of the better sort. Won first honors at the great Illinois state fair three years in succession. Troy Medaris, Bement, Ill.

Kellerstrass Crystal White Orpingtons. Eggs $2 per 15 up. I have stock from eggs bought of Kellerstrass at $2 each. F. R. Brill, Hampshire, Ill. Box 70.

Extra fine S. C. White Orpingtons. We are booking eggs for early delivery. Write your wants. Granite State Poultry Yards, Box 52, Nashua, N. H.

S. C. White Orpingtons. Selected eggs, from pens of beauties, $2.00 per 15. $10.00 per 100. Packed to hatch. T. H. Burke, No. Bennington, Vt.

White Orpington trios, $7.50; pens, $10. Cockerels from $3 upwards. Now is the time to order from Robert Broeker, Nevada, Mo.

Single Comb White Orpingtons exclusively. Eggs, $1.50 and $2.00 per 15; $8.00 per 100. Gilbert W. Schnably, McKeesport, Pa.

Kellerstrass Strain White Orpingtons. Eggs, $1.50 per 15; $7.00 per 100. Ed Leclere, Central City, Iowa.

Crystal White Orpingtons, scoring to 95½. Thos. Brogden, Rush Lake, Wis.

Partridge Rocks

Partridge Rock eggs at $2.00 per 15; order direct from this ad or write for description of our stock. Ellis Poultry Farm, Charlotte, Mich.

Plymouth Rocks—Barred

Brooks Pedigreed Barred Plymouth Rocks are today leading their class in both the International Egg-Laying Contest now being held in Missouri and Connecticut. Why? Because they have been trap-nested for several generations solely to increase their egg production and they are showing the development of this quality. High grade pedigreed cockerels for sale from $10.00 up. Eggs for hatching in season. Satisfaction guaranteed. Brooks Sanitary Hennery, Morgan Park, Illinois.

Pilgrim Strain Barred Rocks are great layers and prize winners. This means profit and pleasure. Chicks, eggs and stock sold. Catalogue shows photo of prize winners. Every customer mentioning The Fruit-Grower gets free two eggs from prize winners. Rhodaround Farm, Fairfield, Conn.

Barred Rocks, bred to lay and do lay. Healthy, vigorous stock. No cull matings. Every bird a producer. Eggs for hatching 15, $1.00; 50, $3.00; 100, $5.50. Hens and Pullets $1.50 to $2.00 each. The Fowlers, Box 264, Youngstown, Ohio.

150 Barred Rock cockerels. Bred from best stock. Big, rangy fellows, that will do you good. Mammoth Bronze turkeys, Giant Jumbo King strain, some fine ones. Italian bees and queens; great workers. Write C. Henry Clymer, Bertram, Iowa.

Barred Plymouth Rocks. Eggs, yard A, $4 per 15; yard B, $2.50 per 15. White Mammoth Turkeys, largest in country, weighing 51 lbs., eggs 25c each. Write for stock prices. Geo. W. Wingo & Son, Route 9, Mayfield, Ky.

Barred Rocks—Latham's pullet line—prize winners in three states, 52 eggs prepaid to you $5.00, 100 eggs $7.50. Satisfaction guaranteed. Oscar Smith, Plainfield, Iowa.

For Sale—Standard bred Barred Rocks. Thompson and Bradley strain. Show birds or breeders. write me your wants. G. M. King, Route 1, York, Pa.

Barred Rocks, 1st cock, 1st cockerel, 3d hen at two leading shows, 1912. Shipments subject to approval. Special mating. Eggs, 15, $2.00; 30, $3.00. Cockerels, $2.00. Standard Bred Poultry Farm, Pimento, Ind.

"Ringlets," Ringleys "Ringlets." Rocks that lay and win. Narrow bars long, deep bodies, yellow legs. Cockerels for breeders. Satisfaction guaranteed. Order Eggs. Harry Welch, Rt. 49, Schenectady, N. Y.

Thompson's Imperial Ringlets, Barred Rocks exclusively. Heavy winter layers; eggs furnished January and February, $2 per 15. Young and old stock for sale. W. F. Wright, Sr., Spirit Lake, Iowa.

If you want the best Barred Rocks you ever saw, buy of me; they are bred right and are winners. Stock always for sale. Eggs, 15, $3.00; 30, $5.00; 100, $10.00. R. H. Vanderhoof, Newton, Ill.

Ostrich Plume Barred Rocks, best blood lines of the world, show record unexcelled. Cockerel and pullet mating eggs, $3 for 15; $5 for 30. Mating list free. J. A. Ayers, La Plata, Mo.

Barred Plymouth Rock Eggs, 15, $1.00; $5.00 per 100. Our customers are not disappointed when chicks are grown. 16 years breeding. Catalogue free. S. V. Latcham, Woodward, Iowa.

Ringlet Barred Rocks. Won silver cup for best Barred Rocks, Championship medal for best hen; all breeds competing. Eggs, $1.00 and $2.00 per 15. H. S. Brendle, Robesonia, Pa.

Barred Rock Eggs for hatching from choice high scoring stock. Deep clear barring. Large and vigorous. $1.00 per 15; $2.50 per 45; $5.00 per 100. M. D. Porter, Vandalia, Mo.

Challenge Laying Strain of Barred Rocks and White Leghorns. They lay the year round. Breeders for sale. Valuable circular free. Mrs. E. M. Hart, Route 32, Irondequoit, N. Y.

Ringlet Barred Plymouth Rocks, hatching eggs (both matings). Day-old chicks. Mating list free; infertile eggs replaced. A. W. Kopfstein, 1068 E. 79 St., Cleveland, Ohio.

Barred Rock Eggs for hatching from pens containing choice show and breeding birds. Cockerels or pullet matings. $3.00 for 15 eggs. Henry Ames, Russell, Ill.

Barred Rocks, Bradley strain. Prize winners. Cockerels, $1 to $5. 15 eggs $1.50, 100 $3.50. Crystal White Orpingtons, Duroc Jerseys. F. F. Wood, Wamego, Kan.

Blue Ribbon Barred Rocks. Cockerels for sale; big fellows; no better laying strain. Eggs from prize winners, $2.00 per 16. Sunny Slope Nursery, Hannibal, Missouri.

Plymouth Rocks, Barred. Bred to lay, Parks strain direct. Eggs, $1.50 for 15, $7.00 per 100. Cockerels for sale now. Mrs. Fred Moore, Altoona, Kan.

Page's Barred Rocks noted for utility and prize winners, best pens $10.00. Farmers pens, 30 eggs, $2.50. Mating list ready. S. H. Page, Waverly, Iowa.

Barred Plymouth Rocks. Thompson's cockerel mating and Wales pullet mating, distinct. Stock for sale. Eggs, $2.00 per 15. W. P. Ruark, Kramer, Ind.

Twenty-five Barred Rock cockerels go at $2.50 each. Large fellows; shipped on approval. I won Iowa state cup year 1910. W. E. Cowan, Waterloo, Iowa.

Choice Barred Rock Cockerels, $1.50 to $2.00 each; eggs, $1.00 per 15 or $5.00 per 100; farm raised. Bred to lay. Dradie Dunbar, Columbus, Kansas.

Barred Plymouth Rocks, five pens mated; eggs, $2.00, 15; $8.00, 100; 25 cockerels and a few females for sale. H. Loutzenhiser, Route 2, Danville, Ill.

Barred Plymouth Rocks. Buy of me, get the benefit of my years experience in the breeding and judging of them. W. S. Russell, Ottumwa, Iowa.

Barred Plymouth Rock cockerels, $2. Pullets and hens, $1. Prize-winning and good laying strain. Eggs, setting $2. Geo. L. Spitze, Warsaw, Ill.

Barred Plymouth Rocks—Eggs for sale. Are you looking for bred-to-lay Rocks? Write at once for mating list. H. A. Caldwell, Canton, Ill.

Ringlet Barred Rock eggs, bred from E. B. Thompsons direct; 13, $1; 26, $1.75; 50, $3; 100 lots, $5. E. H. Barden, North East, Pa.

Barred Rocks of Quality, Jersey cattle. Winners at pail and show ring. Stock for sale. Jno. F. Brune, Box F, Concordia, Mo.

Plymouth Rocks—Columbians

Allen's Columbian Rocks. World's champions. Empire strain. Clean sweep at Madison Square Garden; winners at Philadelphia, Boston, Buffalo, New York. Mating list out. S. C. Allen, Mgr. Valley View Farms, Orchard Park, N. Y.

Columbian Plymouth Rocks, best of layers, large size and good color. Eggs $3 per 15, $5 per 30. George Pinta, Ft. Atkinson, Wis.

Plymouth Rocks—Buff

Buff Rocks Eighteen years exclusively. More prizes, six consecutive years, New York State Fair, than all competitors. Stock for sale. Eggs prize mating. Three dollars. Edgewood Farm, Ballston Lake, N. Y.

Buff Rocks—Progeny of "Poley's World's Best." Bred for utility as well as fancy. Unequaled winter layers. Eggs, $1.50 and $2.00 a setting. Satisfaction guaranteed. M. H. Davidson, Fishkill-on-Hudson, N.Y.

Buff Rocks. Salyards Celebrated. Winner Kansas City, St. Louis, Des Moines. Bargains in hens. Eggs for hatching, very choice matings. Catalog. R. S. Salyards, Iowa Vice-Pres, Box M, Lamoni, Iowa.

Eggs from prize winning Buff Rocks, $2.00 the 15; 1st cockerel, 1st, 2d, 3d, 4th pullet, Jeffersonville. 1st cockerel, 2d pullet, 1st pen, Piqua, Ohio shows. The Buff Rock Poultry Farm, Jeffersonville, Ohio.

Buff Rocks, good color and shape. Farm raised; vigorous. Stock at reasonable prices. Eggs from select matings, $2.00 per 15. C. D. Powell, Vermilion, Ohio.

Buff Rocks exclusively. 50 selected cockerels, $2.00 to $3.00 each. Stamp for descriptive colored calendar. Branch Valley Poultry Yards, Route 2, Telford, Pa.

Buff Rocks, Eggs and Chicks. Best results at reasonable prices. Safe delivery guaranteed. Send for mating list. E. A. Meyers, Route 9, Mt. Sterling, Ill.

North's Buff Rocks, winners at Buffalo, Rochester and Waverly. Stock for sale. Eggs, $1.50 and $3.00. Write for circular. D. P. North, Waverly, N. Y.

Notice—They win the blue. Just a card and let me tell you how I mated my winter laying Buff Rocks. Write today. N. E. Swedburg, Hildreth, Neb.

Buff Plymouth Rock Eggs for sale. The kind that will pay you because they pay me. Prices friendly. Write me. William A. Hess, Humboldt, Kan.

Buff Rock Eggs for sale, from vigorous, heavy laying strain. 75 cents per setting or $3.50 per 100. Future orders taken. Frank Ware, Butler, Ill.

Golden Buff Plymouth Rocks. Fifteen years a breeder Northern grown and farmed raised. Circular free. L. B. Hanna, Austin, Minn.

Plymouth Rocks—White

High class White Rocks. Fishel strain. Direct. Eggs from wonderful layers. $1.00 per 15; $3.00 per 50; $5.00 per 100; $9.50, 200. Also Fishel White Indian Runner Duck eggs. Henry Heitkamp, New Bremen, Ohio.

White Plymouth Rocks—Won 23 blue ribbons the past season. 300 birds for sale, $1.50 up. My April pullets laid in September. Special discount on egg and baby chicks for early orders. Write H. H. Haskin, Box Y, Robinson, Ill.

U Want a White Plymouth Rock. Blue ribbon winners at St. Louis, Mo. State Fair, etc. To introduce same will sell one setting from selected matings at $2.00. Catalog free. Otto M. Roth, Box C, Kirkwood, Missouri.

White Rocks (Fishel), pens, trios, pairs; cockerels, three to fifteen dollars. Pullets 1st and 2nd; cockerel 1st. Binghamton Exposition. Eggs, $3.00 setting. Dr. J. H. Martin, Binghamton, N. Y.

High Class White Rocks, Fishel strain. 15 eggs, $1.00; 100 eggs, $5.00. Also pure White Indian Runner Ducks, eggs for sale in season. George Lehmkuhl, Box 33, New Bremen, Ohio.

White Rocks; eggs, $2.50 per 15. Choice cockerels, $2.50 to $5.00. Every bird bred from Rochester, Buffalo, Boston, Chicago winners. Roseland Poultry Yards, Branchport, N. Y.

White Plymouth Rocks. Try our eggs, $1.00 and $2.00 per 15. They will please. Breeders and young stock for sale. Rose Lawn Poultry Yards, 238 East Main St., Middletown, N. Y.

Wilson's White Plymouth Rocks, winning at Minneapolis again, demonstrated their quality. Start right. Book now. $1.50 per 15. $6.00 per 100. Wheatland Farm, Owatonna, Minn.

White Plymouth Rocks. Eggs at $1.50 per 15; $6.00 per hundred. Young and old stock scoring 90 to 94 at $2.00 and $5.00 each. Benj. Overbeck, Box F, Edwardsville, Ill.

White Rocks exclusively (Fishel). Fine layers. Eggs from snow white, choice matings, $2.00 per 30; $3.00 per 50. Satisfaction guaranteed. W. H. Dougherty, Sellersburg, Ind.

White Plymouth Rocks of highest quality. Eggs and stock for sale, at reasonable prices. Orders booked for spring delivery. Mrs. O. V. Sherpy, Northfield, Minnesota.

White Plymouth Rock Eggs for hatching, from large, heavy laying, pure white hens; pens headed by Fishel cockerels. $2.00 per 15. J. LeFevre, Valhalla, N. Y.

Halbach White Plymouth Rocks. Eggs for hatching from winners at State Poultry Show, St. Joseph, Mo.; $2.00 per 15. Robt. G. Knipple, South St. Joseph, Mo.

The L. A. Doolittle White Plymouth Rocks. Before you buy, write for prices on baby chicks and eggs for setting. L. A. Doolittle, Route 2, Waukegan, Ill.

White Plymouth Rocks. Fine large birds, good shape, color and head points. Eggs, $1.50; $1.00 per 15. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

White Rock Hatching Eggs $1.50 per 15, $2.50 per 30. Also cockerels, strong, vigorous, free range stock. Fishel strain. C. Falkenberg, Route 4, Rogers, Ark.

White Rocks; males, $3.00, two $5.00; females, $2.00, six $10.00. White Holland Turkeys. D. E. Gray, Specialist, Route 5, Groveland Sta., N. Y.

White Plymouth Rock Eggs, $2.00 for 15, from pen which took all prizes in class at Windom and Madelia shows. Will Curtis, St. James, Minn.

Pure Bred White Plymouth Rock eggs, $1.00 per 15; $3.50 per 100. Baby chicks, $10.00 per 100. Miss Louie B. Galt, Appleton City, Mo.

Polish—Black

White-Crested Black Polish. Z. T. Turner, Eleroy, Ill., breeders of World's Fair White-Crested Black Polish. No better strain. Catalogue tree. Five other exhibition breeds.

White Crested Black Polish, Snowball strain. Handsome mating list free. Booking orders now. Snowball Poultry Yards, 908 Rivermeet Ave., Ft. Wayne, Ind.

Rhode Island Reds

Your Chance. Single Comb Reds bred to lay and win for years. Hens, pullets with fine color and type mated with exhibition males, kept tor reserve. $1.00 per 15 eggs. Four best exhibition matings, $5.00 per 15. Cockerels for sale. Rev. F. Schoeubohm, Denver, Iowa.

Rose Comb Rhode Island Reds. American Beauty strain. My birds have made great gains in show rooms this season. If you want large deep colored birds with extra laying qualities, send for mating list now ready. Eggs, $1.00 to $7.50 per 15. A. V. Davis, Ridgefield, Conn.

Eggs from tirst pen Single Comb Reds, headed by Red King, score 94 3-4, $2. Good laying strain, $1. Single Comb Buff Leghorns, winners wherever shown, $1.50, and Buff Orpingtons, prize winning strain, $1.50 for 15. G. H. McElwain, Bowling Green, Ky.

Rose Comb R. I. Reds, grand color, shape and size. All scored stock. Two choice pens headed by Kansas State Poultry Show winners. Eggs, $1.00 to $3.00 per 15; pure bred farm range, every bird choice, $4.50 per 100. Mrs. Clyde Myers, Fredonia, Kan.

Rose-Comb Rhode Island Reds. Fine utility cockerels, $1.50, $2.50. Parent stock direct from Cornish. Fine layers. White Holland turkey cockerels, $5, from first prize stock. Chicago and Indianapolis. Mrs. Geo. Shepard, Goodland, Ind.

S. C. Rhode Island Reds, ours lay in winter. Tomkins strain, 27 prizes on 30 entries. Trenton, Mt. Holly, Red Bank. Farm raised, great size, type, color. Eggs that hatch $2.00 per 15. Reneville Poultry Yards, Box 3941, Keyport, N. J.

R. C. R. I. Reds. Now booking orders for eggs. from choicest mating, $5.00 per 15. From very select mating, $3.00 per 15. From utility stock, $1.50 per 15; $6.00 per 100. D. E. Hall, life member A. P. C., Route 2, California, Mo.

S. C. R. I. Reds, eggs, farm range, choice laying strain $1.00 per 15, $5.00 per 100; pen No. 1, prize winners, $3.00 per 15. Special mating pen, $2.00 per 15. Indian Runner Ducks, eggs, $1.00 per 12. W. C. Farley, Emington, Ill.

Sprague's Reds, Rose Comb exclusively. The best money and experience can produce. Eggs for hatching, one-third what others charge for same quality. Circular free. Poultry Sprague, Maywood (near) Chicago, Illinois.

You will need the new Rhode Island Red Journal, devoted to the Reds exclusively. Contains a wealth of practical hints about poultry raising on the farm. Send 25c for one year's subscription. Red Journal, Readlyn, Iowa.

Rose-Comb Rhode Island Reds exclusively. Eggs from high-scoring and bred-to-lay stock (Tuttle strain) $1.50 for 15 eggs, $2.50 for 30. Orders booked now for later shipment. A. D. Krebill, Donnellson, Iowa.

I have for sale a nice lot of Single-Comb Rhode Island Red cockerels. Remarkably free from shafting and entirely free from white in wings or tail. Price $1.50 to $2.50. Wm. F. Hoppe, Waddams Grove, Ill.

Deep Red Rose Comb Reds. Red to the skin. Grand shape and size. Pens headed by state show winners, $1 to $3 per 15. Choice yard eggs, $4.50 per 100. Free circular. Mrs. Clyde Myers, Fredonia, Kansas.

America's Heaviest Laying Reds. Large, vigorous, pedigreed breeders. Records from 200 to 284, in single, and 291 in rose-comb. Extras to cover infertility. Charles Sweet, Route 4, Swanton, Maryland.

Costs only a postal to learn about Quality Red Eggs at a low price. The Reds that lay eggs and grow big enough to eat. Rose Comb Rhode Island Reds. Art W. Verbeckmoes, Fancier, Atkinson, Ill.

Bailey's Single Comb Rhode Island Reds (Tompkins-Seaman strain). From Madison Square and Boston winners. Eggs, $3, $2, $1 for 15. Circular free. B. M. Bailey, 51 Maple Ave., Napanoch, N. Y.

R. C. R. I. Reds—Some of the best in the west. At the Missouri State Show at St. Joseph on ten entries won four firsts, three seconds, one third, two fourths. Mrs. W. S. Hamilton, Clarksdale, Mo.

Single-Comb Rhode Islands. Eggs, $2.00 and $3.00 per 15. From beautiful stock. Sale Cocks and Cockerels. H. V. Reynolds, Manager. Peerless Yards, 2186 East 43rd street, Cleveland, Ohio.

Thoroughbred Rose and Single-Comb Rhode Island Red cockerels and pullets. Bred from 93 to 94 point males, and hens trap-nested for superior egg production. D. J. Bliss, Carthage, Mo.

Our 200-egg strain Rose Comb Reds, brilliant red color, no slate or white. Good comb and wing, long bodies, blood red eyes. Win wherever shown. John Mierley, Ottumwa, Iowa.

Reds, both combs, yards headed by Owen Farms males, females from winners at Missouri State, Kansas City, St. Joseph, Omaha. Mating list. John Skillman, Platte City, Mo.

Watson's celebrated strain. Rose-Comb Reds. Golden Princess laid 291 eggs in year; 50 hens averaged 240 in year. Cockerels and eggs. Book free. Ira Watson, Box C, Fredonia, N. Y.

Rose Comb Reds—Kaufman and Windheim strains. Write for matings and winnings. Satisfactory hatch guaranteed. Eggs, $1.50 and $3.00 per 15. Forrest Roberts, Salem, Mich.

Rose Comb R. I. Reds. Eggs from high scoring birds, two dollars per setting. Fawn and White Indian Runner Ducks, white eggs, dime each. J. A. Allesshouse, Trenton, Mo.

Rose Comb Rhode Island Reds. Good breeding cockerels, two to five dollars. Eggs for hatching, one to five dollars. Winning stock. Catalog free. Orr & Dick, Arcadia, Ind.

Single Comb Rhode Island Reds. (Tompkins). Large fine reds. Eggs for sale from grand exhibition or utility pens, $1.00 to $3.00 per 15. C. O. Yost, Route 4, Winchester, Ind.

Rose Comb Reds bred for exhibition and utility. Winners head best pens. Eggs and baby chicks a specialty. Also White Leghorns. Franklin Fox, Pipersville, Pa.

Rose Comb Rhode Island Reds. My hens are bred to lay. Good size and color. Eggs at reasonable prices. Dr. M. B. Reed, Cromwell, Iowa.

S. C. R. I. Reds. My first prize cock bird has never been beaten. Eggs, $1.00, $3.00 and $5.00. Frank S. Culp, Box 99, Butler, Ohio.

Rose and Single-Comb Reds—Real Reds, not Buffs. Old and young stock, with score cards, at $1.50 up. Pekin ducks, stock and eggs. Fred Oertel, Box 111, Brighton, Ill.

Hall's Single-Comb Rhode Island Reds are the "stay red" kind. They took Michigan by storm in 1910. None better. Bargains in stock. B. F. Hall, Jr., Lansing, Michigan.

Single Comb Rhode Island Reds. If you want more show birds and better layers, introduce our strain. Send for circular. Forecastle Farm, Burnt Hills, N. Y.

Single and Rose-Comb Reds and Barred Plymouth Rocks. Pullets and cockerels for sale. Eggs, $3-15. Prices and quality right. Crosby Bros., Monence, Ill.

Eggs from high scoring S. C. R. I. Reds, score 92 to 94½ by Judge Tood. Eggs, $3.00 per 15. Satisfactory hatch guaranteed. H. M. Lange, Grafton, Iowa.

Single Comb Rhode Island Reds. Best high bred utility stock from world's leading strains. Eggs only, per setting, $1.50 to $2.00. Burt Roberts, Milan, Mo.

Michigan Royal Red strain Single Comb Reds that are red. Ninth year. Heavy winter layers. 15 eggs, $1.50 and $3.00. C. W. Southworth, Dowaglac, Mich.

Rhode Island Reds, both combs. (Sibley strain), large size, red to the skin. Good shape, good layers. Write for mating list. Riddle & Sons, Le Roy, Ill.

Webb's Single Comb Reds. Ten years experience. Layers and winners of state cup, etc. Free circular will explain. E. M. Webb & Son, Waukesha, Wis.

R. C. R. I. Reds. Shape and color specials, won wherever shown. Bred to lay. Eggs $1.00 to $5.00 for 15. Edgedale Poultry Plant, Wheeling, W. Va.

Thoroughbred Rose-Comb Rhode Island Reds. Good laying strain. Eggs from scored pen, 15 for $3; utility, $1.75. C. C. Mason, Route 8, St. Joseph, Mo.

Custer's Single Comb Reds won 23 prizes on 29 entries at four different shows this winter. Settings, $1.00, $2.00 and $3.00. Oliver Custer, Xenia, Ohio.

Reds, both combs. You can pay more, but you get no better blood. Circular for chicks and eggs. J. C. Hamilton, Route 2, Box 110, New Castle, Pa.

Single-Comb Rhode Island Reds. Some well bred birds, at right prices. Cockerels or pullets. Eggs in season, $2. T. F. Higley, Fairfield, Iowa.

R. C. Rhode Island Reds, prize winners for 6 years. Egg orders filled promptly. Send for mating list and prices. H. G. Poehling, LaCrosse, Wis.

R. C. Reds, high in quality. Write for prices on stock and for mating list. Guarantee satistaction. W. J. Cocklin & Son, Rising City, Neb.

Get the best—Dark Red Rose Comb Reds—winners of 50 premiums, eggs $2.00 and $3.00 per 15; infertiles replaced. O. T. Grimes, Hunter, Okla.

"The season is on—let me supply you with high scoring Red eggs at $3.00 per setting. Write for matings." B. C. Knodle, DeKalb, Ill.

Single Comb Rhode Island Reds—Eggs for hatching from choice matings. $1.50 per 15; $2.50 per 30. O. W. Graves, Goreville, Illinois.

Spanish—Black

White-Face Black Spanish—Eggs 15 for $1.50, 30 for $2 50, 100 for $5. Good stock for sale. Louella E. Jaqua, Portland, Indiana.

Wyandottes

Black and White Wyandottes—Stock and eggs for sale. Black Wyandottes won first and second Hen and Grand Champion Male at Springfield, Ill., state show. Eggs $3 per 15. G. D. Duncan, Alton, Ills.

500 White, Golden and Columbian Wyandottes for sale. Splendid breeding and show birds. Eggs for hatching from selected stock. Mrs. D. C. Jones, Nashotah, Wis.

Wyandottes—Buff

Best for tarmer or tancier. Eggs from prize winning, special winter laying beauties, $2.00 per 15; $10.00 per 100. L. D. Van Rensselaer, Kent, Ohio.

Wyandottes—Golden

Golden Wyandotte breeder, 12 years. Have two large range pens. Good laced blocky birds. Eggs, $2.00, 30; $3.00, 60. Gerhard F. Hellman, West Point, Iowa.

Wyandottes—Partridge

Partridge Wyandottes with a national reputation won most all prizes Kansas State Show two years. I have the right color, shape and size, so they cannot help but win. A dandy flock in a five acre orchard. Eggs, $1.50 for 15; $2.50 for 30. C. A. Page, Salina, Kan.

Elm Grove Poultry Farm. Mahogany strain Partridge Wyandottes. Matings scoring to 94½. Satisfaction guaranteed. Eggs, $3.00 per 15. F. E. Carpenter, Cedar, Iowa.

Wyandottes—Silver Laced

Silver Wyandottes. Winners at all the big shows. Philadelphia, Madison Square Garden, New York. Most prizes special for best display. If you need real winning Silvers, write immediately. All will be satisfied. Eggs while they last. Dr. Henry M. Kalvin, Avenue U. and East 15th St., Brooklyn, N. Y.

Silver Wyandottes; won tirst cockerel first pen; first, second, third pullets at Woodhull; birds scoring 94, 15 eggs, $2.00, $3.00; 30, $3.50, $4.50; 50, $5.00, $6.00. Jas. Roberts, New Windsor, Ill.

Silver Wyandottes—The great egg and table fowl; the breed for fruit growers. Cocks and cockerels, $2 up. Eggs by the sitting or hundred. Circular. Glenoak Poultry Yards, Kinmundy, Ill.

Silver Wyandottes of quality. Prize winners. Best winter layers. Good stock for sale, reasonable. Satisfaction guaranteed. Also some Japanese Silkies. J. F. Spence, Clinton, Iowa.

Silver Wyandottes exclusively for 28 years. Your success depends on your foundation stock. Compare prices and show winnings, then act. M. H. Leidy, R. F. D. 2, Souderton, Pa.

Silver Laced Wyandottes, Barred Rocks—Eggs 15 for $1. 50 for $3, 100 for $5. Rouen and Muscovy duck eggs 13 for $1. Fred Kucera, Clarkson, Nebr.

Fifty lusty Silver Wyandotte breeding cockerels, from noted winners, $2 each; just the birds to add vigor to your flock. Hoffman, Allegan, Michigan.

Wyandottes—White

White Wyandottes. Eggs from show winners exclusively, which several scored to 96; never defeated, won 53 premiums, 3 shows, 19 1st and 2d. Eggs, $1.00 and $2.00 per 15. Write for photos in mating list. You'll buy sure if you do. J. H. Willis, Jeweler, Norris City, Illinois.

At recent Utica, N. Y. show in hot competition with 110 White Wyandottes, seven out of nine birds I exhibited won. Will give better value than anyone. Try me. Send for mating list. Stock for sale. A. H. White, Glenwood Ave., Syracuse, N. Y.

Pentield's Prize-taking White Wyandottes. Big winners at such shows as Minneapolis and state fairs. Lay in the coldest weather. Eggs for hatching from free range. Standard bred stock. Write us. H. J. Penfield, Box A 324, Hudson, Wis.

White Wyandottes. Prize winners at the great Williamsport show. Nothing nicer than a flock of pure white birds. Plump, quick maturing, and great layers. Eggs, $1.50 per 15. Write me your wants. Jno J. Hafner, Box J, Woolrich, Pa.

White Wyandotte cockerels for sale. The typical Wyandotte sort, broad, deep body, short, stout shanks, 9 to 10 pounds each. Winners in shows this year. Only a few left. Price reasonable. Hiram Long, Edgerton, Ohio.

White Wyandottes, Dustons. Line bred for 10 years, fit to win anywhere. Heavy layers. Buff Cochin Bantams. Solid buff, correct shape and size. Eggs, $3.00 per 15. Edwin A. Bennett, 103 Remsen St., Astoria, L. I., N. Y.

Excelsior White Wyandottes won ten ribbons Grand Rapids 1911 show, four at Holland, December, 1911. Winners whenever shown. Good cockerels. Eggs for hatching. John M. Hoogerhyde, Bates St., Grand Rapids, Mich.

Stay White Wyandottes that carry blood of 200 to 272 egg ancestry, tine combs, yellow legs, red eyes and lobes; eggs, 15, $1.50; 30, $2.50; 50, $3.75; 100, $6.00. Satisfaction guaranteed. Calvin Norman, Route 2 F, Dexter, Mo.

White Wyandottes. Fine line-bred Dustin stock. Winners St. Louis, Portland, Muncie. Fifteen eggs, $2.00; thirty, $3.50. Utility, fifteen, $1.00; hundred, $5.00; circular free. Herbert Smith, R. F. D., Bluffton, Ind.

White Wyandottes—the most profitable and beautiful. Best winter layers, quickest growers, best sellers. Can furnish show stock; grand breeders. Baby chicks or eggs $1.25 to $3. Schmied Bros., Rt. 2, Mt. Healthy, Ohio.

White Wyandottes. For winter layers and quality there are none better. Write us if you want stock. Eggs or day old chicks. Absolute satisfaction guaranteed. Cederdahl Poultry Farm, Owatonna, Minn.

White Wyandottes. Eggs and choice stock. 1909 to 1912 at Kansas state poultry show. Won 18 prizes. Eggs, $4.00 per 100. Send for show record and prices. Theo. B. Young, Route 1, Box 86, Wichita, Kan.

Peterson's Superb White Wyandottes. Great silver cup winners, fine layers. Winners Chicago, St. Louis, Galesburg and other shows. Send for catalogue. Wm. A. Peterson, Box F, G., Galesburg, Ill.

White Wyandottes that win the blue. Missouri and Illinois winners. Alton pullet, scored 96. Staunton pullet, scored 96½. Exhibition eggs, $3.00; Utility, $1.50. B. Pavey, Bunker Hill, Ill.

White Wyandottes. Cup winners and great egg producers. Nine firsts at two shows. Line bred for 12 years. Mating list free. Alden Rehm, Orrville, Ohio.

Right now, we have some special bargains of a few show room specimens in White Wyandottes. If interested write us. All orders on approval. Wyandotte Ranch, Kiesling, Wash.

White Wyandottes, Superb strain. Winners at Altoona and Greenburg, Pa. Large, pure white, heavy laying birds. Send for mating list. James A. Bender, Box C, Coalport, Pa.

Rowland's Invincible White and Columbian Wyandottes are royal winners. Stock and eggs for sale. A satisfied customer or money refunded. Frank Rowland, New London, Ohio.

White Wyandottes that win. Won at Delevan and Waterford, Wis. A few cockerels for sale at prices that are right. Egg orders taken now, $3. H. C. Berger, Waterford, Wis.

White Wyandottes—Eggs trom farm raised birds scoring 93 to 95; some cut three-fourths for color. $3 per 15, $5 per 30. Guarantced fertile. Mrs. S. A. Jones, Weldon, Ills.

White Wyandottes that have won at all the leading shows and will win for you. Eggs from prize winning matings, $3.00 and $5.00 per 15. R. S. La Rue, Bellfontain, Ohio.

Thoroughbred White Wyandotte Eggs, $1.50 and $3.00 per setting 15. Baby chicks. Show and heavy egg type combined. A square deal. Robert Fetrow, Etters, Pennsylvania.

White Wyandottes, prolific laying strain. Tested eggs from vigorous stock will secure good hatch, $1.50 per 13, $8.00 per 100. Wm. F. Schaffner, Lansdowne, Pennsylvania.

White Wyandottes. Been breeding them continuously since 1895. The kind that weighs, lays and pays. Send for circular. A. Franklin Smith, Route 9, Ann Arbor, Mich.

Snow-White Wyandottes exclusively. Farm range, splendid stock. Satisfaction guaranteed. Eggs, $1 per 15, $4 per 100. Mrs. Christian Oveson, Osage City, Kansas.

White Wyandottes—Choice cockerels from blue-ribbon winners; they will please you. Eggs from choice matings after February 1st. Harley R. Stick, Ridgeville, Ind.

Utility White Wyandottes, laying during zero weather. Won 1st hen, 2nd cockerel, 2nd pullet, 2nd pen. A. W. Gluesenkamp & Son, Box 58, Batesville, Ind.

White Wyandottes, prizo winners, heavy laying strain. Special mated pens. Eggs, $2 00 for 15. White Cochin Bantams. I. A. LeMaster, Bushnell, Ill.

Imperial strain White Wyandottes from prize winners. Cockerels, $1 to $3; cocks and pullets, $1; eggs, 100 $5, 15 $1. A. H. Seymour, Swanton, Neb.

White Wyandotte show birds for sale. Price reasonable. Ask for my show record and mating list. Otto Peterson, Jr., Rt. 7, Axtell, Neb.

White Wyandottes. Choice, eggs $3 to $5 per 15. Thomas G. Ashmead, Willlamson, N. Y.

All Breeds

90 Varieties Poultry, Eggs, Pigeons, Dogs, Hares, Parrots, etc. List free. Colored descriptive 60-page book, 10c. J. A. Bergey, Box 60, Teltord, Pa.

Miscellaneous Poultry

World's Best Rhode Island Reds and Imported White Indian Runner Ducks. My 1st championship pen of Reds this season is headed by 2nd Madison Square, New York, cock, and contains 1st Madison Square pullet, December, 1910, valued at $10,000.00; also 1st, 2nd, 3rd, 4th and 5th Madison Square pullets, January, 1910. The greatest pen of "Reds" ever put together. Write for free catalog. Southern Poultry Farm, Wade Hampton, Prop., Rogersville, Tenn.

Eggs from Turkeys, Toulouse and White Embden Geese. Rouen, Pekin, Muscovay and Runner Ducks. Rhode Island Reds. White and Brown Leghorns. Spangled Hamburgs. Barred, White and Buff Plymouth Rocks. Black Langshans, Wyandottes, Houdans. Pearl and White Guineas. Bantams. Rabbits, fancy Pigeons. Write for circular. D. L. Bruen, Platte Center, Neb.

Empire Poultry Yards, Fort Plain, N. Y., breeds Single Comb White, Brown and Buff Leghorns; also Houdans, Rumpless fowls, Indian Runner Ducks, Pearl Guineas, Buff Cochins, Light Brahmas. In Bantams, Black, Reds, Red Pyle, Buff Cochins and Golden Sebrights. Winners, famous for shape, color and egg production. Eggs, $2.00 setting. Mention Fruit-Grower.

Poultry Photo Post Card, mating list and catalogue free. Stamp appreciated. Eggs for hatching from "Trio Purpose" White Wyandottes, best for show room, egg basket and market. Mammoth "Rainbow" Bronze Turkeys. "Standard" Indian Runner Ducks. Joseph Shaw, Desk B, Ostrander, Minn.

Eggs for hatching from high scoring prize winners. Barred and White Rocks, Buff, Brown and White Leghorns, White and Silver Laced Wyandottes, Black Minorcas, White and Buff Orpingtons, S. C. Rhode Island Reds. Write for prices. Lebanon Poultry Yards, Lebanon, Neb.

Ten cents each for all eggs; 50 per cent hatch guaranteed. White Wyandottes, White Plymouth Rocks, Single-Comb White Leghorns and Black Orpingtons. Eggs from our Madison Square matings, $5.00 per 13. Conniscliffe Poultry Farm, Lock Box 19, Tenafly, N. J.

Young's Strain Single Comb White Leghorns, Single Comb Rhode Island Reds, Buff Rocks and Duck Wing Games. Bantams, $1.00 and $1.50 per 15 eggs; $5.00 and $7.00 per 100. Bred for eggs and show room. Your satisfaction is our success. E. G. Yocum, Souderton, Pa.

White Wyandottes, Rose Comb Rhode Island Reds, Barred Plymouth Rocks. For type, color and quality I can please you. Blue ribbon winners. Located here 36 years. High scoring pen eggs for hatching, $3 per 15. Satisfaction guaranteed. Wm. Feakes, Grand Junction, Iowa.

S. C. Reds, White Rocks, S. C. White Leghorns, Buff Rocks and Silver Wyandottes. America's leading strain. Hen hatched and reared. Stock, eggs and chicks at right prices. Write your wants before buying elsewhere. Joseph Anthony, Rt. 4, East Berlin, Pa.

Single Comb White Leghorns, Young's and Wyckoff's strains direct. 15 eggs, $1.00; 100, $5.00. Crystal White Orpingtons, Kellerstrass strain; 15 eggs, $2.00; 100, $9.00. White Indian Runner Eggs, 12, $4.00. White Feather Farm, New Bremen, Ohio.

Beaulitul swans, fancy pheasants, peatowl and other ornamental stock. Also partridges, pheasants, quail, deer, rabbits, etc., for stocking purposes. Send 4c for illustrated descriptive circulars. Wenz & Mackensen, Pheasantry & Game Park, Yardley, Pa.

Six Single Comb Breeds. Kellerstrass White Orpingtons, Buff Orpingtons, Rhode Island Reds, Barred Rocks, Partridge Rocks, Black Minorcas. Cockerels, $1 to $3. 15 eggs, 1st pen $1.50; 2d, $1. N. P. Cronk, Montour, Iowa.

Crystal White Orpingtons, Kellerstrass; R. C. White Orpingtons, White Langshans, S. C. White Leghorns, White Wyandottes, Black Minorcas, $1.50 to $2.00 per setting. Silver Spangled Hamburgs, cockerels $3.00. Selma Shanander, Pilot Mound, Iowa.

Mack's Poultry Farm—Breeders of America's best Buff Langshans and Black Orpingtons. Winning all we competed for at the big Toledo show. Eggs, $3.50 for 15. Mack's Poultry Farm, 1817 Navarre Avenue, Toledo, Ohio.

Rose Comb Brown Leghorn, Single Comb Buff Orpington, 15 eggs $1.00; 30, $1.75. Indian Runner Ducks, 13 eggs, $1.00; 26, $1.75. White African Guineas, 15 eggs, $1.25; 30, $2.00. Honey Creek Poultry Farm, Kahoka, Mo.

High Class Black Langshans. Pekin Ducks, Mammoth Bronze Turkeys. Winners, Madison Square Garden. Prices reasonable. Satisfaction guaranteed. Circular. Lorenz & Co., Springvalley Farm, Perryville, Missouri.

Butt Leghorns and Kellerstrass White Orpingtons. Prize winners at Altoona, Williamsport, Du Bois, Greensburg and Ohio State Fair. Eggs from these grand prize winners, $2.00 per 15. R. E. Giles, Coalport, Pa.

Blue Ribbon Winners, Chicago, St. Louis, Indianapolis. Rose-Comb white Leghorns. White Wyandottes; Partridge Wyandottes. Stock for sale. Eggs in season. Max Fries, Rural Route, Warsaw, Indlana.

White and Brown Leghorns, White and Barred Rocks, Rhodo Island Reds, several first prizes. Eggs, 75c, 13; $3.50, 100. Mary Dowell, Granada, Prowers Co., Colo.

Kellerstrass Crystal White Orpingtons. Some prize winners. Also Reds and Minorcas. Standard bred. Eggs, $1.50 to $5 per 15. Life member American Poultry Association. Prof. F. H. Jackson, Middlebury Center, Pa.

Kellerstrass White Orpingtons, Fishel White Plymouth Rocks, that are prize winners and money makers. Eggs, $2.00 per 15; baby chicks, $25.00 per 100. Satisfaction guaranteed. John McKibbin, Goshen, Ind.

Langshans, Reds, Wyandottes, Orpingtons and Leghorns at farmers' prices. Good quality, some prize winners. Young stock for sale. Eggs, $1.00 and $2.00 per 15. Ideal Poultry Farm, Indian Springs, Ind.

Single-Comb Leghorn and Single-Comb Rhode Island Red eggs and chicks trom good stock. Eggs, $5 to $12 per 100. Chicks, $10 to $20 per 100. Satisfaction guaranteed. C. H. Zurburg, Route 1, Topeka, Ill.

Choice eggs tor hatching from 52 varieties of chickens, ducks, geese, turkeys, 130 premiums at one exhibit. Largest poultry farm in northern Iowa. Stamps for catalog. E. & J. W. Trettin, Grafton, Iowa.

Buft Orpingtons, Single Comb White and Brown Leghorns, Rose-Comb Brown Leghorns, White Wyandottes, R. C. Reds. Big layers. Big payers. Write us today. A. Carrol Shaw, Box 603, Las Animas, Colo.

Single and Rose-Comb Black Minorcas. Single and Rose-Comb Reds. Eggs, stock and baby chicks, from Quincy and Campoint, Ill., show winners. South Side Poultry Yards, 601 Jackson St., Quincy, Ill.

White Wyandotte and Pekin Duck eggs, 15, $1.00; 30 or more, 6c each; best 2 pens headed by males we refused $100.00 each, 15, $3.00; 30, $5.00; quailty, not quantity. Mrs. Doom, Ashland, Neb.

Eggs, $1.00 per 15; $2.00 per 40; from thoroughbred Brahmas, Rocks, Wyandottes, Reds, Minorcas, Leghorns, Hamburgs, 19 varieties. Catalog. 29 yeare experience. S. K. Mohr, Coopersburg, Pa.

Rocks, Wyandottes, Leghorns, Hamburgs, Toulouse, Emden, China geese; Pekin, Muscovey ducks; white turkeys, guineas; prize-winning stock. Send for catalogue. B. F. Kahler, Hughesville, Pa.

Seiple Poultry Yard. Eggs for hatching from S. C. White Leghorns, Barred Plymouth Rocks and Rhode Island Reds. $5.00 for a set of 13 eggs; $9.00 for 26 eggs. Monroe Seiple, Bethlehem, Pa.

Kellerstrass White Orpingtons, Buff Orpingtons, Black Minorcas, Columbia Wyandottes, Rhode Island Reds. Choice cockerels for sale. Eggs in season. W. S. Chalker & Sons, Waters, Mich.

Rose Comb Buft Orpingtons, Golden Wyandottes. My famous line bred strains ot winter layers and show winners. Eggs, $3.00 and $5.00. Circular. Dr. R. O. Woodruff, Box A, Waterford, Pa.

Ever Best Strain. Rose and Single Comb Buff, Single Comb Black and White Orplngtons, Black Minorcas, Rhode Island Reds. Eggs for hatching. George W. Ellerman, Box 95, Piqua, Ohio.

50,000 Single-Comb White, Buff and Brown Leghorns, Minorcas, Rocks; baby chicks, eggs; Belgian hares, Collie dogs. Catalogue, stamps. Failing Poultry Farm, La Fargeville, N. Y.

Sixty-Page Catalogue Free. Sixty varieties chickens, ducks, geese, guineas, turkeys and hares. Blue ribbon winners. Stock and eggs for sale. Lowest prices. H. A. Souder, Box 10, Sellersville, Pa.

Single Comb Buff Orpingtons, Buff Leghorns and White Leghorns. Eggs for hatching, $1.00 per setting of 15. Also some good cockerels for sale at $2.00. Henry Y. Shirk, LaPaz, Ind.

Eggs tor hatching. Exhibition pen. B. P. Rocks, $3 per 15. Utility flock $5 per 100. Toulouse geese eggs, 25c each. White guineas, $1 per 15. Mrs. I. B. Geiger, Route 2, Ida Grove, Iowa.

Sixty varieties fancy poultry—geese, ducks, turkeys, chickens, pea fowls, guineas, pheasants, pigeons, ratdogs. New 60-page catalogue, 4 cents. F. J. Damann, Farmington, Minn.

White Rock eggs, $3.00 per 100. Farm range White Holland Turkey eggs, $3.00 for 12. Brown Leghorn eggs (from separate farm), $3.00 per 100. Mrs. Henry Hanman, Browning, Mo.

Eggs, Hatching. Imported White Orpingtons. Exhibition Single Comb Rhode Island Reds. Utility Reds. Fawn and White. Indian Runner Ducks. Write E. L. Andrews, Maryville, Mo.

Sixty White Holland turkeys for sale. Also African and White China geese and Black Cayuga ducks. Wanted, White Orpington pullets. Floyd S. Beaumont, Kansasville, Wis.

Barred Rocks. Buff and Black Orpingtons. The kind that will please anybody. Eggs and stock for sale. Write for convincible catalog. Watertown Poultry Farm, Watertown, Ill.

Silver-Spangled Hamburgs, Partridge Plymouth Rocks, Houdans, Light Brahmas, highest quality, lowest prices. Winners and breeders for sale. Eggs in season. Will Clark, Sullivan, Ohio.

Buft Orpingtons and White Rocks from Indianapolis and Chicago winners. Elegant birds of correct shape and color. F. L. Shaw, Route 1, Hutsonville, Ill. Licensed poultry judge.

Partridge Wyandottes and Mammoth Bronze turkeys. Prize-winning strains. Stock for sale. Reasonable prices. Egg orders booked now. Write Mrs. M. F. Oldfield, Buffalo, Mo.

Thirty breeds, geese, ducks and chickens. Send 3 cents for a large catalogue. Minkel & Co., Mapleton, Minn.

America's best egg producers. Rose-Comb Reds, Runner ducks, Toulouse geese, eggs, chicks and ducklings. Give us a trial. Prices reasonable. Frank Kilpatrick, Warren, Ohio.

Rose Comb Rhode Island Reds, Columbian Wyandottes, winners wherever exhibited; heavy layers. Eggs, $1.00 to $5.00 per 15. Mating list free. A. D. Willems, Minncola, Kan.

Eggs for hatching from line bred trap nested Anconas and S. C. Brown and White Leghorns. Bred for egg production, at reasonable prices. Write to M. L. Miller, Johnston, Pa.

Pure Bred Turkeys, White Embden Geese, Guineas, Plymouth Rocks, Single Comb Brown Leghorns. Prize winners. Eggs for hatching; quality; right prices. John Garbee, Billings, Mo.

White-Crested Black Polish, White Wyandottes, White Orpingtons. Breeding pens of the best. Eggs, $5 to $10 per 15. Stock in season. Edward F. Waldron, Dighton, Mass.

White Leghorns, Rhode Island Reds; best registered Berkshires, Hogs and Pigs, Chickens and Eggs cheap. Write quick. E. A. Rogers, Meadowbrook Farm, Box F, Hixson, Tenn.

Eggs—White Runner ducks, Partridge Rocks, White and Fawn Runner ducks, Single Comb Brown Leghorns. All winning stock. Write J. E. Gault, Chippena Lake, Ohio.

Thoroughbred Barred Rocks, Reds, Pekin, Muscovy, Runner ducks. Homer pigeons, White Guineae. Eggs, $1 up. Stock for sale. Emwood Farm, Route 13, Grand Rapids, Michigan.

Sixty Eggs, $3.00; 15, $1.00; two medicated nest eggs with each order. 26 varieties; poor hatches duplicated at half price. Circular free. Whitney & Son, Triangle, N. Y.

Barred Rocks, Brown Leghorns, Silver Laced Wyandottes and Reds. Eggs from pens, $1.50 for 15. Write for free catalog. Address Sunnyside Poultry Farm, Owensville, Mo.

Golden Wyandottes and Single Comb Buff Orpingtons. Fine winter layers, prize winning stock. Eggs, $1.25 and $2.00 per 15. Circular free. John Tuttle, Princeton, Mo.

White Plymouth Rocks, White Holland turkeys, Buff Orpingtons, Indian Runner Ducks. Ten years breeding and exhibiting. Mating circular free. Verne D. Stock, Stockton, Ill.

Illustrated Catalogue Free. Barred and White Rocks, White Wyandottes. Birds and eggs for sale. Bee keepers and poultry supplies. Large stock. H. S. Durby, St. Anne, Ill.

Trapnested White Wyandottes and Kellerstrass White Orpingtons. 227 egg strain, bred from Chicago and Pittsburg winners. Eggs, $3.00 per 15. K. J. Heabler, Attica, Ohio.

Black, Buff, White Orpingtons. S. C. White Leghorns. Write for prices. Buckel Poultry Yards, West Allis, Wis.

Pearl Guinea Eggs, 25 for $3, 50 for $5, 100 for $10. Valley View Farms, Orchard Park, N. Y., Rural Box 22.

Buff Orpingtons, White Plymouth Rocks. Frank Meek, breeder and exhibitor. Winners in the great Little Rock Show. Eggs, $3.00 and $5.00 per 15. Argenta, Ark.

Stock, eggs, baby chicks. From winners at Springfield, Jacksonville, Pittsfield, Illinois, 1911. Write for circular. Southern Slope Poultry Farm, Box A, Jacksonville, Ill.

Rhode Island Whites, unequaled as layers. Also Rhodo Island Reds, Rose Combs, Poland China hogs. Eggs and stock for sale. W. A. Elam, Mulberry Grove, Ill.

White Crested Black Polish, S. C. Black Minoreas and Buff Wyandottes. Stock for sale. Eggs, $2.00 per 15. Satisfaction guaranteed. Henry Yaggy, Woodburn, Ind.

Buff Orpingtons and Barred Rocks. Winners Missouri State and other large shows. Eggs, $2.50 to $5.00 per 15. Satisfaction guaranteed. J. L. Gallatin, Amsterdam, Mo.

Orpingtons, Single Comb, Buff, Black and White. Cockerels, $2.00 to $5.00. Pens, $10.00 to $15.00. Eggs, $2.50 for 15. Elk Ridge Poultry Yards, Sheller, Illinois.

Eggs, setting or hundred lots. Barred Rock, Buff Orpingtons, Reds, Indian Runner Ducks. Also Pheasant eggs. Stock for sale. Julia E. Wise, New Market, Iowa.

Rhods Island Reds, White Orpingtons (Kellerstrass), Houdans. Winter layers. Stock; eggs for hatching; trios. Write wants. D. S. Brenneman, Council Bluffs, Iowa.

Good bargains in Barred Rock pullets, Buff Orpington and Rhode Island Red cockerels. Indian Runner Ducks and fancy pigeons. Julia E. Wise, New Market, Iowa.

State Fair, Rochester, Buffalo, winners. Columbian Wyandottes. Barred Rocks, Buff Leghorns, Bronze turkeys. Rouen ducks. A. G. Barlow, Box 6, Medina, N. Y.

Infertile eggs rsplaced without cost. Fishel's White Rocks, $1.50 per 15; Wyckoffs S. C. White Leghorns, $1.00 per 15. Arthur Bear, Route 10, York, Pa.

If you want Orpingtons, Reds, Leghorns, Wyandottes, Rocks; males or females; we can save you money. Write us anyway. Lee Harris, College View, Neb.

Black Orpingtons and Pekin ducks, prize winners at the last Indianapolis show. Stock and eggs for sale cheap. C. C. Herron, Hope, Ind., Box G.

Ribbons to burn, winners every show. S. and R. Comb Reds, S. C. White and Black Orpingtons. $2.50 per 15. Dr. W. H. Craft, Coalport, Pa.

Barred Rock, Single Comb Brown Leghorn eggs from fine stock, 15, $1.00; 100, $5.00; 26 years a breeder. Ed. B. Murphy, Box 9, Carmel, Ind.

Rhode Island Whites, S. C. Reds, White Cornish, Rose Comb White Leghorns. The kind that win, lay and pay. C. W. Knox, Pulaski, Pa.

Bargain Prices. All leading varieties land and water fowl. Large picture in colors and price list mailed for 10c. P. G. Shelly, Florin, Pa.

Toulouse Goose Eggs, Runner Ducks, Rose Comb Reds eggs, stock and chicks. Order early. Frank Kilpatrick, Route 4, Warren, Ohio.

Chicks

Baby chicks, 10c to 20c; stock, $1.25 to $5; eggs, $5 per 100 up. Rhode Island Reds, both combs. White and Columbian Wyandottes, White and Buff Orpingtons, Pekin, Rouen and Indian Runner ducks, Toulouse geese, Bourbon Red turkeys. Catalogue free. G. A. Mitchell, Dept. B, Ridott, Ill.

Baby Chicks, standard brsd. S. C. Rhode Island Reds, Buff Orpingtons, White Wyandottes, Barred Rocks; $2.00 dozen; 25 chicks, $3 75; 50 chicks, $7.50; 100 chicks, $15.00. Guarantee safe arrival 2,000 miles. 15 eggs, $1.00; 30 eggs, $1.50; 60 eggs, $3.00; 100 eggs, $5.00. Martin Michelson, 232 Fifth St., Aurora, Ill.

Chicks, 10c; ducklings, 15c; eggs reasonable. Don't delay booking orders. White Leghorns, Parks Barred Rocks, Pekin and Indian Runner ducks. Both light fawn and penciled. White eggs. Circular. Premium Poultry Farm, Box 62, La Harpe, Ill.

Baby chicks, Wyckoff strain. Single-Comb White Leghorns, mated with cockerels direct from Young, $12 100, prepaid. Eggs, $4.00 per 100; baby chicks, $9.00 per 100, prepaid. Prepay on chicks only. Ohio Valley Hatchery, Ramsey, Ind.

Day old and four weeks old chicks from Crystal White and Buff Orpingtons and Barred and White Rocks. Chicks cheaper if ordered early. Free circular. Fred Brown, 764 W. Broadway, Winona, Minn.

Chicks, leading varieties, hatchsd in mammoth coal-heated incubators. 100,000 chicks for 1912 delivery, order now. Arrival guaranteed. Catalog free. Walnut Hill Hatchery, Macon, Mo.

White Plymouth Rock Baby Chicks bred for egg production. Stock guaranteed Fishel strain, $12 per 100. Express paid east of Rockies. Fairview Poultry Farm, Frenchtown, N. J.

100 Baby Chicks, $10.00; 100 eggs, $4.00. Illustrated folder telling all about my 600 heavy laying Single Comb White Leghorns. Ellsworth Shaw, Grand Junction, Mich.

Baby chicks of quality, White Wyandottes, White Rocks and Black Orpingtons from fancy stock. Write for circular. Burnett & Doolittle Hatchery Co., Waukegan, Ill.

Baby chicks, 10c each. Barred Rocks and White Wyandottes. Fawn and white I. R. Duck eggs $1.00 per 12. Orchard Knob Poultry Farm, Mt. Victory, Ohio.

Chicks, 8 to 15c each. The kind that will grow into prize winners for you. Safe arrival guaranteed. Catalogue and price list free. Blum Hatchery, Chatfield, Ohio.

Baby chicks of quality. Safe arrival guaranteed. We prepay expressage. Catalog free; 9 varieties. South Kenton Poultry Farm, Kenton, Ohio.

Ducks and Geese

Carlils's White Indian Runner Ducks, best in the West, as demonstrated at the great Los Angeles Show. I have owned practically all the original stock in America and now have the largest and finest flock on the Coast. Eggs, $5.00 per 15; $12 per 50; $20 per 100. First prize matings, $10 per 12. Satisfaction guaranteed. Book orders now and avoid disappointments. J. C. Carlile, Route 4, Box 249, Los Angeles, Calif.

Blue Swedish Ducks. Largs, profitable, beautiful. Excellent layers. 38 firsts from 41 entries in 1911-12, including Madison Square and Cleveland. Fawn and White Runners. True color, racy type, record layers. Show quality. Runner eggs, $1.50 per setting, $6.00 per hundred. Catalog. Hill Crest Duck Farm, Bellville, Ohio, Box D.

Yoder's Indian Runner Ducks. First and special at Allentown show. My book on Runners 75c, 11 eggs $2.50, 30 eggs $5.00. Yoder's Partridge Rocks and Partridge Wyandottes are prize winners, 15 eggs $2.00, 30 eggs $3.50. Prices and winnings 2 stamps, Box 50, Levi D. Yoder, Dublin, Bucks County, Pa.

Indian Runner Ducks, fawn and white, winners of first and second premiums Tri-County Fair, Sikeston, Mo. No stock for sale. Eggs $2.50 for 13; $4.50 for 26. R. C. Rhode Island Reds. Carefully bred stock. Eggs $1.50 for 15; $2.50 for 30. J. Ed Green, Blodgett, Mo.

Indian Runnsr Ducks. Light Fawn and White. "Blue Ribbon Winners." in every state and territory. Heavy layers of "snow white" eggs. Shipping more than 1,000 every week for hatching. Booking orders. Don't delay. Catalog free. Mrs. Wm. Harshbarger, Waveland, Ind.

Outlay Hens. Indian Runner Ducks. Brooks-Walton white egg strain. Buff Orpington Ducks. Finest obtainable from originator. Drake imported from England. Great layers. White Orpington fowls. Eggs reasonable. Muskoday Farm, Weedsport, N. Y.

Indian Runners, American standard; English Waltons, pure white. Pens mated by expert judge. Stamp brings mating list, judges' testimony. My new booklet "Road to Success." Mrs. D. C. Teasley, Anderson, Ind.

Indian Runner Ducks. Fawn and White. White egg strain. And Single Comb Reds. For size and color they have no superior. Eggs per setting or by hundred. Write for prices. Mrs. Z. T. Biggerstaff, Edgerton, Mo.

Puro White Egg Strain. Light Fawn and White Indian Runner Ducks. Ringlet Barred Plymouth Rocks, and Single Comb Buff Leghorn eggs. Correspondence solicited. J. W. Van Cleave, New Market, Ind.

Mammoth Pekin Ducks, winners at Chicago, Minneapolis, Wisconsin State Show and Fond du Lac. Eggs, $1.50; $1.00 per 12; $3.00 per 50; $5.00 per 100. Circular free. Jos. H. Kitchen, Eldorado, Wis.

Runners—English-American-White. Prize winners. Perpetual motion white egg machines, outlaying hens. Eye-opener circulars. Write your wants. Special, Reds, Partridge Rocks. J. Newell, Girard, Ill.

Snowflake Strain White Indian Runners—Aristocrats of the poultry yard and best of the breed. Eggs $8 per 15 from prize pens, $6 from second pens. Mrs. E. E. Eshbach, Indianapolis, Ind.

Fishel Strain White Runners, Walton Strain English, American Fawn and White Standard Bred and for pure white eggs none better. Thirteen eggs, $1.00 up. Wooldridge & Grape, Englewood, Ill.

Whits Indian Runner Ducks. Ideal shape and carriage. Prolific layers of large white eggs. Easy to raise. Stock and eggs for sale the year round. Jas. R. Snyder, Box S, Frazer, Mo.

Indian Runner Ducks, tested layers, moneymakers. Rhode Island Reds, big boned, red eyed, rich even glossy reds. Barred Rocks. Zebra barring. Reinharts Farms, Ottumwa, Iowa.

Toulouso & Embden Geese, Indian Runner Ducks, that lay white eggs. That win, too. Stock, eggs, drakes. Instructive circular for stamp. Burt McConnell, Ligonier, Ind.

Indian Runner Duck Eggs. From Fawn and White prize winning stock. Heavy layers, white eggs, $1.00 per 12; $6.50 per 100. Now booking orders. L. R. Street, Webb City, Mo.

Indian Runner Ducks, Fawn and White. Eggs, $1.00 per 15; $2.00 per 33, $3.00 per 50. Mammoth Bronze Turkeys, the big kind; eggs, $4.00 per 11. J. W. Fretz, Bosworth, Mo.

Pearl White Eggs from light Fawn and White Indian Runner Ducks. Also Single Comb Rhode Island Red eggs. De Graff strain. Mrs. Ivan Jacobs, Sellersburg, Indiana.

Bred from winners. Rouen, Colored and White Muscovy, $4.00 per pair; drakes, $2.00. Toulouse gander, $5.00. White Guineas, $2.00 per pair. Ralph Wilson, Bloomville, Ohio.

Mammoth Pekin and Indian Runner Ducks. The birds for the fruit grower. Eggs, $1.50 for 12; $3.00 for 30, $4.50 per 50. Paul & Gordon Griffith, Fredericktown, Mo.

Indian Runner Ducks—Fawn and White, stock for sale. Eggs $2 per 15, $5 per 45, $10 per 100, express paid. Ducklings 30c each. K. I. Miller, Box 2, Lancaster, Mo.

Indian Runner Ducks, wondsrful layers of pure white eggs; also Giant Bronze Turkeys. Prize winners. Write for prices on eggs. B. F. Morgan, Independence, Ind.

White Indian Runner and Buff Orpington Duck Eggs. Get one of these new breeds. They are mortgage lifters. Instructive circular. French & Hepp, 4358 Umatilla, Denver, Colo.

Whits Indian Runners, eggs $4.00 per 12. Fawn and White and English, $1.00 per 13; $5.00 per 100. Also Single Comb Rhode Island Reds. Mrs. J. W. Myers, Marion, Ohio.

Indian Runners—Exhibition and utility stock. English imported. Pure white eggs. Lay except at moulting. Per dozen, $1, $2, $3 and $5. A. P. Burk, Camp Chase, Ohio.

Indian Runner Ducks, Light Fawn and White, S. C. B. Leghorns. Eggs for sale. Strictly fresh eggs sent out, guaranteed safe arrival. Mrs. Mary Ryan, Bloomfield, Iowa.

Buff Orpington Ducks. Great layers. Very beautiful. Booking orders. Eggs, $1.50, $2.50, 12. Indian Runner eggs, $1.00, 13. Stock for sale. J. W. Yates, Frankfort, Ind.

Indian Runners, Fawn and White. Pleased customers everywhere. Eggs, $5.00 per 100. A few drakes for sale. Very reasonable. Herman C. Volrol, Woodburn, Indiana.

Fawn and Whits Runnsrs. White egg strain, $3.00, $2.00, $1.25 per 15. Valuable instructions free to customers. Write, mating list. D. L. Sheldon, Scranton, Iowa.

Genuine English Penciled White Egg Indian Runner Ducks. Catalog free; $3.00 setting, Parks bred to lay Rocks, $2.00 setting. C. K. Vanderbilt, Lyons, N. Y.

Indian Runner Ducks—American Standard—Light Fawn, White. Perpetual egg machines, white eggs; $1.50 per 15, $4.50 per 50. Mrs. Clyde Myers, Fredonia, Kan.

Eggs, Eggs, Eggs. Whits Indian Runner Ducks (Fishel's), $6 per 12; Rhode Island Whites, best utility, fancy breed, $3 per 15. Fred Foster, Seville, Ohio.

Whits Indian Runner Ducks. The kind that win and lay pure white eggs. Eggs, $5.00 per 15. Write for mating list. C. E. Densmore, Springwater, N. Y.

Eggs for sals from extra heavy, high scoring Pekin Ducks and White China Geese. Farm raised stock, fertile eggs. Write W. H. Sheka, Grafton, Iowa.

A fine lot of pure bred White Muscovy Ducks for sale. Prices on pairs, $3.50. Eggs for sale in season; dozen, $1.50. Mary Ramsey, Manchester, Minn.

White Indian Runner Ducks. Silver Wyandottes, 1st cockerel, 1st and 4th pullet at Springfield, 1912. Write for prices on eggs. L. J. Ferrill, Farina, Ill.

Indian Runner Ducks—The kind that lay all winter. 150 breeders; eggs, $1 per 15, $5 per 100. Stock prices low. Bernard Reed, McConnelsville, Ohio.

Indian Runner Ducks—Genuine English Standard; lay white eggs only; eggs for sale; no more stock at present. E. E. Hopkins, Townville, Pa.

White Indian Runner Ducks, Fishel strains, trio, $25.00. Eggs, $4.00 per 12; $7.50 per 24. Henry Schowe, Jr., New Bremen, Ohio.

Wild Mallard Ducks. A strain from wild ducks on Sodus Bay. Eggs, $3.00 per 12. T. G. Ashmead, Williamson, N. Y.

Mammoth Pekin Ducks. Big winners. Best for market and easiest raised. Eggs, $5.00 per 100. Oscar Wells, Farina, Ill.

Turkeys—White Holland

Large White Holland Turkeys; 32 pound toms; 19 pound hens; 16 pound pullets. Eggs, 13, $2.50; 50, $7.50; 100, $15.00. Circular free. J. C. Hodges, Waterloo, Ind.

Turkeys, Whits Holland cocksrels and pullets, extra fine, from prize winning stock. Eggs, five dollars per setting of ten. Fertility guaranteed. R. Barrie, Bethel, Kan.

Turkeys—Bourbon Red

Cording's Bourbon Red Turkeys. Pens not related. Toms fit to head any pen. 48 head. Fishel White Rocks, White Guineas. Enterprize Yards, Wingate, Ind.

Bourbon Red Turkey Eggs. Two-year-old breeders. Big frame, grand color, domestic as chickens. Fertile eggs, $3.50 per 11. Mrs. Clyde Myers, Fredonia, Kans.

Turkeys—Mammoth Bronze

Wild and Bronze turkeys and chickens. Eggs for hatching. Catalogue, 2c stamp, showing wild gobbler from the mountains. Valley View Poultry Farm, Belleville, Pa.

For Sale—M. Bronze Turkeys, prize winners at Minnespolis, St. Paul and Winnipeg. Write for photo and prices. C. J. Kapphahn, Route 8, Alexandria, Minn.

Pigeons

Write for our 1912 big free squab book, telling how to make money breeding squabs. How to start small and grow. Enormous demand. 5,000 wanted daily by one marketman. See what he says in National Squab Magazine (monthly). Specimen copy from us, ten cents. Plymouth Rock Squab Company, 341 Howard street, Melrose, Mass.

White, Black, Red and Blue Maltese hens. Yellow and Red Carneaux. Breeders and youngsters. I breed them. None better. Price reasonable. Lafreniere, Vineland, N. J.

Guaranteed Mated Pairs. Homers, $1.00; Carneaux, $3.00. Maltese, $3.00. 2 illustrated catalogs, 10. Pigeon Dept. Hillhurst Farm, R. F. D. Box No. 22, Orchard Park, N. Y.

Pigeons—Three pairs guaranteed extra homers, $5.00. Leg Bands, ten cents dozen. Cleaning tools, dollar a set. Kirkbride, 102 East Park Ave., Haddonfield, N. J.

POULTRY SUPPLIES

Use Wyandot White Oil. The oil that's right, for incubators and brooders. As good in the home this season as for poultry purposes. Stands inspection everywhere. Order direct from us and we will help with the freight charges. Write and we will quote you. The Wyandot Refineries Company, Crawford, O.

Smokeless Wicks, non-explosive. For incubators and Brooders they have no equal. Thousands are used on the large poultry farms both here and in Europe. Write today for testimonials etc., all sizes 2 for 25c. Comstcliffe Poultry Farm, Tenafly, N. Y.

For Sale—Seventy-two-egg hot water incubators, all complete, for $6. Freight prepaid. Do you want Indian Runner duck eggs? Runner ducks are the farmer's gold mine. Catalogue free. Golden Rule Incubator Company, Middletown, Ind.

Do your hens lay in winter time? If not, why not? Do you want them to lay? If so, feed Boldt's Laying Tonic, 50c per package; 6 packages $2.50. Boldt's Poultry Remedy Co., Albion, Mich.

Free advice on poultry problems: Housing, feeding, management, how to treat diseases. Letters welcome. New 80-page poultry book free if you send 4c postage. The G. E. Conkey Co., Dept. No. 86, Cleveland, Ohio.

Ars you interested in the best automatic poultry feedors ever built? If you are get in line with the 20th century goods. They bring results. Booklet free. H. E. and C. S. Barnes, 86 King Ave., Columbus, Ohio.

Actual live hsn incubator, near million used. Patented plans; ask for free book, giving hundreds testimonials; satisfaction guaranteed or money refunded. Address, U. U. Co., Box 48, Rivera, Calif.

Save the chicks. Givs them Bob White Diarrhoea Remedy and avoid losses. Large box 50c, post paid. Send today. Bob White Co., Ames Sta., Omaha, Nebr., Box 7.

Poultry Supplies. Send one dollar for Roup Cure recipe. Make your own Roup Cure. Sure cure. Money back if dissatisfied. C. G. Omen, Council Bluffs, Ia.

Profit and Hsalth in Poultry. Hundreds have paid me five dollars for this instruction. Now in book for half dollar. Dr. Nathan Sanborn, Holden, Mass.

FARM LANDS FOR SALE

Arizona

Frse Homesteads in the Artesian Belt. Finest fruit land. Good climate, good water, good markets, on railroad. Address Secy. Commercial Club, San Simon, Arizona.

Arkansas

Jackson County, Arkansas, Farms. Smooth and level. Will stand rigid inspection. 40 acres, all deadened, 4 acres cleared, no buildings, all tillable, in good settlement. One mile from school, 3 miles to town, $1,200. Half cash, balance on terms to suit purchaser.

120 acres, 20 acres improved, log house, frame barn, 65 acres tillable, 55 acres requires ditching to be made tillable, plenty of good timber, free stock range. $18 per acre.

80 acres, 45 acres improved, all tillable, good new six-room frame house, 1 tensnt house, 2 small barns, young orchard of about 50 trees partly bearing, good neighborhood. One-fourth mile from school, 4 miles from town; $4,000. $2,250 cash, balance on terms to suit purchaser.

40 acres all timbered, no buildings, 2 miles from town. $800. $500 cash, balance on terms to suit purchaser.

84 acres, 65 acres improved, log and box house combined, frame barn. 3 miles from town. $3,500.

J. W. NICHOLSON, Swifton, Ark.

Ideal Fruit and Stock Farm, in the best section of famous Benton County, Arkansas. 40 acres, 2 miles from Hiwasse. 22 acres 9-year-old Gano and Jonathan orchard in splendid condition, also 2 acres of Elberta peaches, 2 years old. Balance splendid fruit or grain land. Good 3-room house and out buildings. Fine spring at kitchen door. Will give reason for selling in private letter. Price $2,500, one fourth cash, balance in three yearly payments from sale of fruit. One good crop will pay for this place and the prospects are as fine as one could ask. Other places for sale. Write Banks & Adcock, Hiwasse, Ark.

Famous Springdale Fruit District, in Ozarks. Money-making orchards, $100 to $200 acre. Why pay prohibitive prices for raw western lands? Our apples have finer flavor and produced at half expense of western fruit; no irrigation. Orchard lands $30 acre up. No malaria, mosquitoes, negroes, saloons. Prices bound to seek proper level. Free list and literature, ten cents for census map. Fredrick Realty Company, Springdale, Washington Co., Ark.

Famous Springdale Fruit District; 8 acres and 4¾ acres in town. Fine improvements and orchards; 56 acres at $1,700 and 20 acres at $1,200. Few miles out. Fine combination farms, plenty fruit, fair improvements. Free list. Ten cents for census map. Fredricks Realty Company, Springdale, Washington Co., Arkansas.

200 Acres Elberta Peach Land adjoining the big orchards at Highland, Pike County, Arkansas. Price, $30.00 per acre cash. Green & Millwee, Prescott, Ark.

California

Best Markets, Biggest Profits are enjoyed by the Loomis grower. Seven competing shipping companies are anxious to buy his products. He can sell or ship—the world is his market. Earliest and best fruits of all varieties. 1,000 cars shipped annually. Land $60 and up. Cheapest in California. Rowell Fruit Company, Loomis, Cal

Come to Shasta County. We have choice sediment land on Sacramento River, under irrigation ditch at $100.00 per acre, near Anderson on main line of Southern Pacific. Shasta Land Co., Anderson, Calif.

California Irrigated Lands—Famous Gridley colonies; tracts to suit; easy terms; improved farms; best homeseeker's proposition in California. Write for particulars. Gridley Land Co., Gridley, Calif.

Colorado

If you want a part of one of the very choicest tracts of fruit land on earth, where conditions are ideal for growing fruits and for a home, then send for copy of a beautiful booklet describing Morrisanla Ranch, Grand Valley, Colo. This is not cheap land—it sells for $300 per acre, including perpetual water right, but it is worth the money. It may be that some member of your family needs the benefit of Colorado's climate for some form of lung trouble. Get a tract of this land and establish your home there before it is too late. The ranch contains 880 acres, and only part of it is for sale, for we will develop the remainder for our own use. Shall we send you the booklet which describes the place? Write me if interested. James M. Irvine, Editor The Fruit-Grower, St. Joseph, Mo.

Double Your Dollars. Buy Apple and Potato lands in Western Colorado. Government irrigation. Profit producing prices. Best climate. Reliable information. Crop statistics given under oath. Olinger & Knapp, 1712 Champa St., Denver, Colo.

700 Denver Suburban Lots, $1.00 down, $1.00 a month. Extraordinary 45 day offer. Near city limits, city water on boulevard. Transit. Sure advance. Write immediately. Bank reference. Agents wanted. Loretto Realty Company, 1639 Champa St., Denver, Colorado. Charles F. Leimer, Manager.

For Sale—Twenty acres best orchard land; North Fork Valley, Delta County; no crop failures, plenty water. Write owner. Save commission. Theodore Polling, Hotchkiss, Colorado.

We sell land in San Luis Valley, Colorado. We want live representatives in every locality. Get our proposition. Monte Vista Realty Company, Monte Vista, Colo.

35 acrss fruit land—improved, good location, plenty of water, $2,800. New vanadium mines close by. Write owner, G. E. Hopkins, Nucla, Montrose Co., Colorado.

Florida

Homss in Healthy West Florida, $20 per acre. Part pay in crops. "Facts About Florida" free. W. S. Reeve, Pensacola, Fla.

Georgia

A fine piece of partly developed apple land for sale. Every accessibility. Will sell as a whole or in part. Cheap at price. F. R. McNeil, Tallulah Falls, Ga.

Idaho

A fine commercial apple orchard in the Palouse country, 6 miles from Moscow, Idaho. Orchard nearly all bearing; house, barn, fruit house, tools. Will return 25 per cent on investment yearly. Address L. F. Henderson, Moscow, Idaho.

For sale or exchange—Canyon Co., Idaho, orchard. Ten acres set to apples; Jonathans, Winesaps and Rome Beauty. Address C. W. Renshaw, Rock Valley, Iowa.

Indiana

For Sale—160 acre fruit farm. Apples, pears, peaches, plums, cherries, quinces, apricots. Near North Vernon, Indiana. Very cheap. Ask for particulars. G. P. Diehl, 419 Elm St., Cincinnati, Ohio.

Illinois

For Sale—120 acrs apple orchard. About 4,000 trees; Clay County, Illinois; cheap. Address G. P. Diehl, 419 Elm street, Cincinnati, Ohio.

Massachusetts

FARMS FOR SALE
In the Connecticut Valley. Best on earth. Descriptive Circulars Free.
F. R. Hawley Co., Springfield, Mass.

Minnesota

Rich soil, ideal climate. Abundant rainfall, best transportation; 20 acres, $600, $10 monthly. Map and literature free. S. O. Sanderson, 184 Palace Bldg., Minneapolis, Minn.

Mississippi

I am offering for sale 1,840 acres of farm land in Grenada County, Miss. 200 acres in cultivation, all good fruit land or would make good stock farm; price $10.00 per acre. J. S. Houston, 737 Marquette Bldg., Chicago, Ill.

Missouri

We have for sale some first-class corn, clover and bluegrass farms in Cass County, Mo. Can please you in a home. Jot M. Wilson & Son, Harrisonville, Mo.

North Carolina

Coms South. Mountain section, altitude 2,250 feet. Mild winters, cool summers. Dairying, fruit growing, diversified farming. Cheap lands. Information Bureau, Hendersonville, N. C.

Oregon

Wolf Creek Orchard Tracts, all sizes on easy terms, right on main line Southern Pacific, with 8 passenger trains daily. Best Rogue River soil, producing finest fruits and vegetables. Poultry pays surprisingly. Ideal climate and water. A carpenter, with some capital, is needed to take interest in townsite. Unexcelled opportunity. Write immediately to W. G. Smith, Owner, Wolf Creek, Oregon.

Rogue Rivsr Valley. Best Medium climate on earth. Coldest this winter, 21 degrees above. Get away from your winter blizzards and extreme heat of summer. The very best pear, apple, grape, alfalfa, dairying and poultry land, at reasonable prices. Elegant fishing and hunting. Write. A. N. Parsons, Grant's Pass, Oregon. No. 354. Bank references.

Orchard Valley Fruit Farm for sale. Sixty acres. Fine bearing Spitzenberg and Yellow Newtown apples, Bartlett pears. Will sell all or part. The name of this orchard is registered under the laws of Oregon. H. H. Olcott, Canyonville, Ore.

Wasco County, Oregon. Fruit and grain lands cannot be excelled anywhere in the Northwest. Climatic conditions ideal, insuring abundant crops annually. Transportation facilities unsurpassed. R. H. Weber, The Dalles, Ore.

For Real Estate and Investment, farms, stock ranches, fruit farms, dairying, timber tracts, in an excellent climate, write W. J. Moore, Brownsville, Linn Co., Ore.

Oregon Apple Land for single purchaser or syndicate. Send for "Reasons Why Yamhill Can Beat the World on Apples," free. Curtis P. Coe, McMinnville, Ore.

We claim that the Umpqua Valley is "The Best in the West." Let us tell you why it is the best for you. Roseburg Commercial Club, Roseburg, Oregon.

Texas

Texas Gulf Coast Fig or Orange Orchard pays for itself in four years. Ideal climate and place to live. Best social advantages. Fine combination with poultry. Good markets. In order to get just what I wanted for myself and some friends, had to take a larger piece than we need, therefore want a few good neighbors to come in with us. Postal will bring you full particulars. J. Hart Welch, Box F, Douglaston, Long Island, N. Y.

Bermuda Onion Farm. 93 acres all in onions now. Southwest Texas. This crop will net twice selling price. On loading switch. Owners have 2,200 acres. Improved this to sell at fair profit. W. Foote, Scollard Bldg., Dallas, Texas.

For Sale—The Holloway Nurseries at Alvin, Texas. Trade established. Twenty acres land, modern buildings. Getting old; want to quit. Address D. Holloway, Alvin, Texas.

Utah

For Sale—Very choice selected fruit lands at Elberta, Utah. Much cheaper than company lands. About three times the water. Dry and irrigated farm lands. Choice Texas, Florida and other Southern lands. Colonization tracts. Inquire of R. H. Thomson, Hastings, Neb., or Continental Realty Company, Kearns Bldg., Salt Lake, Utah. Terms.

Alvin, Texas, choice orange, fig, strawberry, truck and general farming lands. The best of soil, climate, markets and social advantages. Sea breezes. Send for free booklet. E. C. & J. F. Webster, Alvin, Texas.

Fruit Farm for Sale—10,000 trees, 470 acres all under hog proof wire fence, 3 miles from city, with good schools and roads. Address L. B., No. 54, Texarkana, Texas.

Virginia

Look ahead five years—What's in store for you? Would a nice, cosy home, and a $3,000 income per year in this beautiful valley for life look good? A ten-acre apple orchard tract planted to 500 red-apple trees—which will cost you a few dollars now and a few dollars each month—will insure your future home, income and happiness. Write us and get "Free Booklet," with facts. Shenandoah Valley Apple Lands Co., Waynesboro, Virginia.

1912 will be a big year for the owners of apple orchards in the Shenandoah Valley, Virginia and now is your opportunity to secure one. I have seven carefully selected bearing orchards; prices, $1,500, $3,500, $3,700, $7,000 and upward, on easy terms, for you to choose from; all are desirable homes; all are certain income producers; write me today. H. Magie, Waynesboro, Virginia.

For Sale—A bearing Albermarle Pippin and Peach orchard, in Albermarle Co., Va., the best fruit section of the U. S. Five consecutive crops and very promising for this year. The Albemarle Pippin is the late Queen Victoria's favorite of all apples and is the highest in quality. A beautiful land in the most beautiful belt of the U. S. A chance. Write Sam'l B. Woods, Charlottesville, Va.

Bearing Young Orchard in Virginia—100 acres deep rich soil. Mainly Winesaps. Probably $3,500 crop this season. Splendid condition. Macadam turnpike. $7,500. Details write owner, Box 434, Lynchburg, Va.

Washington

Be independsnt and own your own home in the Walla Walla Valley. Unequalled opportunities for the small tract farmer, abundance of water, rich soil and ideal climatic conditions. The home of the Northwestern apple. Write for information and beautiful free illustrated booklet "C." The Commercial Club, Walla Walla, Washington.

REAL ESTATE AGENTS

Cash for your farm or business. I bring buyers and seller together. No matter where located, if you want to buy, sell or exchange any kind of property, anywhere, address Frank P. Cleveland, 994 Adams Express Building, Chicago, Ill.

Sell your property quickly for cash, no matter where located. Don't pay big commissions. Particulars free. Real Estate Salesman Co., Dept. 28, Lincoln, Neb.

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace Bldg., Minneapolis, Minn.

Wanted—$30,000 to $50,000 farm. Give complete description and rough sketch of place and location. Jas. E. Schwab, 133 F St., N. W., Washington, D. C.

Wanted—A first-class apple orchard. Must have best varieties. In south, north or east. Dr. Keller, Council Bluffs, Iowa.

NURSERY STOCK

Pedigreed Nursery Stock—If you want to plant trees that are sure to bring big returns in the future, write for our great new book, "Pedigreed Horticulture," the handsomest catalog of the year, giving complete information regarding pedigreed trees. We propagate all nursery stock from individual trees which have a record of bringing in big profits from the orchard. Do not fail to investigate. Write today. Our book is free. Winfield Nurseries, Winfield, Kan.

American Everblooming Hydrangea, the best hardy flowering shrub ever introduced. Hardy in Canada. Strong plants that will bloom the first year, 25 cents each; larger plants, 35 cents each, 3 for $1.00, prepaid. Send for our "Choice Little List" of ornamentals. It's free. E. Y. Teas & Son, East Plum St., Centerville, Ind.

Senator Dunlap Strawberry plants, finest Northern grown, on the best land. $2.75 per 1,000. Nearly twenty years in the business. Poultry catalogue free. No one has better plants. Order direct or write. But do one quick. Zachary Turner, Eleroy, Ill.

If you are interested in Cherry trees, the kind that produce results, buy Western New York trees, direct from the grower. No scale. Write for prices; other nursery stock. C. W. McNair Nurseries, 300 acres, Dansville, N. Y.

Money in buying best nursery stock grown. Everything for the fruit grower in trees, plants, vines and ornamental stock. None grown that excels ours. Handsome catalogue free. Grand Mere Nursery, Baroda, Mich.

Gibraltar—Canada's New Black Raspberry. Large and hardy. Greatest yielder at experimental farm; six strong plants, 50c; fifteen, $1.00, postpaid. Send for circular. N. E. Mallory, Blenheim, Ont., Canada.

Satsuma oranges and grapefruit trees, budded pecans, fruit and ornamental shade trees. Rose bushes and shrubbery. No better stock grown. Illustrated catalog free. Turkey Creek Nursery, Box 39, Macclenny, Fla.

Dahlias, named kinds, $1.25 per 100. Gladiolus, good mixture, same price. 1-yr. Cherry, Montmorency and Early Richmond, 3 ft. up, 10c each, F. O. B. C. W. Hoffman, Route 13, Dayton, Ohio.

Roses Guaranteed to Bloom. Direct from America's foremost growers. Write for 1912 catalogue. The Conard & Jones Co., Rose Specialists—50 years' experience, Box 12, West Grove, Pa.

Strawberry plants—Send for our valuable book and price list of hardy Northern-grown plants. Fruit growers and poultry keepers' supplies. George Stirdivant, Sheboygan Falls, Wisconsin.

Apple trees at wholesale prices; leading varieties. No better grown anywhere. An extra fine lot of Jonathans. Save agents' commission. Write for prices. Albert Mathis, Payette, Idaho.

Apple seedlings and root grafts. My seedlings are Northern Iowa grown. Grafts made in any style by experienced workmen. Write for prices. Hawkeye Nurseries, Stratford, Iowa.

Strawberry plants, $2 per 1,000; raspberry plants, $5 per 1,000. Other stock in proportion. Catalogue free. Write today. Vernon H. Krider, wholesale nurseryman, Middlebury, Ind.

Peach, pear, plum, cherry and apple trees. From the largest nursery center in the world. Send for catalog. Alton E. Randall, Main and Adams St., Dansville, N. Y.

Raise Ginseng, $1 per square ft. of ground, $25,000 on one-half acre; grows anywhere; one-half city lot a bonanza. Sheboygan Ginseng Gardens, Sheboygan, Wisconsin.

Elm, Maple, Box Elder, nursery grown. Sizes 6 to 12 feet. Leased ground. Must move them. Write us for prices on car lots. The Newburys, Mitchell, S. D.

Americus fall bearing strawberry, true to name, $2.00 per dozen. Express paid; also 300 other varieties, $1.50. W. H. Koell, Box 702, Hampton, Iowa.

Fifty 5-foot Cherry Trees $5; 100 Pomona Red Currants $1.50; 5,000 Strawberry plants, $8; 1,000 Red Raspberries $4. Alva Cathcart, Bristol, Ind.

Plant good trees. We have a lot of fine trees for sale at prices that will please all that need trees. Louisiana Star Nursery, Plain Dealing, La.

Fall Strawberries (everbearing) tested plants, $1 dozen; $4 hundred, prepaid. Stock very limited, don't delay. Beck & Beck, Piqua, Ohio.

Allen Peach (New) big yellow freestone, free catalog of all kinds of nursery stock. W. A. Allen & Sons, Geneva, Ohio.

BULBS

Gladioli—"Peace," the most beautiful white in existence. Many other varieties of exceptionally high quality. Write for illustrated catalog. Arthur Cowee, Box 25, Berlin, N. Y.

Gladioli Surplus, half price—America, Silver Trophy Blues, Gold Medal, etc. Cowie strain, grand. We are wholesale growers. Write. Beck & Beck, Piqua, Ohio.

SEEDS, PLANTS, ETC.

Special to gardeners and truckers—We are making extensive preparations for the coming plant season, spring, 1912, and will have a fine list of the following to offer: Lettuce, in five varieties; cabbage, all the leading kinds; peppers and eggplants, pot grown and otherwise transplanted; cauliflower, celery. Special attention is given the growing of celery plants of golden self-blanching French stock. Tomatoes, all the leading varieties, transplanted and pot-grown plants. These are money-makers and we shall be pleased to receive inquiries and give best possible prices to large buyers. We have extensive green houses and hotbeds and truck 200 acres. Fox-Hall Farm, R. F. D. No. 2, Norfolk, Virginia.

California Premium Seeds given away with the foremost weekly magazine of western life and stories. New "Orange-berry," "Pyramid Celery," "Pineapple-melon," "Panama Rose-Lily," and others. Will grow anywhere. Magazine gives full instruction regarding growth and care. Only one dollar a year. Assorted packages and bulbs sent with first copy. Seeds you cannot buy. Address, San Jose Magazine Co., San Jose, Calif.

Pure unwashed seed of Halbert Honey and new shipping watermelon, Rubber Rind, direct from the originator. Write for prices. H. A. Halbert, Originator, Coleman, Texas.

Early cabbage plants; fine; mail, 60 cents 100. Express, $2.50 1000. Firmest shipping strawberry grown. Dozen, 50 cents. Mark T. Thompson, Richmond, Va., originator.

Want Asparagus Plants? We offer the best to be found at prices that will interest you. Perry Nursery Co., Perry, Iowa.

Seed Corn. Reid's Yellow Dent and Boone County White, per bu., $2.00. New Kherson Seed Oats per bu., 80c. F. M. Riebel, Arbela, Mo.

AGENTS WANTED

Local representative wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L420, Marden Building, Washington, D. C.

POSITIONS WANTED

Orchardist—Wide experience, agricultural college and business college training, wishes position as superintendent, or assistant with commercial orchard company. West preferred. Address Orchardist, care The Fruit-Grower.

Wanted by competent man, position with some well established nursery or seed firm, as general manager, will invest ½ salary in business. Have had several years' experience. In reply state salary offered, concessions and requirements. Address G. M., Fruit-Grower.

HELP WANTED

Wanted—A man or woman to act as our information reporter. All or spare time. No experience necessary. $50 to $300 per month. Nothing to sell. Send stamp for particulars. Sales Association, 790 Association Building, Indianapolis, Indiana.

Salesmen—To sell the most efficient insecticide and fungicide on the market. Exclusive territory given. Splendid opportunity for hustlers. Entomold Chemical Co., Woonsocket, Rhode Island.

Wanted—Women and girls to work on large fruit and poultry farm. Steady work. Good home. No objections to colored people. Write The Hillside Farm, St. Peter, Minn.

Wanted—An experienced man to prune, spray and care for ten acres of peaches and do general farm work. R. W. Burrow, Gum Springs, Ark.

Wanted—A good homeless woman or cook to keep house. Must know how to cook. German preferred. Fred Huecker, Route 1, Bunceton, Mo.

FOR SALE

Owing to ill health I offer my poultry plant for sale at less than one-half value. A live man can clear $1000.00 the first year. Will stand rigid investigation. Write at once. E. F. White, Route 3, Nicholas, N. Y.

Sacrifice Sale on second hand automobiles, trucks, tires, etc. Write us for particulars; new four cylinder touring cars below manufacturer's cost. Box 275, Burlington, Wis.

Two Gasoline Power Sprayers. Capacity 12 and 8 gallons, fully equipped, good condition. New last season. For sale cheap. Nebraska Apple Culture Co., Lincoln, Neb.

For Sale—Power Sprayer and Outfit. Excellent condition. Used 18 days. H. J. Simons, Columbus, Ohio.

Get our wholesale prices on spray pumps, spray materials, agricultural chemicals and everything for the orchardist. Orchard Supply Co., St. Louis, Mo.

Standard Typewriter cheap, perfect condition. You can't afford to miss this if you have any use for a machine at all. W. Ehlers, Carthage, Mo.

TO EXCHANGE.

For Trade—Nice new five-room house. Nice lot 40x150. Fine well. Basement, out buildings on nicest and best street in town, at the edge of town. 13 good factories the farthest not over a mile. Plenty of work here. Price $1,500.00, Mortgage $600.00 to run five years. I want a few acres of land worth about $1,000.00. W. T. Hickman, Decatur, Ill. Rt. 5.

GALVANIZED STEEL NESTS

Send for free catalogue of the Knudson patent galvanized steel, lice-proof poultry nests, coops, feeders, etc. They positively eliminate the lice and mite problem. Pay for themselves in short time, whether you keep ten hens or ten thousand. Write today. Knudson Manufacturing Co., Box 304, St. Joseph, Mo.

LIVE STOCK

O. I. C. Swine. Pigs 8 to 10 weeks old a specialty. Prices right, 30 years experience. The great book, "Raising Hogs for Profit," 140 pages, price $2.00 only. Order this book today, if you don't like it return it and get your money. M. L. Bowersox Co., Route 4, Box 9, Bradford, Ohio.

Registered Holstein-Friesian bulls cheap. Strong and growthy. King Segis blood. Regal White Wyandotte eggs, hatching, 5c each. Satisfaction guaranteed. Luther Falkey, Phelps, N. Y.

Red Polled Cattle. Bulls of serviceable age. From good milking stock. Young calves and cows. Barred Rock chickens. Clyde M. Worley, Route 2, Mercer, Pa.

Milch Goats—Swiss and Spanish breeds. G. H. Wickersham, 1244 St. Francis Ave., Wichita, Kansas.

DOGS AND PET STOCK

Scotch Collie Puppies. Pedigreed stock. $5.00 and up. Dog, Hare and Poultry catalogue. Belgian book, 5 stamps. Failing Poultry Farm, La Fargeville, N. Y.

Shetland Ponies or any of the leading breeds. Cattle, sheep, hogs or dogs. Send 4c for illustrated catalog. J. D. Stodghill, Shelbyville, Ky.

Collies for farmers. Pedigreed stock, pups $7.50 to $10.00; grown dogs, $15.00 up. Several bred females. W. D. Weaver, Harrisonburg, Va.

PATENTS

Patents Procured and Sold. All countries; inventions make fortunes; manufacturers seek my clients' patents; send sketch of your invention today; book free. H. J. Sanders, 360 Crilly Building, Chicago, Ill.

Send For Free Booklet—All About Patents and Their Cost. Shepherd & Campbell, 500M Victor Bldg., Washington, D. C.

PRINTING

Poultry printing—Kiger's new poultry journal 1 year, 30-word classified advertisement, 25 2-color postcards, all 50c. Poultry printing samples, 2c. Orvil Kiger, Brighton, Iowa.

MISCELLANEOUS

Free—"Investing for Profit" magazine. Send you name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine. It is worth $10 a copy to any man who intends to invest $5 or more per month. Tells you how $1,000 can grow to $22,000. How to judge different classes of investments, the real power of your money This magazine six months free, if you write today. H. L. Barber, publisher, R434, 20 W. Jackson Boulevard, Chicago.

Sulphur—We can supply your requirements promptly at the lowest prices, in barrels and sacks. Our sulphur is the best and cheapest that can be gotten, for making lime and sulphur solution. Write for prices. Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

Do you love your family more than lawyers? Then protect your life-earnings by keeping a will among your papers. Full instructions and typewritten form that anybody can fill out, 25 cents. Oxford Co-operative Bureau, Fairmont, W. Va.

A Recipe every housewife should have. A premium tested recipe. How to make dumplings that never fail or fall. Sent anywhere for 20c cents silver. Mrs. Gustav Schmitz, Genoa, DeKalb County, Illinois, Box 388.

Have you read "How to Succeed?" It is the greatest satire ever written on the get-rich-quick craze, 15c postpaid. A. Ruhnau, Dept. 10, 280 Columbus Ave., New York, N. Y.

Have all kinds second-hand guns, revolvers, stoves, furniture, steel traps, etc. Furs a specialty in the season. Correspondence solicited. James A. Gregory, Liberty, Ind.

Paper Pots will give you beans, melons, corn and cucumbers three weeks earlier and they are fine for strawberry plants. Crosby & Son, Catonsville, Md.

Peach Blossom Lotion, whitens complexion, preserves youthful coloring, prevents premature lines. Not oily. 25 cents. J. Cox & Co., New Milford, Conn.

BLACK PEARL RASPBERRY

Now in better condition than any other variety. Try it. Send for free descriptive circular and for catalogue of Small Fruit Plants, Trees, Ornamentals, Asparagus, Rhubarb, etc.

Holsinger Bros., Rosedale, Kansas

TOBACCO Long green leaf tobacco to chew or smoke. The kind you have been looking for. I ship any quantity, 20 cents pound. "It's just real good." TRUE CUTLER, - HOLT, MISSOURI

THE NEW YORK MARKET

Farm products lead a precarious existence on the New York market at this season. The man who could accurately predict what the price might be a few hours ahead would be a welcome and valuable asset for any firm. Prices vary with the hour, and in numerous instances changes are so violent that profit disappears under the onslaught of low bidders. The market opens at about two o'clock in the morning. It is then that the railroads make deliveries on their piers. Usually business opens with a considerable degree of activity. Best qualities in fancy packings go out rapidly. But there is always a liberal proportion that cannot be sold at profitable figures. Fortunately New York is such a vast world that before the day is over almost everything goes out. Later prices are scarcely ever profitable. They help the shipper on his freight cost, but the other expenses he must make good himself. In other words, unless the produce offered is up to the proper standard the price obtained does not yield anything to anyone who handles it. Such products should be kept at home.

New York is a great world of consumers and offers market opportunities unsurpassed elsewhere, yet quality, as represented by appearance, plays such an important part that it deserves more attention than it has yet received. For example, a neat package, enhancing the appearance of the products, will go far toward attracting buyers. Very many New York consumers buy almost wholly by eye. The producer and shipper who understands this and acts upon his knowledge will show a larger profit than he who does not.

Packages which arrive in all stages of dilapidation are often responsible for a reduction below profitable prices. And there are far too many such packages, though the associations which have been organized in all the principal producing sections have done much to modify these unfavorable and altogether unnecessary and expensive conditions.

Produce From Many Places.

An idea of the miscellaneous nature of the produce reaching this market, the volume of the business and the widely scattered sections in the competition may be obtained from the receipts of a single day. There were 4,716 barrels of home-grown potatoes received, and in addition 39,655 bags from abroad. Other receipts were: Florida lettuce, 552 baskets; Florida celery, 2,117 cases; Florida tomatoes, 1,544 crates; Florida cauliflowers, 372 baskets; Florida cabbages, 1,513 crates; Virginia spinach, 120 barrels; New Orleans vegetables, 938 barrels; California artichokes, 292 drums; California celery, 180 cases; various southern points, 3,862 barrels kale and 2,677 spinach; from Havana, 643 packages various vegetables, Marseilles steamer, 230 cases onions.

These arrivals afford a fairly accurate view of what a cosmopolitan place the New York Market is. Producers in the south and southwest are now competing with Europe and Havana, with California contributing a liberal proportion of some varieties. Celery, for example, is now coming from New Orleans, which probably means Louisiana, and possibly nearby localities in Mississippi. Florida is shipping freely, and California is sending large shipments of excellent quality. The average store price for the day in question was $3.00 to $4.50 per standard case for Florida stock, while 10-inch cases sold for $3.00 to $4.00. California was quoted the same day at $6.00 to $9.00 per case.

Celery was chosen at random, not because the difference in prices was more marked, but because it depends less upon the appearance for its price than almost any other product shipped. Yet here is a difference in outside quotations of $4.50. Freight costs a little more across the continent than it does from Florida, but not as much as that.

What Determines the Price.

The principal influences were quality and packing. California growers have learned how expensive it is to ship poor stock to this market. Therefore, they select what they ship and pack it as attractively as celery can be packed. The result is seen in the prices. Perhaps this wide range will not hold good each day, but the difference occurs with sufficient frequency to make it worth while considering. The southern grower can do as well. It is a question of exerting enough additional care to cause an increase in price.

Strawberries are coming into the market now, some from the South, some from California, and others from hothouses. The strawberry is a precarious article to ship. It stands but little damage in transit, and a delay of a few hours means often a serious loss to the shipper. If it were possible to prevent their arriving on Sunday, for example, profits of all interested would be larger. The fruit that is held over must go at low prices and that reduces the figures on everything offered. In the height of the season as many as 125 cars are received in a day, and when that is increased by stock held over from Sunday the effect may be imagined. Prices are ranging as high as 60 cents for refrigerator shipped berries, but some left over from Sunday went at 15 cents or lower.

The strawberry at this season of the year is a luxury. True, New York has a sufficient number of people who can afford luxuries to take every berry that arrives at a good price. But the produce man isn't always situated so he can let people know what he has, consequently his sales are more restricted than they should be and prices suffer proportionately.

Furthermore, strawberries are extremely sensitive to competition, with apples and cranberries the worst influences in this respect. Cranberries have ceased to be a factor of importance. but apples are arriving liberally now, and are offered at relatively low prices. For instance, the very highest priced apples, Greenings, are now $4.00 a barrel. The best quality Spies are $3.75, and fairly good apples can be bought for $3.00

The shipper is getting up to 30 cents, perhaps, for his best berries, out of which comes expenses. The store price for Florida Nikomas is up to 60 cents. These are selected and refrigerator shipped. For open crate the price ranges as low as 20 cents, and the extreme outside figure is 38 cents. From 20 to 60 cents represents the range of prices on a fair average day, and undoubtedly close investigation would disclose the fact that a very much larger proportion sold nearer 20 than 60 cents.

These few examples have been selected to show the shipper what opposition he must overcome to secure the highest price for his products. It is a question which can be controlled in some degree by the shipper, and improvement in the quality and care in packing and speed in shipping will help. Gradually shippers could revolutionize their market by sending out only those grades which will sell at the highest price. Perhaps a smaller quantity, bringing higher prices, would assist materially in solving many of the problems which confront shippers.

Commission men are not always fair, and they often have a way of equalizing sales which is anything but commendable. Yet, after an acquaintance extending over a long series of years the writer of this has found them disposed to be as fair as the circumstances under which they do business admit.

Shippers who have produce ready for market now should reap the benefit of this condition. It has reduced profits during the past few months. It should help to make them higher during the next few weeks. It must be remembered however, that much poor produce has been distributed and consumers are somewhat shy about buying as liberally as they do ordinarily at this season.

BURTON H. ALLBEE.

New Jersey.

Fruit Shipping Associations Unite.

The Grand Junction Fruit Growers' Association has taken over the holdings of the Grand Valley Fruit and Produce Association, with headquarters at Grand Junction, Colorado, and will hereafter represent the members of the latter organization. This gives the Grand Junction Association a number of additional members, and also gives additional trackage and warehouse facilities.

The Grand Junction Fruit Growers' Association has also contracted to handle the melons of the Clifton Canteloupe Growers' Association for the coming season. It is expected that the acreage to be planted to melons will produce about 100 carloads. The Clifton melons are of very highest quality and are in demand by those who are acquainted with the same.

The movement of "getting together" continues still further, and it is now proposed to form a selling agency, to handle all fruits grown on the Western Slope in Colorado. A meeting was recently held at Paonia to discuss this subject, and growers in attendance were enthusiastic in favor of the movement. At this first meeting a set of resolutions was adopted, setting forth the purposes of the proposed plan, and another meeting will be held soon to continue the work. The resolution adopted at the first meeting follows:

"Be it resolved, by the fruit growers of the Western Slope that it is to the best interests of the fruit growers to form a central selling agency for all the fruit grown on the Western Slope, said selling agency to be managed by a board of control composed of one or more delegates from each fruit growing section, the delegates to be appointed by fruit growers.

"Sec. 2. The board of control to be empowered to put a price on all fruit to be sold according to varieties and grades at a cash price, f.o.b., cash sales to be preferred, and no consignment to be made except as a last resort.

"Sec. 3. The board of control to have the right to designate to which grade all fruit shall go, in fact to classify all friut—all fruit to be sold on its merits and no pro-rating.

"Sec. 4. Any fruit grower shall have the right to sell his or her own fruit, after getting the written consent of the board of control, but the board of control shall not give its consent if it finds after investigation that the sale will come in competition with other fruit.

"Sec. 5. The object of forming this association shall be to cut out all or as many as possible of the middlemen.

"Sec. 6. The board of control shall make it their duty to invite in as many cash buyers as possible, and to endeavor to make many cash sales.

"Sec. 7. It is suggested that a uniform pack is desirable, and the board of control draft formulas, or schedules for the packing and grading of fruit, including each grade and variety, said schedules to be printed and mailed to each member of the association.

"Sec. 8. An accounting of all sales and the expenses of operating the board of control shall be compiled at the end of the season and mailed to each member of the association.

"Sec. 9. Membership shall consist of stockholders of record.

"Sec. 10. All fruit growers and fruit growers' associations shall be eligible to membership."

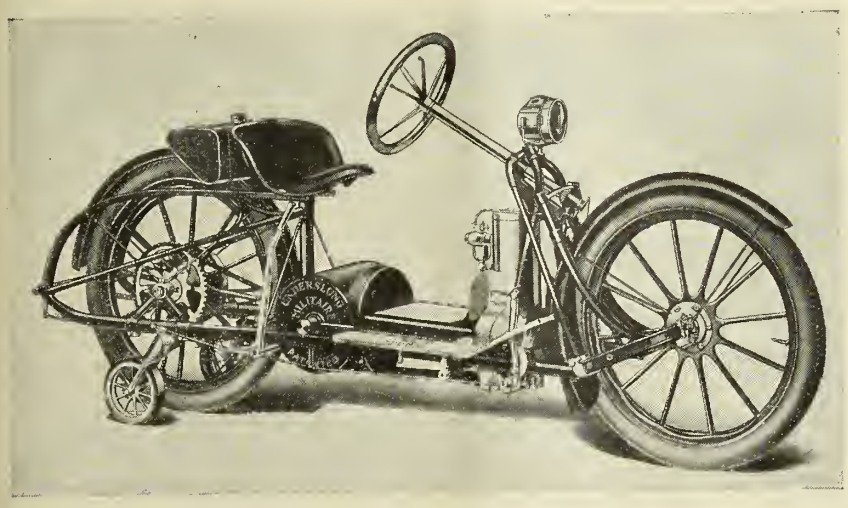
A committee was appointed consisting of prominent fruit growers to make effective the above resolutions.

A Novel Two-Wheeler.

Comfort for the rider never seems to have been considered up to yesterday by builders of two-wheel motor vehicles. The rider has been perched high in the air in an uncomfortable, awkward position, dangerous alike to himself and to others. Perhaps this fact has more to do with the general unenviable reputation which the two-wheeler has earned from the public than anything else. No one has questioned the utility of the machine, nor that it is a thoroughly good business proposition, and so hundreds of them are used in our streets daily.

Most of us at one time or other have wondered why some clever inventor had not brought out something more comfortable, more safe and sane in a single or double passenger two-wheel motor. In this country of inventors, a want is not long known before it is filled, and a Cleveland inventor has brought forward a machine which practically overcomes all the objections heretofore inherent in two-wheelers.

The new machine called the "Militaire" has an underslung frame, made possible by a very simple arc-shaped front axle. By this method of suspension, the center of gravity is brought very low, thereby vastly increasing the stability of the machine, as well as its safety and comfort. The elimination of the upper cross-bar characteristic of the diamond frame also permits of a comfortable bucket seat with back, which is suspended on a Cantilever mechanism, which secures easy riding qualities never before approached in a machine of this type.



THE "MILITAIRE" UNDERSLUNG MOTOR CYCLE.

The "Militaire" is also the first two-wheel motor vehicle to have a steering wheel and column with spark and gas control. Another novel feature is the fact that the machine is friction driven, eliminating all gears, while permitting of a wide range of speed changes, for example: 30 to 1 on low, 3 to 1 on high, and 10 to 1 on reverse, the reverse being a distinctive feature of this machine.

The "Militaire" also has foot controls for clutch, brake and speed changing, which is of course highly desirable. Perhaps the most important innovation of all, however, is the use of idler wheels to preserve the equilibrium of the machine, while standing, running at low speed or in sand, making it unnecessary to dismount when the machine is brought to a standstill by traffic or any other cause.

The new machine also has artillery wood wheels with staggered spokes, which are much more satisfactory and dependable than the ordinary type. In fact, this new two-wheeler has so many exclusive and desirable features that it seems unlikely that the company will be able to supply the demand during the first year, as it is understood that applications for territory are being received faster than it is possible to handle them. The temporary headquarters of the Militaire Company, 304 Columbia Building, Cleveland.

Two
Practical Booklets FREE

These booklets should be in ebery farmer's library

Practical Suggestions for the Fruit Grower, by Prof. J. C. Whitten, Department of Horticulture, Missouri State University, and **Corn and Alfalfa,** by Dr. S. M. Jordan, of the Board of Agriculture, Missouri State University.

Issued by the
Immigration Department

Missouri Pacific
Iron Mountain

"Only the man who has succeeded is competent to tell others how to succeed." These booklets have been prepared by men who are experts in their line and are practical in their treatment of the subjects mentioned.

Write today—a postal will do—and both booklets will be sent you by return mail.

J. N. ANDERSON
Immigration Agent
ST. LOUIS
MO.

MISSOURI PACIFIC IRON MOUNTAIN

Table of Contents

	Page
AUTOMOBILE	
Auto on the Farm	23
Cost of Up-Keep of Horse and Motor	19
Motor Trucks	19
BOOK TABLE	
New Books and Bulletins	42
COMBINATION FARMING	
Dairy and Fruit Farm	28
Porter, H. C.	28
EDITORIAL	
Improved Machinery	12
Does the Farmer Lack Business System?	12
GARDENING	
Staking Tomatoes	35
Tomatoes for Canning	35
HORTICULTURAL SOCIETY MEETINGS	
Arkansas	22
INSECTS AND DISEASES	
Fighting the Melon Aphis	51
ORCHARD MANAGEMENT	
Building Up the Old Orchard	33
Intercropping the Orchard	8-23
Pruning the Orchard	10
Training Fruit Trees	20
OUR HOME FOLKS	
"Hard Times" Prize Story	44
Plain Woman's Experience	44
Useful Items	44
Homo Canning Suggestions	44
Appendicitis	45
Traveling with Children	45
The Social Hour	46
Saving Work	47
Labor Saving Devices	5
Needs of the Farmer's Wife	5
Model Home in Utah	6
Fireless Cooker	6
Dinner Wagon	6
Vacuum Cleaner	6
Advice to Farmers' Wives	6
POULTRY	
Buff Rocks	50
Feeding and Care Incubator Chicks	50
Goslings, Experience with	4-48
Record in National Egg Contest	49
MISCELLANEOUS	
Apple Box Holds a Bushel	38
Apple Packing School	35
Book Farmers	43
Associations' Shortcomings	16
Central Sales System	16
Crop Bulletin Discontinued	11
From a Missouri Farm	27
Hale Gets Expert Packer	35
Gas Engine, Value of	47
Keeping Books	18
Marketing Problem, The Real	9
New Organization in North Carolina	9
New York Market	56
Notes from Colorado	15
Notes from Morrisania	30
Poor Country Roads Expensive	38
Rogue River Valley	7
Summer Pruning	20
Taylor, E. P.	21
Things to Do in April	13
Trees of Washington	34
Value of the Gas Engine	29
Vineyards in Michigan	36
Waterworks for the Farm	43
Weak Crotches in Trees	38
Western Methods in East	35
White River Association Formed	22
QUESTIONS AND ANSWERS	
Fertilizer for Strawberries	40
A Spray Pump Query	40
Light in Relation to Insects	40
What Varieties to Plant	40
Why Do the Leaves Stay?	40
Frost Cracks in Trees	40
How Should Old Trees Be Cut?	41
Nitrate on Strawberries	41
What to Do for Aphis	41
Mixing Varieties	41
Transplanting Four-Year-Old Tree	41
Kind of Legume to Use	41
Alternate the Blocks	41
Berries for Colorado	41
Pecans and Orchard Grass	41
Left Over Arsenate	42
SMALL FRUITS	
Berry Notes	32
Cost and Profit in Strawberries	26
Gooseberries in Kentucky	33
Himalaya Berry? What About the	26
Planting Strawberries	24
Shipping Strawberries	14
Strawberry Cultivator	15
Strawberries, Pierce City Packing	14
Strawberries Will be Scarce	23
When to Plant Strawberries	25
SPRAYERS AND SPRAYING	
Another View of Spraying	39
Custom Spraying in Missouri	39
Some Facts for Missouri Apple Growers	12
Spraying Machinery; Its Use and Abuse	37
Spraying, The Cash Value of	12

HOPEDALE NURSERIES
BEST FOR RESULTS
HOPEDALE, ILLINOIS

We have no "Patent Right" on honesty, nor do we claim to be the only honest nurserymen. Many nurserymen are not careful enough to pack the sorts called for. Our 48 page descriptive catalog explains our methods of propagating and doing business. It has a chapter on spraying and much practical cultural information. It is Free. Send for it today. Hopedale Nurseries, Dept. M. Hopedale, Illinois.

Secure and Profitable

These essentials of a good investment are combined in our

7% First Mortgage Gold Bonds

Paying Interest of 7%

payable every six months in coupons attached, which can be collected through your local bank. Issued in denomination of $100, and fully protected by the entire assets of the company. These bonds are dated July 1, 1907, and run ten years.

Write for full details and booklet.

THE FRUIT-GROWER
St. Joseph, Missouri
Capital Stock, $100,000.00, Fully Paid

PRUNING Book by Professor Bailey. Tells everything about pruning. You need it. Price $1.50. The Fruit-Grower, St. Joseph, Mo.

In your correspondence with advertisers please mention The Fruit-Grower

Index to Advertisements in the April Issue of The Fruit-Grower

Page

Agents Wanted
Nat'l Co-operative Real Estate Co. 56

Alarm Clocks
Big Ben 11

Automobiles
Avery & Co....20
Case, J. I., Co....23
Firestone Rubber & Tire Co....20
Goodyear Tire & Rubber Co....27
Hudson Motor Car Co....2d cover
Hupp Motor Car Co.... 8
International Harvester Co....24
Owen, R. M., & Co....back cover
Owen, R. M., & Co....17
Stayer Carriage Co....25
White Auto Co....26

Books
Fruit-Grower (Books)....51
Fruit-Grower (Books)....18

Buggies and Harness
Elkhart Carriage and Harness Mfg. Co. 24
Mutual Carriage & Harness Mfg. Co. 24
Ohio Carriage & Mfg. Co....33

Cans and Canning Supplies
Home Canner Co....46
Raney Canner Co....45

Canning Outfits
Home Canner Co....46
Northwestern Steel & Iron Wks. 10
Raney Canner Co....45
Stahl, F. S. 44

Cider Presses
Hydraulic Press Mfg. Co....38
Monarch Machinery Co....38

Commission Merchants
Coyne Bros. 33

Cream Separators
De Laval Separator Co....29

Cultivators
Barker Mfg. Co....42
Bateman Mfg. Co....29
Burmeister, Chas. 34
Cutaway Harrow Co....14
Deere, John, & Co....33
Johnson, W. A. 40
Light Draft Harrow Co....24
Mendenhall, E. G....40
Schaible Mfg. Co., The....14

Dynamite
Aetna Powder Co....19
DuPont, E. I., Powder Co....28

Farm Lands and Real Estate
Address L. B., No. 54....55
Address, Sec'y Commercial Club 55
American Investment Ass'n....56
Banks & Adcock....55
Box 434, Lynchburg, Va....55
Cleveland, Frank P....55
Coe, Curtis P....55
The Commercial Club....55
Diehl, G. P....55-55
Foote, W. 55
Fredericks Realty Co....55-55
Fruit-Grower (Morrisania) 31
Grand Valley Fruit & Water Co. 11
Gridley Land Co....55
Green & Milwee....55
Hanson, J. D. S....40
Hawley, F. R., Co....55
Hickman, W. T....56
Henderson, L. F....55
Holloway, D. 55
Hopkins, G. E....55
Houston, J. S....55
Information Bureau 55
Irvine, James M....55
Jantha Plantation Co....42
Kansas City, Mex. & Orient Ry. 40
Loretto Realty Co....55
McBurney, B. F., & Co....40
McDonald Land & Mining Co...40
McNeil, F. R....55
Magie, H. 55
Mississippi Farms Co....7
Mo. Pac.-Iron Mt. Ry. Co....57
Monte Vista Realty Co....55
Moore, W. J....55
Nicholson, J. W....55
N. & W. Ry....36
Olcott, H. H....55
Olinger & Knapp....55
Parsons, A. N. 55
Polling, Theodore 55
Real Estate Salesman Co....55
Reeve, W. S....55
Reller, Dr. 56
Renshaw, C. W....55
Rogue River Land Co....39
Roseburg Commercial Club....55
Rowell Fruit Co....55
Sanderson, S. O. 55
Schwab, James E. 56
Shasta Land Co....55
Shenandoah Valley Apple Lands Co. 55
Skinner, J. H., & Co....41
Smith, W. G., Owner....55
State Board of Agriculture....40
Thomson, R. H. 55
Weber, R. H. 55
Webster, E. C. & J. F....55
Welch J. Hart....55
Wilson, Jot M., & Son....55
Woods, Samuel B....55

Farm Levels
Bostrom-Brady Mfg. Co....40

Farm Publications
Fruit-Grower (Better Fruits Club) 34
Fruit-Grower (Wonder Knife)...45
Fruit-Grower (All Fruit Club) 46
Fruit-Grower (Subscription) ....3d cover
Intermountain Fruit Journal....40
Kansas City Journal....14
Missouri & Kansas Farmer....38
Profitable Farming 51
A. I. Root Co....3d cover
San Jose Magazine Co....56

Fertilizers
Commercial Acid Co....25-56
Myers, Wm. S....36

Food Products
Postum Cereal Co....7-8-9

Fruit Packages
Bacon & Co....33
Carrier, F. A....23
Crosby & Son....56
Nelson, L. J., & Co....13
New Albany B. & B. Co....23
Pierce Williams Co....23
St. Louis B. & B. Co....22
Washington Mill Co....23

Page

Gasoline Engines
Gray Motor Co....41
Motsinger Device Mfg. Co....41
Otto Gas Engine Works.... 7
United States Engine Works .... 3d cover

Gates
Rowe Mfg. Co....50

Grading Machines
Baker Mfg. Co....33
Glide Road Machine Co....33

Help Wanted
Burrow, R. W....56
Entomoid Chemical Co....56
Hillside Farm, The....56
Huecker, Fred 56
Sales Association 56

Incubators and Poultry Supplies
Barnes, H. E. & C. S....55
Bob White Co. 55
Boldts Poultry Remedy Co....55
Box 275 56
Chamberlain, W. F....48
Conkey, The G. E., Co....55
Connisclife Poultry Farm....55
Essex, Robert, Incubator Co....48
Golden Rule Incubator Co....55
Hackett's Gape Cure....48
Johnson, M. M. 49
Knudson Mfg. Co....48-56
Ohio Marble Co....48
Omen, C. G....55
Perfection Metal Brood Coop Co. 48
Philo, E. R....49
Raisall Remedy Co....48
Sanborn, Dr. Nathan....55
Torge, A. 49
U. U. Co. 55
White, E. F....56
The Wyandotte Refineries Co....55

Implements and Tools
Allen, S. L., Mfg. Co....25
Automatic Awl Co. 29
Automatic Jack Co....28
Kouns, Wesley 19
Stewart, Skinner Co. 29

Insecticides
Ansbacher, A. B....37
Bowker Insecticide Co....35
Devoe & Raynolds 22
Hemingway London Purple Co....32
Horticultural Chemical Co....22
Jones-Post Merc. Co....35
Merrimac Chemical Co....25
Micbelson Kill 'Em Quick....29
Pratt, B. G., & Co....22
Sherwin-Williams Co....36
Taylor Instrument Co....32
Vreeland Chemical Co....35
Wahl Supply Co....14

Ladders
Bacon & Co....33

Lighting Systems
Detroit Heating & Lighting Co...41
Electric Storage Battery Co....45
Steel Mantel Lamp Co....41
Union Carbide Co.... 9

Live Stock
Stodghill, J. D. 56
Wickersham, G. H....56
Worley, Clyde M....56
Falkey, Luther 56
Bowersox, M. L., Co....56

Lumber and Building Materials
Chicago Wrecking Co....41
North American Construct. Co. 3

Motorcycles
Hendee Mfg. Co....36

Nurserymen
Allen, W. A., & Sons....56
Bauer, J. A....38
Beck & Beck....56
Berrydale Experiment Gardens...42
Boonville Nurseries 38
Brunswick, M., & Co....37
Cathcart, Alva 56
Flansburg & Potter Co....38
Crand Mere Nurseries 56
Hawkeye Nurseries 56
Hill, D., Nurseries Co....38
Hoffman, C. W. 56
Holsinger Bros. 38
Holsinger Bros. 56
Hopedale Nurseries 57
Knight, David, & Son....42
Koell, W. H....56
Krider, Vernon H....56
Louisiana Star Nurseries....56
McNair, C. W., Nurseries....56
Mallory, N. E....56
Mathis, Albert 56
The Newburys 56
New Haven Nurseries....38
Randall, Alton E....56
Seligman Plant Co....38
Sheboygan Ginseng Gardens....56
Shenandoah Nurseries 42
Slaymaker & Son....38
Stirdivant, Geo. 56
Sunnyslope Nurseries 38
Turkey Creek Nurseries....56
Turner, Zachary 56
Whitten, C. E., Nurseries Co...13
Winfield Nurseries 51-56

Paints
Century Mfg. Co....21
Chase, O. L., Paint Co....12
Lowe Bros. Paint Co....21
National Lead Co.... 9
Standard Paint Co....48

Pianos
Jenkins Music Co....46
Townsend & Wyatt D. G. Co....46

Poultry
Adams, C. D. 53
Adams, H. C. 52
Aldrich, E. L....52
Alleshouse, J. A....54
Ames, Henry 53
Andrews, E. L....54
Anthony, Joseph 54
Armann, James A....52
Arnold, C. C. 52
Arrington, E. E....53
Ashmead, Thomas G....54
Ashmead, T. J....55
Ayers, J. A. 53
Bailey, B. M....54
Bailey, Enoch 52
Baldwin, Mrs. Anna H....52-52
Barber, T. 52
Barden, E. H. 53
Bardsley, Walter 53
Barlow, A. G. 55
Barnes, Dr. F. E....53
Barrie, R. 55
Bartlg, Henry 52

Page

Bear, Arthur 55
Bear, J. W....53
Beaumont, Floyd S....54
Bechtner, Paul 52
Beechler, L. 52
Biggerstaff, Mrs. Z. T....55
Bender, James A....54
Bennett, Edwin A....54
Berger, H. C....54
Bergey, J. A....54
Bettis, Mrs. Clarence J....52
Betts, Claudia 52
Black Satin Minorca Yards....52
Blake, Geo. F....52
Bliem, Samuel S....52
Bliss, D. J....54
Blum Hatchery 55
Boldig, Mrs. L. 52
Boomgaarns Farms 53
Boss, Robert C. 53
Bowman, Roy 53
Branch Valley Poultry Yards...53
Brasfield, Nat L. 52
Brendle, H. S....53
Brenneman, D. S....55
Briggs, Edgar 52
Brill, F. R....53
Briner, W. H....53
Brock Bros. 52
Broeker, Robert 53-53
Brogden, Thomas 52-52-53
Brooks, Edgar 52
Brooks Sanitary Hennery....53
Brookside Poultry Farm....52
Brown, Mrs. Chas....52
Brown, Fred 55
Brown, Harvey 53
Bruen, D. L....54
Bruns, John F....53
Buckel Poultry Yards....54
The Buff Rock Poultry Farm....53
Bullene, W. L....52
Bullington, F. 53
Bullis, A. J....53
Burford, Mrs. Jess....53
Burk, A. P....55
Burke, T. H....53
Burnett & Doolittle Hatchery Co. 55
Buss, Edward 53
Byrd, Mrs. J. N....53
Caldwell, H. A. 53
Carlile, J. C. 55
Carnahan, Mrs. Frank....52
Carpenter, F. E. 54
Carson, A. L. 52
Carter, E. E. 52
Cavanagh, Miss Edith....53
Cederdahl Poultry Farm....54
Cedar Hedge Poultry Farm....53
Chalker, W. S., & Sons....54
Clark, M. A., & Son....53
Clark, R. M. 52
Clark, Will 54
Clymer, C. Henry....53
Cocklin, W. J., & Son....54
Colby, C. 53
Cole, John, M. D....52
Cole's Poultry Farm....52
Connisclife Poultry Farm....54
Conradt, C. G....52
Cook, Mrs. Ethel....53
Coons, Frederick 53
Cowan, W. E....53
Craft, Dr. W. H....55
Cronk, N. P....53-54
Crosby, Fred 52
Crosby Bros. 54
Crystal Orpington Farms....52
Crystal Poultry Yards....53
Culp, Frank S....54
Cunningham Bros. 52
Curtis, Will 54
Custer, Oliver 54
Dahl, Wm. C....52
Damann, F. J....54
Davidson, M. H....53
Davis, A. V....54
Davis, Harold E....52
Davis, S. H....53
Dawson, C. C....53
Densmore, C. E....55
Deuterman, Mrs. Ferne....53
Doolittle, L. A. 53
Doom, Mrs. 54
Dougherty, W. H....53
Dowell, Mary 54
Driggs, James A....53
Dunbar, Dradie 53
Duncan, G. D....54
Dunning, S. G....52
Durby, H. S....54
Edgedale Poultry Plant....54
Edgewood Farm 53
Egbert, W. W. 52
Eisenman, J. C....52
Elam, W. A....55
Elk Ridge Poultry Yards....55
Ellerman, Geo. W....54
Ellerman, Wm. 52
Ellison, W. A....52
Ells Poultry Farm....53
Empire Poultry Yards....54
Emwood Farm 54
Enterprise Yards 55
Eshbach, Mrs. E. E....55
Essig, A. 52
Evans, Doctor 53
Evitts, L. 52
Fairholm Poultry Farm....53
Failing Poultry Farm....54
Fairview Poultry Farm....55
Falkenberg, C. 53
Farley, W. C....54
Frakes, Wm. 54
Fenn, A. A. 52
Ferrlii, L. J....55
Fetrow, Robert 54
Fewtrell, Thomas 53
Finney, Alton 52
Firestone, J. B....52
Fisher, G. F....53
Fisse, Henry, Jr. 53
Foote, Wm. C....52
Forecastle Farm 54
Forest City Cornish Yards....52
Forest View Poultry Farm....53
Fosselmann, P. A....53
Foster, Fred 55
Fowler, Miss Susie M....53
Fowler Egg Farm....52
The Fowlers 53
Fox, Franklin 54
Frantz, O. C....52
French & Hepp....55
Fritz, J. W....55
Fries, Max 54
Gallatin, J. L....55
Galt, Louie B....54
Garbee, John 54
Garnett, F. L....52
Gault, J. E....54
Gee-Whiz Fruit and Poultry Farm 52
Geiger, Mrs. I. B....54
Giles, R. E....54
Glenoak Poultry Yards....54
Gluesenkamp, A. W....54
Golden Gate Farm 52
Goldenrod Poultry Farm....52
Grand State Poultry Yards....53
Granite State Poultry Yards....52
Graves, O. W....54
Gray, D. E....54

Page

Green, Horton 52
Green, J. E. I....55
Griffith, Paul & Gordon....55
Griffith, Dr. W. I....53
Grimes, O. F....54
Gruebbel, Dr. 53
Hafner, John J....54
Hall, B. F., Jr....54
Hall, D. E....54
Hamilton, J. C....54
Hamilton, Mrs. W. S....54
Hammond, Ward L....52
Hanman, Mrs. Henry 54
Hanna, Mrs. Ad....53
Hanna, L. B....53
Harbison, W. H....53
Hardin Poultry Farm....53
Hardman, W. H....52
Harris, Lee 55
Harshbarger, Mrs. Wm....55
Hart, Mrs. E. M....53
Hart. W. D....52
Haskin, H. H....53
Haynes, T. 53
Heabler, K. J....54
Heaps, Warren T....53
Hedberg, Carl J....53
Heilman, Frank 52
Heinrichs, Wm. A....52
Heintz, Will 52
Heitkamp, Henry 53
Heilman, Gerhard F....54
Herron, C. C....55
Hess, William A....53
Highland Poultry Farm....52
Higley, T. F....54
Hill Crest Duck Farm....55
Hillcrest Farm 52
Hillhurst Farm 55
Hochstedler, J. A....52
Hodges, J. C....55
Hoffman 54
Holscher, John 53
Honey Creek Poultry Farm....54
Hoogerhyde, John M....54
Hooper, L. J....52
Hopkins, E. E....55
Hoppe, William F....54
Horton's, Dr. J. D., Poultry Farm 52
Hosmer, C. W....52
Howland, R. W....53
Hoyle, The, Poultry Farm....52
Huecker, Fred 52
Huested, Mrs. Charles E....53
Hummer, C. 53
Hurlbert, N. E....52
Hurley, S. L....53
Ideal Poultry Farm....54
Ingraham, C. G....52
Innes Crystal White Yards....53
Irons, J. H....53
Jackson, Prof. F. H....54
Jackson, Mrs. T. A....53
Jacobs, Mrs. Ivan 55
Jaqua, Louella E....54
Jones, Mrs. D. C....54
Jones, Mrs. Fred 53
Jones, Mrs. S. A....54
Joseph, J. B....53
Kahler, B. F....54
Kalvin, Dr. Henry M....54
Kapphahn, C. J....55
Kean, Thos. H....53
Keefer, J. H....53
Kellerstrass Poultry Farm....53
Kelley, H. D....53
Kelen, Fred 52
Ketcham, R. S....52
Kilpatrick, Frank 54-55
King, G. M....53
Kirkbride 55
Kitchen, John H....55
Kitchen, Joseph H....52-53
Knapp, Arthur L....52
Knipple, Robert G....53
Knodle, B. C....54
Knox, C. W....55
Koppstein, A. W....53
Kraus, Karl 53
Krebill, A. D. 54
Krichbaum, C. 52
Kucera, Fred 54
Lafreniere 55
Lamson, H 52
Lang, C. F....52
Lang, H. M....54
Larason, Edwin M....52
La Rue, R. S....54
Latcham, S. V....53
Laughlin, Charley 52
Lebaum Poultry Yards....54
Le Fevre, J....53
Leclere, Ed 53
Lehmkuhl, George 53
Leidy, M. H....54
Le Master, I. A....54
Lily White Poultry Farm....52
Little, Mrs. 53
Little Sioux Poultry Yards....53
Long Hiram 54
Lorenz & Co....54
Loutzenhiser, H. 53
Lykens Valley Farm....53
Lyman, Judson 53
Mack's Poultry Farm 54
Mahle, G. C. 52
Maple Leaf Poultry Yards....52
Martin, J. H....53
Mason, C. C....54
Mathews, Vernon 53
Mattison, Joseph E. 52
F. McConuell, Burt....55
McCormick, W. H....52
McDavitt, Leo W....53
McElwain, G. H....54
McKean, Roland 52
McKibbin, John 54
Medaris, Troy 53
Meek, Frank 55
Meizer, Wili H....53
Merihew, L. E....52
Meyers, E. A....53
Michelson, Martin 55
Mierley, John 54
Miller, K. I 52-53-55
Miller, M. L....54
Minkel & Co....54
Minorca Farm 52
Mitchell, G. A....55
Moehri, Geo. B....52
Mohr, S. K....54
Moore, Mrs. Fred 53
Morgan, B. F 55
Mountain View Ranch....53
Mumpower, Mrs. Lizzie....52
Murphy, Ed B....55
Muskoday Farm 55
Myers, Mrs. Clyde....54-54, 55-55
Myers, Mrs. J. W....55
Nafziger, A. 52
Newcomb, F. S....52
Newell, J. 55
Niebur, C. A....52
Norman, Calvin 54
North, D. P....53
Oertel, Fred 54
Ohio Valley Hatchery 55
Oldfield, Mrs. M. F....54
Orchard Knob Poultry Farm....55
Orpington Farm 53
Orr & Dick 54
Overbeck, Benjamin 53

Page

Oveson, Mrs. Christian 54
Page, C. A....54
Page, S. H....53
Palmer, Charles M....52
Pavey, B. 54
Peck, Frank F....53
Peerless Poultry Farm....52
Peerless Yards 54
Penfield, H. J....54
Peterson, Aug. 53
Peterson, Otto, Jr. 54
Peterson, Wm. A....54
Pfile, Henry 48
Pfister, Mrs. S. W. 53
Pifer, W. C. & Son....52
Pinta, George 53
Plymouth Rock Squab Co....55
Pochling, H. G....54
Porter, M. D....53
Poultry Sprague 54
Powell, C. D....53
Pratt, Ada 53
Premium Poultry Farm....55
Prospect Poultry Farm....52
Purfield, William 53
Quincy Heights Poultry Farm...52
Ramsey, Mary 55
Red Journal 54
Reed, Bernard 55
Reed, Dr. M. B....54
Rehm, Alden 54
Reiff, Joseph 52
Rembinger, W. E....53
Reneville Poultry Yards....54
Rice, W. E....52
Riddle & Sons....53
Reid, Phil 52
Reinhart's Farms 55
Rhodaround Farm 53
Riddle & Sons....54
Roberts, Burt 54
Roberts, Forest 54
Roberts, James 54
Robinson, James L....53
Rogers, E. A 54
Rose, Mrs. Daisy....52
Roseland Poultry Yards....53
Rose Lawn Poultry Yards....53
Roth, Otto M....53
Rowland, Frank 54
Ruark, W. P....53
Ruble, Harry E....48
Rudd, Herbert 53
Russell, W. S....53
Ryan, Mrs. Mary....55
Saiyards, R. S....53
Schaffner, Wm. F....54
Schmidt, John J....52
Schmied Bros. 54
Schnably, Gilbert W....53
Schoenbohm, Rev. F....54
Schowe, Henry, Jr. 55
Schuman, Ed J....53
Seibert, D. W....52
Seidel, Wm. 52
Seiple, Monroe 54
Seymour, A. H....54
Shallcross, S. F....52
Shanander, Selma 54
Shaw, A Carroll....54
Shaw, Ellsworth 55
Shaw, F. L....54
Shaw, Joseph 54
Sheka, W. H....55
Sheldon, D. L....55
Shelly, P. G....54
Shepard, Mrs. Geo. 54
Sheppard, Cecil 52
Sherpy, Mrs. O. Y....53
Shirk, Henry Y....54
Shirley, Sylvester 52
Sinsabaugh, A. M....53
Skillman, John 54
Skinner, J. M....53
Smith, A. Franklin 54
Smith, Herbert 54
Smith, Oscar 53
Snowball Poultry Yards....54
Snyder, H. A....53
Snyder, Jas. R....55
Snyder, W. C....53
Souder, H. A....54
Southern Poultry Farm, Wade Hampton, Prop. 54
Southern Slope Poultry Farm....55
South Kenton Poultry Farm....55
South Side Poultry Yards....54
Southworth, C. W....54
Spence, J. F....54
Spitze, George L....53
Stackhouse, C. M....52
Standard Bred Poultry Farm....53
Stark, O. F. 53
Starr, A. E....53
Steldinger, Walter 53
Stevenson, Marion 53
Stick, Harley R....54
Stock, Verne D....54
Stoughton, Geo. A....52
Strayer, D. A....53
Street, L. R....55
Sunnyside Poultry Farm....54
Sunny Slope Nursery 53
Swedburg, N. E....53
Sweet, Charles 54
Teasley, Mrs. D. C....48-55
Teegarden, H. A....52
Texas Orpington Farm....53
Thurman, Wm. 53
Tietsort & Stutzman 53
Tritlin, E. & J. W....54
Turman, Dr. Walter....53
Turner, F. G....53
Turner, Z. T....52-54
Tuttle, John 54
Ulrich, Aug. 52
Valley View Farms 54
Valley View Farms....53
Valley View Poultry Farm....55
Van Cleave, J. W....55
Vanderbilt, C. K....55
Vanderhoof, R. H....53
Van Rennen, D. 52
Van Rensselaer, L. D....54
Verbeckmoes, Art. W....54
Voirol, Herman C....55
Vreeland, Mrs. W. H....53
Waldron, Edward F. 54
Walnut Grove Poultry Farm....52
Walnut Hill Hatchery....55
Wardwell Poultry Yards....53
Ware, Frank 53
Watertown Poultry Farm 54
Watson, Ira 54
Webb, E. M., & Son....54
Weber, Julius W....52
Welch, Harry 53
Wells, E. E....52
Wells, M. E....52
Wells, Oscar 52-55
Wenz & Mackensen 54
Wheatland Farm 53
White, A. H....54
White, Chal 52
White Feather Farm....54
White, S. A....52
Whitney & Son....54
Wilcox, J. R 53
Williams, A. D....54
Williams, V. T....53
Willis, J. H 52-54
Wilson, Ralph 55
Wingo, George W., & Son....53

Page

Wise, Julia E....55-55
Wood, F. F. 53
Wood, Mrs. John H....52
Wood, W. S....52
Woodruff, Dr. R. O....54
Wooldridge & Grape 55
Wright, W. F., Sr....53
Wyandotte Ranch 54
Yaggy, Henry 55
Yates, J. W....55
Yocum, E. G....54
Yarmond Poultry Farm....52
Yoder, Levi D....55
Yost Co. 54
Young, Theo. B....54
Zimmer, C. H....52
Zurburg, C. H....54

Pruning Tools
Ideal Pruning Saw Co....14
Monarch Pruner Co....14

Railway Companies
K. C., Mex. & Orient Ry....40
N. & W. Ry....36

Roofing Materials
Barber Asphalt Paving Co....33
Century Mfg. Co....29
Standard Paint Co....48
Missouri Pacific Ry. 57

Seedsmen & Florists
Beck & Beck 56
Cowee, Arthur 56
Box 12, West Grove, Pa....56
Field, Henry, Seed Co....14-38-43
Fox-Hall Farm 56
Halbert, H. A....56
Iowa Seed Co....38
Perry Nursery Co....56
Riebel, F. M....56
Ross Brothers Seed House....14
Salzer, John A....38
Shorewood Farms 48
Shorewood Farms Co.... 4
Teas, E. Y., & Son....56
Thompson, Mark T....56
Thornburn, J. M, & Co....42

Situations Wanted
Address G. M., Fruit-Grower 56
Orchardist, care Fruit-Grower...56

Sprayers & Appliances
Aspinwall Mfg. Co....26
Bateman Mfg. Co....16-32
Brown, E. C., & Co....32
Cushman Mfg. Co.... 4
Deming Co. 16
Field Force Pump Co....16
Friend Mfg. Co....12
Flanders Mfg. Co.... 4
Goulds Mfg. Co....37
Hamilton Rubber Co....32
Hurst, H. L., Mfg. Co....35-37
Jones-Post Merc. Co....35
Morrill & Morley 32
Myers, F. E., Bros....22-41
Nebraska Apple Culture Co....56
New-Way Motor Co....15
Orchard Supply Co....56
Peppler, Thos. & Son....32
Rochester Spray Pump Co....32
Simons, H. J....56
Simplex Mfg. Co....22
Smith, D. B., & Co....32
Stahl, Wm., Sprayer Co....32

Stump Pullers
W. Smith Grubber Co....28

Talking Machines
Victor Talking Machine Co....47

Tanks
Columbian Steel Tank Co....13

Tree Doctors
Davey Tree Expert Co....34

Veterinary
Lawrence Williams Co....41
Young, W. F....41

Wagons, Wheels, Etc.
Electric Wheel Co....28
Split Hickory Wheel Co....14

Washing Machines
Altorfer Bros. Co....44

Water Supply Systems
Fairbanks, Morse & Co.... 4
Missouri Water & Steam Supply Co. 43
United Pump & Power Co....43

Well Drilling Machines
American Well Works....40
Keystone Well Works 40

Windmills
Missouri Water & Steam Supply Co. 33
Stover Mfg. Co....19

Wire Fencing and Gates
Advance Fence Co....50
American Steel & Wire Co....28
Brown Fence & Wire Co....50
Coiled Spring Fence Co....50-50
Interlocking Fence Co....38
Kitselman Bros. 50
Kokomo Fence Machine Co....50
Manlove Gate Co....40
Ottawa Mfg. Co....50
Tiger Fence Co....50
Up-to-Date Mfg. Co....48
Ward Fence Co....48

Miscellaneous
Alcock Porus Plasters 45
Barber, H. L....56
Brandt's, M. L., Cutlery Co....13
Burnham-Munger-Root Co. 41
Chandlee & Chandlee....3d cover
Clipper Lawn Mower Co....38
Colman, Watson E. 32
Cox, J. & Co....56
Cutler, True 56
Dale Watch Co. 41
Dorn, J. C....41
Ehlers, W. 56
Failing Poultry Farm....56
Fruit-Grower (Bonds) 20
Fruit-Grower (Labels for Fruit Packages) ....3d cover
Gardner Office Supply Co....41
Gregory, James A....56
Harvey Spriug Co....34
Kiger, Orvil 56
Kirk Vinegar Test 6
Marlin Firearms Co....28
National Co-operative Realty Co. ....3d cover
Old Dutch Cleanser 44
Oxford Co-operative Bureau....56
Piapao Laboratories 41
Rife Engine Co 40
Ruhman, A. 56
Sanders, H. J....56
Schmitz, Mrs. Gustav 56
Shepherd & Campbell....56
Stimson, Harry P. ....3d cover
Strite Governor Pulley Co....40
U. S. Cutlery Co. 26
Weaver, W. D....56

It Pays to Advertise in Every Issue of The Fruit-Grower

HOTEL
CUMBERLAND

NEW YORK

Broadway at 54th Street

Near 50th Street Subway Station and 5.rd Street Elevated.

Broadway cars from Grand Central Terminal and cars from new Pennsylvania station pass the door.

New and Fireproof

Best Hotel accommodations in New York at reasonable rates

$2.50 with Bath, and up

Ten minutes' walk to thirty Theaters. Excellent Restaurant. Prices moderate.

Send for Booklet

HARRY P. STIMSON
Formerly with Hotel Imperial

Publications on Bee Culture

The numbers listed below are but a sample of what we can supply in the line of booklets and books of more than ordinary interest.

The Bee Keeper and Fruit Grower. A 15-page booklet giving actual facts regarding the value of bees to fruit, and showing how bee keeping may be doubly profitable to the fruit grower. Fruit growers are realizing as never before the necessity of having honey bees in close proximity to their blossoming trees. Free.

Gleanings in Bee Culture. A semi-monthly magazine, the leading exponent of bee culture in this country. To new subscribers we will furnish it six months for 25 cents. Ask to have your subscription start with the March 15th issue, which is a special bees and fruit number and will give you some valuable facts about these two industries.

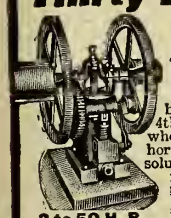
The A B C of Bee Culture. A complete textbook of over 600 pages. Fully illustrated and containing full information on every subject relating to this most fascinating industry. Price $1.50, postpaid.

Catalogue of Bee Keepers' Supplies. The 1912 edition is particularly interesting and attractive. It will tell you how best to make a start with bees and give prices on all equipment necessary. Will be mailed free on request.

The A. I. Root Company
Box 199 MEDINA, OHIO

STOP! STOP! STOP!

Thirty Days Trial of



United States Bonded Engine. Burns gas, gasoline, kerosene, distillate. Consider these

12--Advantages--12

1st, Pays for itself in fuel saving in short time. 2nd, No violent vibration. 3rd, Greatly reduced bulk. 4th, Easily portable; mounted anywhere. 5th, Every engine part and horse power guaranteed. 6th, Absolutely frost proof. 7th, Positively most economical running engine made. 8th, Only engine with pulley on both sides. 9th, Small pulley on cam shaft, for very slow machines. 10th, Perfect Lubrication, cooling & ignition 11th, Lowest cost engine in the world. 12th, Made by reputable firm, 60 years in business.

2 to 50 H. P. Wonderful New PumpingEngine
Send postal today for Illustrated Catalog.

United States Engine Works
1529 Canal St., Chicago, Ill.

I WILL MAKE YOU PROSPEROUS

If you are honest and ambitious write me today. No matter where you live or what your occupation, I will teach you the Real Estate business by mail; appoint you Special Representative of my Company in your town; start you in a profitable business of your own, and help you make big money at once.

Unusual opportunity for men without capital to become independent for life. Valuable Book and full particulars FREE. Write today.

NATIONAL CO-OPERATIVE REALTY CO.
M144 Marden Building
Washington, D. C.

E. R. MARDEN
President

In writing advertisers please mention The Fruit-Grower.

PATENT YOUR IDEAS

$9,000 offered for certain inventions. Book "How to Obtain a Patent" and "What to Invent" sent free. Send rough sketch for free report as to patentability. Patents advertised for sale at our expense in Manufacturers' Journals.

Patent Obtained or Fee Returned
CHANDLEE & CHANDLEE, Patent Att'ys
Established 16 Years
1046 F. Street, Washington, D. C.

FRUIT GROWING IN ARID REGIONS. A New Book, by Paddock and Whipple. $1.50. The Fruit-Grower, St. Joseph, Mo.

Advertisers like to know what paper is giving the best service for money expended. You can aid them materially if when writing, you mention The Fruit-Grower

Himalaya Plants Winter Killed.

Letters from Fruit-Grower subscribers indicate that the new Himalaya berry is not hardy enough to stand such a winter as the one we have just passed through. In ordinary seasons it may be all right, but will not stand what our Iowa friends call a "test winter"—and that's the kind just experienced.

Mr. John S. C. Jackson, Republic, Mo., says that in 1910 he set some plants of Himalaya berry, and they grew over twenty-six feet that season. He secured ninety tips, which were planted in spring of 1911. That same season he picked two quarts of fruit from two plants set the previous year. Last season all plants made a rank growth, and all winter-killed. He says that every plant killed to the ground. Canes lying on the ground where they may have had slight protection from snow and soil seem all right, but practically all the wood of all plants is dead. He thinks the plants make too rank a growth to be hardy in this climate.

Mr. Jackson reports that some of his raspberry plants have been badly injured by the winter, while others are unhurt. Early Harvest blackberry, ordinarily a tender sort, came through in fine condition. Cherries have lost half their fruit buds, and peach buds are all dead, he reports.

What has been the experience of others with Himalaya berry? It certainly was tested in the past winter, and some idea can now be had as to its hardiness.

Where Everyone Loves Gardens.

In Japan every one loves gardens, knows gardens and makes gardens. The children amuse themselves with toy gardens instead of mud pies, and model relief maps in the sands of school playgrounds. In the recent wars the soldiers, after long marches, amused themselves by making little home landscapes before their tents. In more remote times emperors and shoguns abdicated and joined or established monasteries in Kioto, that they might the better meditate upon the eternal truths, and enjoy gardens of their own designing. Priests, nobles and court ladies all observed the conventions and practiced the rules of landscape art.

Of the making of gardens and illustrated garden books there was literally no end in the leisured centuries before the restoration.—From Eliza Ruhamah Scidmore's "The Famous Gardens of Kioto" in the April Century.

Perry Water Systems for Farm Homes.

The Perry system for supplying water for country homes works on a different principle from the ordinary pneumatic system. The Perry system simply stores compressed air, which is used to force water from the source of supply through the pipes in the building. Water is fresh at all times, therefore, and there is no chance for sediment to be deposited in the storage tank. And, of course, where the water is forced from the cistern or well just as needed in the house, the supply is always fresh and cold.

It is said that over 4,000 of the Perry water system are now in use, with the greatest of satisfaction to users. The advantages of having fresh water at all times are obvious, and, too, with air stored in one tank, water can be drawn from two different sources if desired. For instance, drinking water can be drawn from a well or spring, and water for bathroom and laundry purposes can be taken from a cistern.

With modern water systems installed in farm homes, country life will be much more enjoyable and the work of housewives greatly lessened. These systems can be so cheaply installed that there is no excuse for any farm home being without this source of comfort to every member of the family.

Ask your neighbors to subscribe for The Fruit-Grower. They'll thank you.

Save Money *and* Save Bother at the Same Time

THE way to do this is to send $2 for three years' subscription to The Fruit-Grower. By so doing you will save $1, you will have the matter out of the way—and, besides, you will get a copy of The Fruit-Growers Guide-Book absolutely free as a premium.

Now is the time to get the greatest good from The Fruit-Grower. You can find in every issue reminders of work needed to be done, with reference to articles which tell just how to do this work. During the winter you plan work for the summer months, but The Fruit-Growers' calendar of work to be done comes just at the right time, the facts are presented in just the right way.

Send $2.00 for Three Years' Subscription

You are going to renew, anyway. Why not send $2 and have your name in good standing on our subscription list for three years? By sending your renewal now you will get your copy of The Fruit-Growers Guide-Book at once, and it will be of great help during the coming season.

The editor of Country Life in America says this is a real business book, one to be carried in the hip pocket of your overalls, with your pruning shears, so that it will be available for reference when you are out in the orchard or field. That's just what the book is for: To be of real, practical service to fruit growers and gardeners.

Don't put it off. Send your $2 now and get this great book free with your renewal. You can't lose, but will be saving money and trouble.

The Fruit-Grower
Subscription Dept. ST. JOSEPH, MO.

Labels for Fruit Packages

The kind which go hand in hand with fancy packs and indicate quality at first sight.

You cannot afford to misrepresent your fruit by using a cheap looking label.

Take up this matter at once with our printing department, before the harvest is on, so that you will have time and also afford us ample opportunity to get up just what you want. We have one, two, three and four-color cuts of many varieties of choice fruits, and also are prepared to make to your order, on short notice, special designs, giving distinction and individuality to your particular brand. Let's work out this label proposition now. Write today.

The Fruit-Grower Printing Dept. St. Joseph, Missouri

My 24th Model

By R. E. Olds, Designer

Reo the Fifth is the 24th model I have created in 25 years. It embodies the best I know. It marks the limit, I think, in motor car engineering. It is My Farewell Car.

Not for $1,055

This car was not built to sell for $1,055. The price was undecided until the car was done.

And I consider this price, in the long run, impossible.

Our factory is immensely efficient—a model plant. It has everything known in labor-saving machinery.

Its output is enormous.

And we save nearly 20 per cent in our cost by confining our output to only one chassis.

We can give more for the money than others. We want to and will. But we can't long continue this initial price on Reo the Fifth, I fear.

Price Not Fixed

So this price is not fixed. It is based on exceptionally low cost for materials, and on ideal conditions.

Our contracts with dealers all provide for advance.

So Reo the Fifth must not be judged by this altruistic price. I ask for comparison with the highest-priced cars of equal power and size.

My Ideal Car

Reo the Fifth marks my ideal of a car.

It is not my creation—it is my compilation of the best that all men have wrought out.

It has big margins of safety. It has exceptional strength where cars often show weakness.

For the best I have learned in these 25 years is the folly of taking chances.

Nickel and Vanadium steel of unusual size are used where the strains are greatest.

More Roller Bearings are used than in any other car of its class. In fact, there are only three ball bearings in the whole car, and two are in the fan.

Unusual Tests

Inspection in this car is carried to extremes. The steel we use is analyzed.

The magneto is given a radical test. Only two makes that I know will stand it.

The gears are tested in a crushing machine of 50 tons' capacity.

The carburetor is doubly heated, to deal with low-grade gasoline.

All to know that this car, under any condition, will justify the faith that men have in me.

A Luxurious Car

I have also learned that one's pride in a car depends on appearance largely. So I give you that in overflowing measure.

The wheels are large, the tonneau is roomy, the car is overtired.

The body finish consists of 17 coats. The upholstering is deep. It is made of genuine leather, filled with genuine hair.

The lamps are enameled. The engine is nickel trimmed.

No car can be given more class, style or finish than you find in this Reo the Fifth.

New Center Control No Side Levers

In this car we bring out our new center control — our cane-handle control.

All the gear shifting is done by a slight move of this handle in each of four directions.

There are no side levers, so the doors in front are as clear as the tonneau doors.

Both brakes are operated by foot pedals. One pedal also operates the clutch. All is so easy, so convenient, that wives and daughters will operate this car.

This arrangement permits the left side drive, heretofore possible in electric cars only. The driver sits as he should sit, close to the cars which he passes, and on the up side of the road.

You will find these new features in no other car.

The Wanted Size

Reo the Fifth, in size and power, typifies the standard car. It is not too large or too small.

The power is sufficient yet economical. The moderate weight saves tires.

Nearly all motorists of wide experience now favor cars of this size, weight and power.

So in every respect I believe that Reo the Fifth marks the utmost that I can accomplish.

Ask for the Book

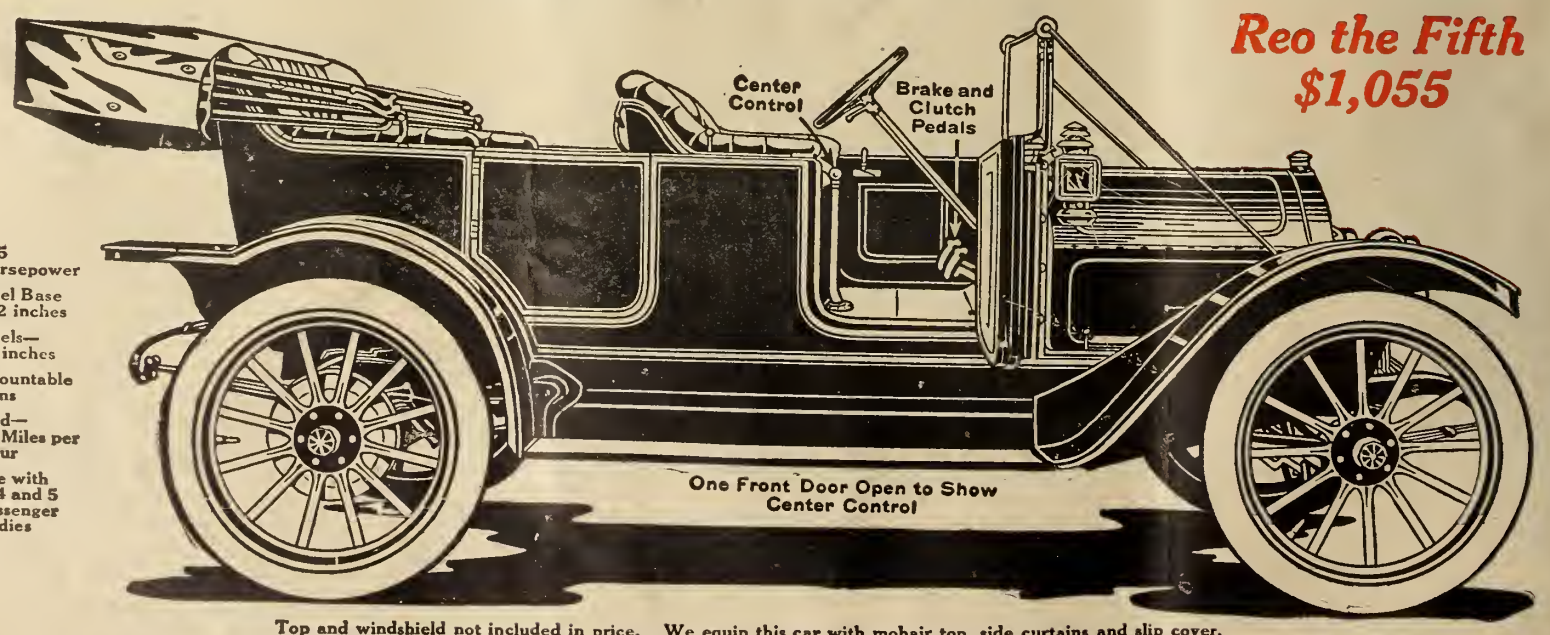
Our book shows the various bodies. It pictures and describes every detail.

Ask us now to mail it, and we will tell you where to see the car.

R. M. Owen & Co. General Sales Agents for Reo Motor Car Co., Lansing, Mich.

Canadian Factory, St. Catharines, Ontario.

Reo the Fifth $1,055



30-35 Horsepower
Wheel Base 112 inches
Wheels—34 inches
Demountable Rims
Speed—45 Miles per Hour
Made with 2, 4 and 5 Passenger Bodies

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip cover, windshield, gas tank and speedometer—all for $100 extra. **Self-starter, if wanted, $20 extra.**

534.05
WE

"The National Farm Magazine"

Vol. 23 No. 5 MAY, 1912

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

Copyrighted, 1912, by The Fruit-Grower, St. Joseph, Mo.
Title Registered in U. S. Patent Office.

A Red Mark on the Wrap
shows that your subscription has
expired. See notice marked Page

BUILDING MATERIAL PRICES ABSOLUTELY SMASHED!!

SEND US YOUR LUMBER BILL FOR OUR ESTIMATE

THE WORLD'S BARGAIN CENTER

We buy supplies at **Sheriffs', Receivers',** and **Factory Sales,** besides owning outright saw mills and lumber yards. Usually when you buy your building material elsewhere for the complete buildings shown in this advertisement, it costs you from 50 to 60 % more. By our "**direct to you**" methods we eliminate several middlemen's profits.

Every stick of lumber and every bit of building material offered in this advertisement is guaranteed brand new and first class; as good as you can purchase from anyone anywhere.

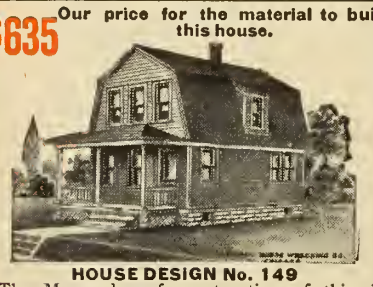
You run no risk in dealing with us.

$493 Our price for the material to build this house.

HOUSE DESIGN No. 111

Here is a neat, cozy, little cottage that can be built at the minimum of cost under our guaranteed building proposition. Size, 23 ft. 6 in. wide by 33 ft. Five rooms and bath. **All the comforts desired by home-loving people.** Extra large porch. Convenient interior. For the price it is impossible elsewhere to secure a home with so many excellent features.

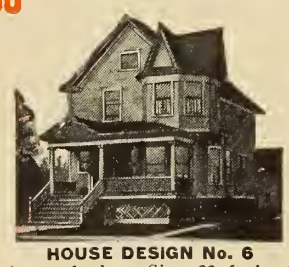
$635 Our price for the material to build this house.



HOUSE DESIGN No. 149

The Mansard roof construction of this design enables the owner to utilize all space to the best advantage and get the very most to be had for the money. Size, 21 ft. wide and 28 ft. deep; six rooms, bath and basement. **This design offers more convenience than many larger and higher priced houses.** Is constructed of the very best materials at a magnificent saving.

$698 Our price for the material to build this house.



HOUSE DESIGN No. 6

This is our leader. Size, 23 ft. by 33 ft. 6 in.; 7 rooms and bath. There has never been a design offered that can be built in so economical a manner with less material to produce satisfactory results and a general effect of elegance than this house. **Has satisfactorily been built more than 400 times** during the last two years. A beautiful home at a splendid money-saving price.

$835 Our price for the material to build this house.

HOUSE DESIGN No. 130

Size, 25 ft. 10 in. x 29 ft. 6 in.; eight rooms and bath, pantry, vestibule and large hall. A square, solid, substantial construction. **All space is advantageously utilized.** The Colonial windows and porch columns are distinctive features. For convenience and artistic arrangement, general elegance of appearance, and low price, this house is unequalled.

CHICAGO HOUSE WRECKING COMPANY
THE GREAT PRICE WRECKERS

NEW LUMBER ONLY. SAVE 30 TO 50 PER CENT

Now is the time to get our prices on lumber or building material. Do not hesitate to send us a list of your wants, whether it is lumber or mill work, complete house, barn or corn crib, or a plan of your own that you wish developed. We have the best Lumber Yard in the United States, experienced Architects, and can give you unequaled service in shipment, quality, finish and design. We are the only concern in the United States that has all the building material right here at Chicago where you can come and see it loaded, and from which point IMMEDIATE SHIPMENT can be made. We can furnish everything from a common board to the finest Quarter-Sawed Interior Finish, including Mill Work, Doors, Mantels, Colonnades, Side Boards, etc.

SEND AT ONCE for Our Special Building Material Catalog No. 1034—The Greatest Material Book Ever Offered

2,000,000 SHINGLES SPECIAL SALE

The following special prices on Standard Brand Shingles are made to readers of this paper only. Shingles guaranteed absolutely the equal and better of any similar brands on market. Do not delay. These are the lowest prices ever quoted. They are so low that we must reserve the right to refuse orders when this lot is sold.

ORDER WHILE THEY LAST

Lot FF22-1—The Best 5/2 Clear Wash. Red Cedar, per 1000, $3.75
Lot FF22-2— " " "A" " " " " " $3.15
Lot FF22-3— " "6/2 6 inch Clear Butt" " " " $2.64

CORRUGATED ROOFING
Per Square $1.25

Roofing Prices Smashed.

Metal roofing is superior to all other coverings. A fact proven absolutely and conclusively by 100 years of actual experience. We carry a complete stock of all styles.

Here is a roofing offer that has never before been equalled. We have 5,000 squares of Corrugated Iron Roofing sheets all 22 x 24 x 1¼ in. corrugation. Strictly new first-class that we offer at $1.25 per square Free on Board Cars at Chicago. At this price we do not pay the freight, but if you will write us for our Great Roofing Offer, we will make you Freight Prepaid Prices lower than ever offered in the history of roofing material.

Our stock includes painted and galvanized. We can furnish it in flat, corrugated, standing seam, "V" crimped, brick siding, beaded ceiling and in ornamental fancy ceiling. In fact we can furnish your every want in the covering line.

A hammer is the only tool needed in putting on all grades but the standing seam. We give you without cost with every order for 3 squares or more a handsome serviceable crucible steel hammer that ordinarily retails from 75c to $1.00. Write to-day for our Great Complete Roofing Catalog, and our latest Roofing quotations.

"PREMIER" HOUSE PAINT
Per Gallon $1.08

Mr. V. Michaelsen, Supt. of our Great Paint Dept. is probably the best known paint man in the world. His picture has appeared on millions of gallons of cans. He is our guarantee of quality. Our Ready Mixed "Premier" Brand of Paints are made under a special formula and will give the best service and satisfaction. Our prices range from $1.08 to $1.21, depending upon quantity.

Our "Premier" Barn Paint is an ideal protection for barns, roofs, fences, outhouses and all general purposes. This is a paint in which **Mr. Michaelsen** has put all his personality. Comes in green, maroon, yellow, lead, red and slate. 82c

In 1 gallon cans, per gallon .....
In 25 gallon cans, (½ barrel), per gallon 72c
Write today for Our Great Color Card and prices.

$37.50 BUYS COMPLETE BATHROOM OUTFIT

Here is an outfit that is good enough for any home. It is strictly A No. 1 and first-class in every particular. The bath tub and lavatory are white porcelain enameled over iron. The closet is a syphon acting low down outfit. It is our lot No. 5-AD-33.

Our handsome Plumbing Catalog lists many other outfits ranging in prices from **$26.30 to $92.50.**

We will furnish all the Plumbing material needed for any of the houses shown in this advertisement, including one of the bathroom outfits described above, besides a one piece roll rim white enameled kitchen sink, with white enameled drain board, a 30 gallon range boiler and all the necessary pipe and fittings, and all material of every kind to complete the entire plumbing system, including all fixtures, furnished with iron pipe connections for the sum of $83.95

READY ROOFING, PER SQUARE 85c

Our Rawhide Roofing is the highest grade roofing at the lowest price ever offered. It has a foundation of tough fibre texture so substantially prepared that it is well-nigh indestructible. Every foot carries our iron-clad guarantee to be absolutely right.

In addition to our high grade Rawhide Roofing, we offer for a limited time 10,000 squares of our **Ajax Brand** of Ready Roofing at 85c per square. It is put up 108 square feet to a roll. Price includes large headed nails and cement sufficient to lay. While it is practically the same as our Rawhide Roofing, it does not come in continuous lengths; maybe two or three pieces to a roll: of course that does not affect the quality. Our price for this Ajax Brand, 1 ply, is.. 85c

This price includes freight to Illinois, Indiana, Iowa, Wisconsin, Ohio and Michigan. **Write today for free samples.**

HEATING PLANTS

We will save you 30 to 50% on a modern steam, hot water or hot air heating system. A modern heating system is now within the reach of all. We have hot water heating plants for modern homes all the way from **$100 up.**

By following our simple plans and instructions, you can install your own material, thus **cutting out the expense of plumbers and steamfitters.** This together with the great saving we afford you on the material itself insures a saving of 30 to 50%.

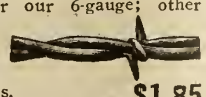
MONEY SAVING HARDWARE OPPORTUNITIES

Complete, wrought steel, copper finish front door set. **Artistic, attractive design.** Size, 4¾x3¼; Mortise lock complete. Price, per set..... $1.40

Complete wrought steel, antique copper finish plated front mortise lock 3¾x3¼. One key and one pair of knobs; two escutcheons with screws. Per set..... 48c

GALVANIZED WIRE Per 100 Pounds $1.25

This is our price for Smooth Galvanized Fence Wire, known as Wire Shorts. It comes in various lengths, put up 100 lbs. to the coil. $1.25 is our price for our 6-gauge; other gauges in proportion.



We offer brand new Galvanized 2 pt. Barbed Wire put up on reels, containing about 100 lbs. Price per 100 lbs..... $1.85

We can furnish this also in 4 point at the same price; also in painted at **$1.50** per 100 lbs.

Better order now while these remarkably low prices exist.

26 Inch Square Mesh Hog Fencing per Rod 15 Cts.

Here is a bargain such as has never been offered. A heavy weight new Galvanized, well built hog fencing, suitable for general purposes at 15c a rod. Other sizes at equally low prices.

Crimped Wire for Re-Inforcing.

We can furnish No. 9 Galvanized Crimped Wire in lengths required for re-inforcing purposes. Price per 100 lbs..... $2.25

Write for our Wire and Fencing Catalog. Tells all about our Samson's Woven Wire Fencing. Also quotes low prices on Barbed Wire, Smooth Wire, and tells about Lawn and Garden Fencing; describes gates and posts.

IRON PIPE AND FITTINGS

Rejuvenated Pipe, in random lengths, complete with couplings suitable for gas, oil, water and conveyance of all liquids. Sizes ⅜ inch to 12 inch.

1 inch, per foot..3c. 1¼ inch, per foot..3½c.

Send us specifications and we will quote for your exact requirements. Also a complete stock of Valves and Fittings.

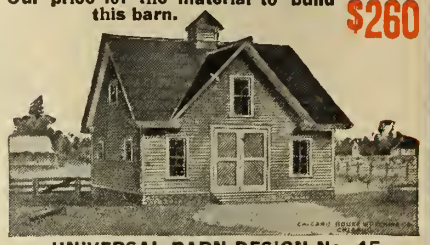
Our Binding Guarantee Protects You

Our capital stock and surplus is over $1,500,000.00. Our 19 years of honest dealing guarantees absolute satisfaction. Any material not up to our representation may be returned at our freight expense both ways and **money refunded in full.**

Our wonderful spring building offer sets a new pace in the building world. Never before have such remarkably low prices been published.

Our stock includes practically every manufactured article. Besides building material we have a complete stock of Dry Goods, Clothing, Boots and Shoes, Furniture, Household Goods, Groceries—in fact everything needed in the home, on the field or in the workshop.

Our price for the material to build this barn. **$260**



UNIVERSAL BARN DESIGN No. 45

A combination city and suburban barn, size 26 ft. 8 in. by 30 ft. long. Will accommodate 4 horses and leave a carriage room 15 ft. by 30 ft.; ample room on second floor for storage of hay or fodder. Excellent material and construction throughout, double hung windows, sliding doors, both sides. Plenty of ventilation. Price includes stable partitions. Material for 2 in. thick floor $39.00 extra. Same barn as above 16 ft. by 24 ft. $178.00.

Our price for the material to build this barn. **$580**

OUR JOIST FRAME BARN No. 221

Size, 36 ft. by 48 ft. Height to top of roof, 38 ft. 6 in. **The most practical and serviceable barn ever designed.** No heavy timber in the entire structure. Self-supporting roof. Easily built. No joists in hay-loft. This design represents strength, rigidity, economy of construction, and is absolutely dependable and substantial. Write us for more complete information.

Our price for the material to build this barn. **$620**

OUR "STAR" BARN DESIGN No. 270

The Stockman's Paradise. Size, 53 ft. wide by 80 ft. long, 24 ft. to comb. **An ideal barn for farmers raising stock** on a moderate scale; balloon type. The hay-mow is on the ground floor and above the grain rooms on each end of the barn. Cattle stalls on one side of the hay-mow; horse stalls on the other. Excellently ventilated in every part. A practical barn well built of guaranteed first-class material, and will give excellent, all around satisfaction.

Our price for the material to build this barn. **$956**

ROUND BARN DESIGN No. 206

Size, 60 ft. in diameter and 16 ft. high to plate. Has 14 sides, each side 14 ft. A 16 ft. Silo in the middle, same being 36 ft. high and will hold 160 tons of silage. Hay capacity, 65 tons. **Will accommodate 100 head of cattle.** The many and excellent features offered by this construction, the high grade materials furnished by us, and our extremely low price makes this a barn bargain worthy of thorough investigation.

FILL OUT THIS COUPON 399

Chicago House Wrecking Co., Chicago.

I saw your ad in the **Fruit-Grower**

I am interested in

Place an X in square opposite book you want sent free.

Building Material Book	☐	Paint Book	☐
Plan Book	☐	Wire List	☐
Roofing Book	☐	Iron Pipe	☐
Plumbing Book	☐	Acety. Lighting	☐
Heating Book	☐	Concrete Mach.	☐

Name.....

Town..... County.....

State..... R. F. D..... P. O. Box.....

ANY OF THESE PRICE WRECKING BOOKS SENT ABSOLUTELY FREE!

PLAN BOOK

Upwards of 100 medium price houses, barns and other designs shown. Each design represents beauty, utility, substantial construction at the lowest possible price.

This Valuable Book Free.

ROOFING BOOK

This book explains all about metal roofing, ready roofing and all other styles. Tells how to apply same in the most economical and satisfactory manner. Quotes lowest prices on highest class material.

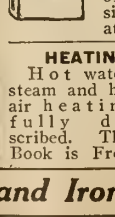
Sent Free.

BUILDING MATERIAL BOOK

The greatest book on Building Houses ever sent free. Tells all about our wonderful stock of Lumber, Sash, Doors, Roofing, Hardware, Plumbing, and Heating.

Write For It Today.

PLUMBING BOOK



A complete education in plumbing so you can equip any building of any style or size and save at least 50 %.

HEATING BOOK

Hot water, steam and hot air heating fully described. This Book is Free.

PAINT BOOK

A book showing actual colors, 40 shades to select from. Informs you fully regarding application to get lasting results. Every quotation **a saving of from 30% to 50%.** Tells all about painting and painters' supplies.

Free Paint Book.

CHICAGO HOUSE WRECKING CO., 35th and Iron Streets, CHICAGO

THE FRUIT-GROWER

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Volume 23 | ST. JOSEPH, MISSOURI, MAY, 1912 | Number 5

LEWISTON, IDAHO, NOTES

Hotbed Covers—Leveling Ground For Irrigated Garden—Marketing Suggestions

On February 6th we took rhubarb plants out of the field, putting some of them in the hothouse, some in the attic next to the flue and some in the cellar. Those which were put in the hothouse were set on the fermenting manure, and covered with a box. In three weeks' time the shoots from the roots in the hothouse were nearly a foot long; on the roots in the attic the shoots were about five inches long while those in the cellar had just started.

We filled a bench in the hothouse with rhubarb roots and covered them with dirt, thinking they would grow better as they would be more like they would be when out in the field. But that is where we made a big mistake, as we lost nearly all of them, the fermenting manure under them causing them to rot. We should have placed them on top of the soil, as they could have been better exposed to the air. So much for experience.

Hotbed Covers.

We have the hothouse planted with tomatoes, cabbage, peppers, egg plant, celery, and lettuce, while in a cold frame we are growing some cabbage plants. These will grow more slowly than those in the hothouse, but they make stockier plants. The best cover we ever found for hotbeds is made from the heavy sacks that English walnuts come in. We get these from the groceryman, at a reasonable price. These sacks are ripped down the side, and then sewed together, enough of them to cover the hotbed. When ripped open these sacks are a little over six feet long, just right to cover a six-foot sash, and so heavy and warm that it takes a hard freeze to injure anything under them. We have enough of these sacks to cover six or seven fourteen-foot hotbeds and cold frames.

We intend to plant a block this year with lettuce for the purpose of determining what returns we can get from a given area. This land that is to be planted to lettuce has been heavily manured, and as soon as dry enough it will be given a good plowing, harrowed several times, and then be ready for planting. Every few weeks we expect to make a new planting of lettuce, filling at each time the space made vacant by the plants which have matured.

We find that it pays, in a semi-arid country like this to pulverize the soil well in the spring before it dries out. By following the plow with the harrow and working the ground smooth and fine we can go to that same ground two months later, with no rain falling on it, and find the soil sufficiently moist near the surface to germinate the seeds of pumpkins, corn, melons and the like. But if this same soil is allowed to lie for a few weeks just as it is turned up by the plow, it will dry out so that no matter how many times it is harrowed and planked it will be full of small, dry clods. Then, in order to get anything to germinate in such soil one must go to the expense of irrigating the land before the seeds are planted. This causes the soil to puddle so that it is never so good. In a block that we irrigated before planting, cantaloupes never made half the yield that others did on land that was moist enough to germinate the seeds without the early irrigation.

Transplanting melons from the hothouse to the field has never been a success for us. It sounds nice to read about the possibilities of transplanting melons, but according to our experience it is a waste of time and effort. Melons started in boxes, are raised in a protected place, and after setting them in the field they dry out and die in the wind. A few may possibly pull through, but as for us such plants have produced nothing but culls and were no earlier than those not transplanted. Our best results with melons has been to wait until the ground became warm before planting the seeds. One season we were the last in our neighborhood to plant melon seeds, but we were among the first to have melons on the market.

In setting out tomato plants, we find that it pays to set them deep. We have had success with even tall spindling plants, by laying them in a furrow and plowing the soil over them, leaving only the tops sticking out. One year we transplanted spindling plants that were two feet tall, and with flowers and small fruit. These were set in holes about a foot deep and tied to stakes to keep them erect. The plants grew without a setback, and we were about the first to have home-grown tomatoes on the market.

In handling tomatoes we find that it pays best to pick the fruits a little green, say about two days before they are ready to use. When picked fully ripe, they lose their attractiveness after setting in a grocery for a day or so before they reach the consumer. In the fall we have taken green tomatoes, wrapped each fruit in paper and put them in the attic, and had ripe tomatoes up to Christmas.

OUR FIRST CHURCH BUILDING

Year before last we saved some of our best potatoes out of the heaviest producing hills, and last spring planted them side by side with some dried up, shrivled culls we hand intended feeding to the cow. While these potatoes were growing and at digging time an outsider would not have known which row was which. About the heaviest yielders we had last year were some odds and ends which we planted in the missing places where young gooseberries had been set.

Instead of planting the Alaska peas, we shall in the future use the small, wrinkled varieties, such as the American Wonder. These are sweeter than Alaska, have a stocky vine and yield heavily. Sweet corn we find to be a paying crop, as good roasting ears are in demand almost everywhere, and the fodder tastes mighty good to the cow. It increases the milk yield and comes in at a time when green food is not very plentiful, especially on a ten acre farm. As we feed the stalks of sweet corn while it is still green, we take the plants out by the roots, and thus have no roots left to bother with later.

We planted a few lands to wheat and clover, and after the wheat is gone we should have some late pasture for the cow. In a year or so this clover will be turned under for fertilizer.

Sales during the month of February, from the ten acres of our land amounted to $77.60. Included in these sales were milk, eggs potatoes, spinach, green onions, parsnips, and roots of rhubarb, asparagus, raspberry, dewberry, currant and gooseberry. If our supply had been larger we could have sold a lot of spinach and green onions, and they should have been planted during the last of August. But we were busy with other things at that time and had only enough vacant ground for a few rows of each. It keeps one guessing to get things planted so as to come in at just the right time, but it pays to have some produce to dispose of in the late winter and early spring, when there is usually little or nothing coming in for the average farmer.

April 1.—We planted our first garden this year on March 26, the latest date for starting since we have been in Idaho. Soil was too wet to work earlier, but no complaint is offered, for this moisture will help wonderfully in developing the garden.

We planted our peas in double rows, so they will help support each other, leaving a wide alley to permit cultivation and harvesting the crop. In planting beets a few radish seeds were scattered along to mark the rows; the latter come up quickly and then we cultivate with the rake attachment on the garden cultivator, to keep soil moist and mellow.

Onions, lettuce and spinach planted last fall are well out of the ground and should mature early. The onions which are up now should be ready to put on market early next fall.

On March 26 we sold the first of the lettuce transplanted from the field to the hothouse, the crop bringing 25 cents per pound. The plants were transplanted from the field on February 19, and took a little over five weeks to mature; the house is heated by manure and a longer time is required than if the house were heated by steam. At the time these plants were transplanted lettuce seeds were scattered over the bed, and these plants are two inches high and will be ready to use by the time the first crop is gone.

This year we are sewing our paper pots, instead of pinning them, as we did last year, and like the change. We cut the paper in strips about six inches wide, fold them together and sew them, and with scissors cut them to any desired height. These make fine pots for plants which are to be transplanted to the open field. After being transplanted in these pots the plants should be shaded for about a week and then may be placed in full sunlight; when set out in the field they can be well wet and it is not necessary to put water in the holes in which they are placed.

Leveling Ground for an Irrigated Garden.

Where a garden is to be irrigated the soil should be quite smooth, and our method of smoothing the soil may be of interest. We took two pieces of lumber 2x6 inches and twelve feet long and spiked three pieces five feet long at right angles between them, sloping the latter back a little, so they would not carry too much soil. A man riding this leveler made a good load for two horses. We went over the garden two or three times in different directions, and the soil was nicely smoothed. In irrigating small truck like onions, where a small furrow is used, a very small unevenness of the soil will cause the water to flood the low places, and when once part of the land is flooded it is necessary to wait until it all dries before cultivation can begin.

Now that we keep the chickens up, we spade under part of their grain rations every day and compel the fowls to dig it out, and they seem to enjoy having something to do. We will soon plant sunflowers on the south and west sides of the pen, to furnish shade in the summer and food in the winter.

Marketing Suggestion.

In marketing our produce we endeavor to sell all our crop to one or two stores, and like this plan much better than peddling the produce from

OUR NEW BUNGALOW CHURCH

house to house. In selling to reliable stores the price realized is nearly as great and a lot of time can be saved. Where one sells to the stores it is necessary to raise lots of truck, to go regularly, and to let the dealers know they can depend on you.

Our New Church.

On Sunday afternoon, August 2, 1908, a Sunday school was organized at our house by the Congregational district missionary, assisted by the city pastor, twenty-two persons being present. The meeting was held on the lawn, and as we did not have a room large enough to accommodate the school a neighbor offered the use of a large room in the second story of his barn.

For about a year the meetings were held there, with an occasional sermon by one of the local preachers, and later a Christian Endeavor Society was organized. In the summer of 1909 one of the neighbors leased a piece of ground and with subscriptions from the residents of the orchard tracts raised sufficient money to put up a temporary building 24x40 feet, hauling the lumber and doing most of the work himself.

In the fall of 1910 a church was organized, with six members, and an acre of ground was purchased. Plans for a church of the old style were drawn, but were not satisfactory to all concerned, and last fall a new set of plans for a building of the bungalow style were drawn up, and building operations began. Our illustrations show the first building occupied as a church and the new building just completed.

This new building is 34x45 feet, with a full basement under all. The basement contains a kitchen, furnace room, a large room for part of the Sunday school classes, for society meetings, etc., leaving the main auditorium for church services. Everybody helped and we now have a neat building to be used for religious and social meetings. The cost was about $3,500.

We have a parsonage on our acre of ground, and the land not occupied by buildings is set to fruit trees, and the fruits and vegetables from the gardens will be quite a help to the pastor when we are able to employ one.

PLANTING LETTUCE IN YOUNG ORCHARD
The trees are 20 feet apart and rows are 350 feet long. Land will all be planted to lettuce, and careful account kept of the crop

We would urge that every country community strive to have such a building as this. Even if there are only a dozen persons in the community they should get together in some capacity, and thus help to break the monotony of country life. It is a great help for older persons to meet together in this way, and it is an absolute necessity for the younger folks to have some place where they can mingle and have their social enjoyment; otherwise it will not be long before they are talking of leaving the farm and going to town.

In our community the neighbors are so anxious to mingle that the association gave a reception to the orchardists and to owners of tracts living in the city while the building was yet unfinished, and 225 persons were present. Then some young ladies from town gave an entertainment to provide dishes for the use of the Ladies' Aid Society, and so it goes. Our Sunday school has grown to sixty-three persons and is still increasing in numbers.

At our reception the program was held upstairs and the ladies served lunch in the basement. One of the speakers was the horticulturist of the land company, and he delivered an excellent address on "The Social Community," in which he said the seven factors in successful community building are as follows: (1) Schools and churches, (2) good roads, (3) soil production, (4) intelligence of the people, (5) markets, (6) suitable parks and recreation grounds, (7) beautiful homes. He believes in having recreation grounds at the country schools, such as tennis courts, baseball grounds, swimming pools, a piece of ground devoted to plants used in the study of horticulture, etc. He believes that if boys have time and opportunity for recreation they will not want to leave the farm. This seems like sound advice.

As soon as we get the ground graded, the lawn sodded and walks and drives made, we will have a building and equipment that would be a credit to any farming community. What we have done here any other community can do by hustling.

Lewiston, Idaho. J. E. BUTLER.

COFFEE HURTS

One in Three.

It is difficult to make people believe that coffee is a poison to at least one person out of every three, but people are slowly finding it out, although thousands of them suffer terribly before they discover the fact.

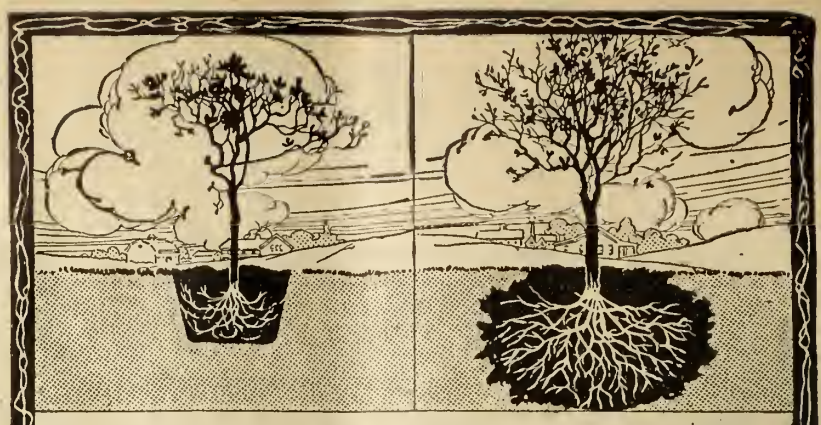
A New York hotel man says: "Each time after drinking coffee I became restless, nervous and excited, so that I was unable to sit five minutes in one place, was also inclined to vomit and suffered from loss of sleep, which got worse and worse.

"A lady said that perhaps coffee was the cause of my trouble, and suggested that I try Postum. I laughed at the thought that coffee hurt me, but she insisted so hard that I finally had some Postum made. I have been using it in place of coffee ever since, for I noticed that all my former nervousness and irritation disappeared. I began to sleep perfectly, and the Postum tasted as good or better than the old coffee, so what was the use of sticking to a beverage that was injuring me?

"One day on an excursion up the country I remarked to a young lady friend on her greatly improved appearance. She explained that some time before she had quit using coffee and taken Postum. She had gained a number of pounds and her former palpitation of the heart, humming in the ears, trembling of the hands and legs and other disagreeable feelings had disappeared. She recommended me to quit coffee and take Postum and was very much surprised to find that I had already made the change.

"She said her brother had also received great benefits from leaving off coffee and taking on Postum." "There's a reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.



PLANT YOUR TREES WITH
AETNA DYNAMITE

AETNA DYNAMITE loosens the earth for several yards around the hole and gives the tree roots a chance to breathe, develop and spread in a *healthy way*. It also burns up the earth's impurities and gives your trees a perfectly *healthy soil* to grow in.

Every *progressive* agriculturist will tell you that trees planted in this way will yield quicker and much greater results than if planted by the old spade method, which crowds and cramps the roots. If you have any doubt on the subject write, to any school of agriculture, farmers' institute or reliable farm paper.

Every prosperous and up-to-date farmer in America is using Aetna Dynamite for tree planting, ditch and drain digging, for the removal of stones, boulders and obstructive hills and the destruction of stumps on cut-over ground. AETNA DYNAMITE is putting the stump-puller out of business and saving countless thousands of dollars, as well as a tremendous amount of time and labor.

Progressive farmers all over America are writing us every day that AETNA DYNAMITE is the greatest agent for economy and efficiency on the farm that the world has ever created. It is easily handled. Just a reasonable amount of care eliminates the element of danger. And you will find, when you start to use it, that you will do without many horses and men that you are now compelled to use and pay for.

Write today for our descriptive booklets (FREE) which explain the many uses of AETNA DYNAMITE and show how expense can be turned into profit. Every farmer in the world is deeply interested. Write while you think of it. A postcard is sufficient.

The Aetna Powder Co.
General Offices, Tribune Bldg., Chicago, Ill.
For Quick Attention Address Dept. R

You Can Regenerate Old Orchards WITH
DU PONT RED CROSS DYNAMITE

By exploding one cartridge in centre of tree squares; the compact subsoil is broken up, a new water-reservoir is created, new plant food made available, and the old trees made to bear as well as ever before.

Write for Free Booklet

To learn how progressive farmers are using dynamite for removing stumps and boulders, planting and cultivating fruit trees, regenerating barren soil, ditching, draining, excavating and road-making, ask for "Tree Planting Booklet, No. 36"

DU PONT POWDER CO. PIONEER POWDER MAKERS OF AMERICA WILMINGTON, DEL.

Phelps 2 Year Guarantee

—Shows You the Biggest Selection of Buggies in America —Saves You Big Money

PHELPS' shows you more styles this year in his big book than ever before. And every buggy price saves you big money—$25 and up. Send a postal—get the Book—let Phelps talk through it to you direct—the way he has sold 150,000 farmers. Let him show you in photographs how a good buggy should be made—and what made of. Phelps knows. They're all highest grade—over 125 styles—every kind—auto seat Buggies, Surreys, Runabouts, etc.—all sold direct to user on 30 Days' Free Road Test—2 Years Guarantee. Don't you want the book? A Postal gets it. H. C. Phelps, Prest.

THE OHIO CARRIAGE MFG. COMPANY Station 46 Columbus, O.
Largest Factory in the World Selling Vehicles Direct.

Split Hickory Vehicles
On 30 Days FREE Road Test

ASPINWALL SPRAYERS

Machines to meet every requirement. Everything from Hand Sprayers to 200-gallon capacity Power Machine. Write for Sprayer catalog with valuable formulas for Spraying Mixtures. ASPINWALL MFG. CO., 325 Sabin St., Jackson, Mich.
World's Oldest and Largest Makers of Potato Machinery.

FRUIT SELLING AGENCY

Northwestern Fruit Exchange Organized to Handle Fruit of Northwestern States

Northwestern Fruit Exchange was designated as the official marketing organization for growers in Washington, Oregon, Idaho and Montana, at a meeting of its directors and representatives of cooperative interest in the four states at Portland, Ore., April 13. Joint offices will be maintained at Spokane. These officers were elected to conduct the business of the exchange:

President, R. H. Parsons, Medford, Ore.; vice-president for Oregon, A. P. Bateham, Mosier; vice-president for Washington, H. W. Otis, Reshastin; secretary, C. A. Malboeuf, Portland; treasurer and general manager, W. F. Gwin, Portland; assistant secretary and assistant treasurer, D. H. White, Portland.

The movement to amalgamate the fruit-growing interests of the Northwestern States began two years ago and has since been discussed at horticultural meetings at Portland, Prosser and Walla Walla. A committee of eleven, representing every district of the Northwest, was appointed at the Walla Walla conference in February, 1911, to outline a plan of organization with a view to solving the problem of distribution through a central selling agency.

The committee, which was headed by H. W. Otis of Peshastin, concluded its work and submitted a report at the National Apple Show in Spokane, last November. The plan embodied a working plan for local and district organizations. The matter having been thus worked out, the necessity for an effective selling machine became the next and serious point for consideration. At this juncture, the Rogue River Fruit & Produce Association initiated a plan seeking to bring about an affiliation as a nucleus of the principal fruit-raising districts in the Northwest, through a common selling agency.

The merits of the plan were so forceful as to commend it to the committee of eleven, as embracing the ideal principles of correlation between the grower and the seller. In behalf of the committee, Mr. Otis presented the Rogue River plan to the Washington State Horticultural Association at its annual convention in Clarkston, last January.

Negotiations between the co-operative leaders, represented by H. W. Otis, A. P. Bateham and L. E. Meacham, and the directors of the Northwestern Fruit Exchange, followed, with the result noted in the foregoing.

Through the agreement reached the Northwestern Fruit Exchange becomes practically a mutualized institution. Its dividends are fixed at not to exceed 10 per cent, and all unsold capital stock will be offered to growers' organizations. This provision, in connection with the fact that the Northwestern Fruit Exchange is already under the absolute control of actual fruit growers, precludes the possibility of it ever becoming an institution of private control for profit.

Provision was made also for a direct and vital contract between the exchange and the growers, whose crops shall be marketed through it by the creation of an auxiliary organization to be known as the growers' council of the Northwestern Fruit Exchange, which shall be composed of elected representatives of each association. This council will have control of all matters pertaining to the standardization of methods and contracts, and will have advisory powers.

In the working out of the new plan Spokane is recognized equally with Portland as the headquarters of the exchange, some of its departments being transferred to the capital of the Inland Empire. All the telegraphic market news will be distributed from Spokane.

Practically every fruit-growing district in Oregon, Washington and Idaho was represented in the Portland conference. Those present were: H. W. Otis, Pashastin, Wash., chairman of the committee of eleven; L. E. Meacham, Walla Walla, Wash., secretary of that body; J. F. Sugrue, Cashmere, Wash., president of the Cashmere Fruit Growers' Union, Wenatchee Valley; Fremont Wood, Boise, Idaho, president of the Idaho Horticultural Society, and director of the Northwest Fruit Exchange; W. N. Irish, North Yakima, Wash., president of the Yakima Valley County Horticultural Union and vice-president of the Northwestern Fruit Exchange; A. C. Randall, Medford, Ore., vice-president of the Rogue River Fruit and Produce Association and director of the Northwestern Fruit Exchange; K. S. Miller, Medford, Ore., manager of the Rogue River Fruit and Produce Association; A. P. Bateham, Mosier, Ore., president of the Oregon State Horticultural Society, and vice-president of the Mosier Fruit Growers' Association, and the executive officials of the exchange.

Advertising Fruit.

In his paper on "Styles in Fruit," Mr. N. T. Frame, at the December meeting of the Adams County Fruit Growers' Association at Bendersville, Pa., made a nice deduction concerning fruit marketing. After a brief discussion of the advertising campaigns that have been carried on in the development of cities and industries he pointed out how it is that fashions in wearing apparel are not made by the fashion papers, but by the manufacturers. In other words the manufacturers regulate the styles and popularize them by their advertising and publicity campaigns. But how is it with the farmers and fruit growers?

To quote Mr. Frame: "If the country communities are to turn the trade balances back to a position favorable to them they must fight the advertisers with their own fire. A few country districts have learned this. Hood River apples, for instance, sell at 25 cents a piece, not because of their superior quality, but because of the organized advertising that has educated a certain class of consumers to demand such apples at any price. Such advertising has been supplemented with proper growing and packing and all the other details of successful marketing, but exactly the same fruit without the advertising would never have made land worth several thousand dollars an acre in Hood River. Hood River has turned the trade balances in its favor, because it has made it stylish to eat Hood River apples."

Every fruit section in the world is giving better care to its orchards. The condition of fruit when it reaches the market is being improved every year. Some season we will run up against a very heavy fruit crop throughout all of the country. What will be done with the fruit then? Most of it must be sold for immediate consumption. There are not enough storage houses to hold the crop, for even a short time.

Advertising the fruit will help. Fruit eating will have to be popularized. It must become stylish for the city people to walk down the street munching on an apple or bunch of grapes. It must be made stylish to serve fruit with every meal and between meals. It must become stylish for the preacher, the policeman, the storekeeper, the banker, the machinist, the baker and everybody else to have an apple in his hand all the time.

Fruit eating and particularly apple eating can be made just as popular as breakfast foods or pork and beans. Advertising will do it. The style must be created and the fashion established. It may take a long time. It is a hard problem. United action, co-operation and printers' ink will do it. It is not a problem to be solved by one man alone. It is for the many. It is time your association, your community, your horticultural society is getting busy at creating the styles in fruit.

Adulterated Nitrate of Soda on Market.

Several cases of low-grade Nitrate havo in the past appeared on the market, and I am writing you to suggest that you advise correspondents to purchase nitrate from trustworthy dealers only. One adulterant is common salt, and sometimes salt cake has been used. Both are worthless as fertilizers and contain no plant food. It is preferable to purchase nitrate in original bags which now contain about two hundred pounds.

So far as the Chilian producers of nitrate are concerned, however, the greatest care is taken, and samples are drawn by inspectors from all cargoes before they leave the ports of Chili, and heavy fines would be imposed upon any producers who attempted to export low-grade nitrate. Salt cake residue made as a by-product in the manufacture of nitric acid, has also been used to adulterate nitrate, and in certain cases has been sold as niter-cake. This name tends to give it a false value. It is also worthless as plant food. On our part, we have done all that is possible to maintain a high standard, and that our policy will be the same in the future you may be fully assured, and I hope that you will be able to co-operate with us in helping to prevent sales of low-grade nitrate, which we would greatly deplore.

WILLIAM S. MYERS, Director.

Peaches for Sale.

Charles Oden, Hastings, Oklahoma, writes that in his neighborhood there will be about 10,000 bushels of peaches to ship, and the growers want to get in touch with some firm which will come down and pack the fruit and sell it. Those who are interested can get full information by writing Mr. Oden at address given.

Why Should a Chicken Lay a Soft-Shelled Egg?

Because, Willie, the chicken don't know how to create a hard shelled egg unless it has some food with lime in it.

So chicken-raisers often provide limestone gravel, broken oyster shells or some other form of lime.

Let the chicken wander free, and it finds its own food and behaves sensibly.

Shut it up and feed stuff lacking lime and the eggs are soft-shelled.

Let's step from chickens to human beings.

Why is a child "backward" and why does a man or woman have nervous prostration or brain-fag? There may be a variety of reasons, but one thing is **certain.**

If the food is deficient in Phosphate of Potash the gray matter in the nerve centers and brain cannot be rebuilt each day to make good the cells broken down by the activities of yesterday.

Phosphate of Potash is the most important element Nature demands to unite albumin and water to make gray matter.

Grape-Nuts food is heavy in Phosphate of Potash in a digestible form.

A chicken can't always select its own food, but a thoughtful man can select suitable food for his children, wife and himself.

"There's a Reason" for

Grape-Nuts

Postum Cereal Company, Limited, Battle Creek, Michigan

A FRUIT AND HOG FARM

Three Years' Experience on a Polk County, Arkansas, Farm—There Are Pointers Here

On January 19th, 1909, I landed at Wickes to take charge of eight hundred thirty eight acres, bought the previous summer, to be developed into a fruit and hog farm. The situation was serious indeed, land that had been cleared and cultivated, was in a badly exhausted condition for want of deep plowing and proper rotation of crops. Forty acres of timber and brush had been cut down and was yet to be cleaned up and plowed. Three miles of hog-tight wire fence to build, and a great deal of old rail fence to be rebuilt. Twelve thousand peach trees and five hundred thousand strawberry plants to be set out, corn and other crops to plant. However, we succeeded in getting through.

The season was very dry and hurt the berries and farm crops, but we lost very few of our trees. They were June buds, none larger than a lead pencil. Today many of them are four inches in diameter giving promise of a full crop of extra fine Elberta peaches, of which we expect to market at least forty cars this year. Our strawberries were planted in the same field as the peach trees in view of paying the expenses of growing the trees which they have done.

Not satisfied with shrubbing off timber and brush and having to cut sprouts three times a year for three or four years, we purchased a Hercules triple stump puller and pulled the stumps from forty-three acres of land, putting it in a cultivatable condition for deep and thorough plowing. This mixed thoroughly the leaf mold with the soil thus preventing it from being wasted by washing as had been the case by the old method of scratching the surface with the tools formerly in use in this section. While the first cost of about fifteen dollars per acre seems expensive, we found that the feeding value of the first crop of corn and peas was fully equal to this amount and the price paid for the land, which in this particular instance was eight dollars per acre.

Work Stock Ration.

Our feed crops have been corn, oats, cowpeas, clover, rye, cane, kaffir corn, and milo maize. Corn does not make as many bushels per acre here as in the corn belt of the north, but peas can be sown at the last plowing and will yield from eight to twelve bushels per acre at no extra cost except seed and seeding. The corn can be gathered, then the hogs turned in to gather the peas, and after they have done their work the pea vines and corn stalks can be plowed under in late fall or early winter. The pea, being a nitrogen gatherer almost equal to clover, puts the land in good condition for a crop the following season. Oats have succeeded with us, making about thirty-five bushels per acre of good quality. Owing to the stumps we were forced to cut them with a cradle and bind them by hand, they were stored in the barn in the sheaf, cut with a feed cutter and used to balance the ration with corn. On this ration of home-grown corn and sheaf oats, our work stock have thrived. We have had no indication of blind staggers which confronts our tie and lumber hauling neighbors, most of whom are now buying low grade hay at from fifty cents to one dollar per bale and corn chops made from number four and no grade corn costing one dollar and seventy-five cents per hundred pounds.

After cutting, oats land can be seeded to Whippoorwill peas and make a good crop which will mature before frost and can be gathered by the hogs, giving two profitable crops the same year. Red and alsike clovers thrive on land that has not been too much impoverished and this land can be supplied with the needed nutriment by growing cowpeas so that it will grow clover successfully. Winter or turf oats can be sown in September and will furnish good winter grazing. Cane makes a good hay crop or may be used for summer grazing. Kaffir corn and maize were grown on the farm in 1909 and did only fairly well. All garden crops do well, except we have not been able to grow late Irish potatoes successfully. Cantaloupes grow fine and last year we shipped ten cars from fifty acres. Under ordinary conditions we should have netted at least one hundred dollars per acre or five thousand dollars for the crop, but as every one who grows cantaloupes and is familiar with the marketing knows, last year was a very disastrous one to the cantaloupe business. Why? Because the south had a very late wet spring and cantaloupes were being planted from the north Missouri line to the Gulf of Mexico at the same time and were on the market in the same season, flooding the market at a very low price and in many instances having to be dumped, and a total loss to every one concerned in growing them. While this was very discouraging these conditions may not happen again in many years.

The Berry Crop.

Our experience with strawberries convinces us that we have a good location for them, both as to growing and marketing, located as we are midway between Tyler, Texas, and Van Buren, Arkansas, enabling us to ship to the northern markets while prices are good and avoiding the rush when northwest Arkansas and southwest Missouri get busy by turning our shipments south and getting good prices there.

Last year our last shipment of Aroma berries went to Port Arthur, Texas, and sold for two dollars and seventy-five cents per twenty-four quart crate. We sold twenty-six hundred crates during a season covering six weeks, shipping by express in small lots, and receiving a net return of $3,300. Our first berries were shipped from Wickes on April 6th, last year, and on April 16th, 1910, showing that our berry crops may begin to move April 1st to 20th. Varieties grown here are Excelsior and Aroma. A crop of twelve acres of Klondykes, grown a few miles south of Wickes, produced seventeen hundred crates, netting the grower $2,900.

Range Hog Going.

In the fall of 1910 we run eighty head of mostly late spring Duroc-Jersey pigs on peas for three months; fed them on corn for about thirty days, shipped them to Kansas City and sold them February 13th, 1911. They averaged one hundred and eighty-one pounds, and sold on the open market in competition with sixteen thousand others from all parts of the corn belt at $7.35 per hundred pounds, the top of the market in Kansas City that day and they were the only car of top hogs there, meaning that no other car of hogs brought the same high price on that date.

In the fall of 1911 we had sixty-three head of Durocs, all spring pigs except fourteen. These were run on peas about ninety days, finished on corn in the same manner as the year before, bought twenty-five head of native hogs to make up the carload, shipped them to Fort Worth, Texas, and sold them on the 17th of January, 1912. Cutting out the natives the Durocs again were the only tops, at a price of $6.50 per hundred, averaging 190 pounds each. The natives brought only $6 per hundred pounds, being around eighteen months old, and averaging 154 pounds each. This convinced me that the range hog of this section will soon be a thing of the past. These experiences prove conclusively that the old story that no Arkansas hog will fatten until three years old is an absolute and undeniable fake. L. C. WILSON.

Arkansas.

Arkansas Peach Crop Promising.

A letter from D. B. Anderson, Ozark, Ark., says that peach prospects there are most promising. Mr. Anderson acts as sales agent for peach growers of his section, and says that a bumper crop is indicated this season. He says the latest estimate of the Arkansas crop is a total of 2,500 carloads. Georgia and Texas also report good prospects, but the shortage of peaches in the Northern fruit districts should enable the Southern growers to sell their fruit at good prices.

To get heavy crops of fruit every year, judicious thinning and pruning are essentials. These, combined with such spraying as will keep the trees with healthy foliage, will go far towards eliminating the alternate fruiting habit.

The Aermotor with the automatic regulator stops when the tank is full and starts when the water is lowered 4 inches. You oil it once a week. A gasoline engine has to be started and stopped and oiled and attended almost constantly, and you have large expense for gasoline and oil. The wind is free.

We make gasoline engines (exceedingly good ones), but, for the average water supply for the home and 150 head of stock, an 8-foot Aermotor with a storage tank,—which is a necessity with any kind of water supply—is all that is needed and is by far the more economical. The supply of wind for the Aermotor is more to be relied upon than the supply of gasoline, batteries and repairs for the gasoline engine.

The cost of gasoline, oil, batteries and repairs in pumping for 150 head of stock with a gasoline engine, will buy an 8-foot Aermotor every year, and you are still to the bad the amount of time you spend over the gasoline engine.

But the gasoline engine has its place on the farm notwithstanding the fact that 100 people are maimed or killed with gasoline where one is injured by a windmill, and that 100 farm buildings are burned with gasoline where none is injured by a windmill. For the water supply, the windmill is the thing. Thousands of farmers who have done their first power pumping by a gasoline engine have become tired of it and are buying windmills. That is one reason why our windmill business increases from year to year. We can furnish you much testimony like the following:

Devine, Tex., Dec. 16, 1911.
I amsending you a photograph of one of the oldest windmills in this country—it being the first Aermotor put up in Medina County—and is used to furnish water for hundreds of head of cattle. It was put up in the year 1889 and is owned by Mr. Murdo Monroe. The only repairs this mill has ever needed are one small gear and a rocker arm, the total cost of which was $2.50. This Aermotor is still running and doing good service, furnishing water for cattle and family.
LOUIS GACONET.

Find, if you can, a statement like this regarding gasoline engines.

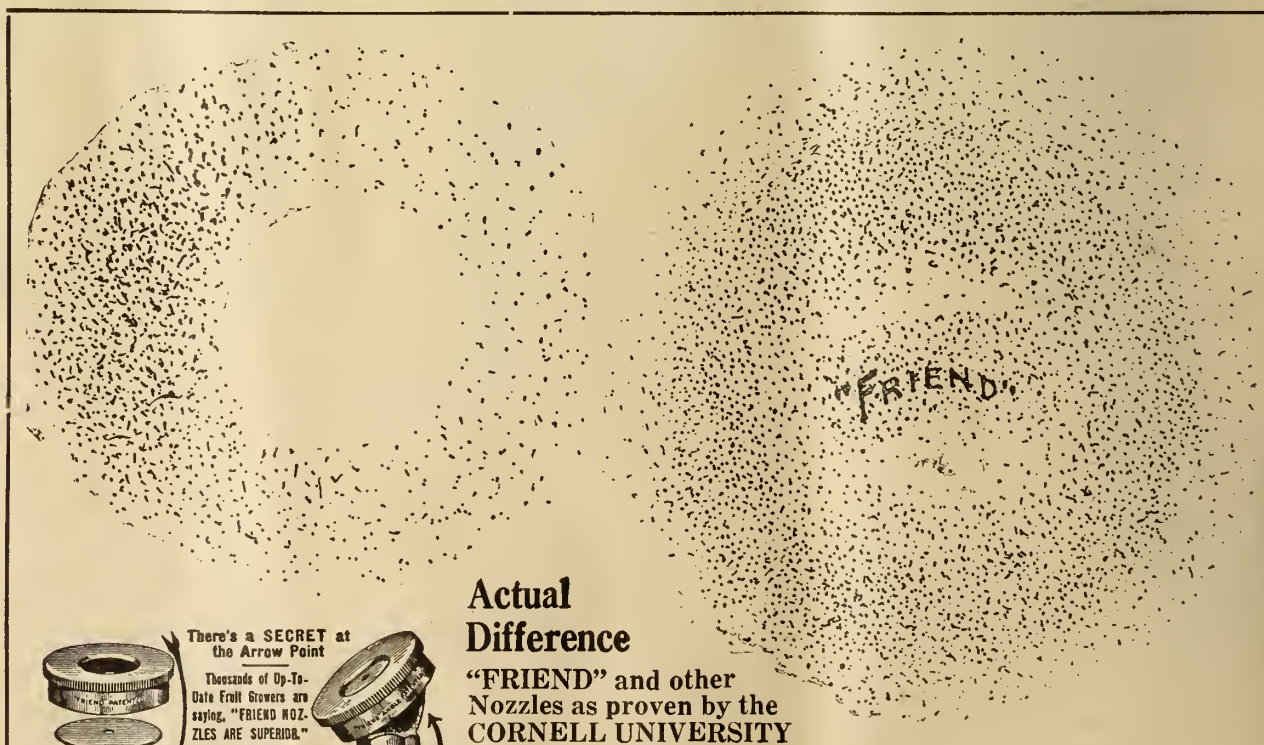
Of course, there are places where a windmill cannot be used. There you will have to use a gasoline engine, with all of its disadvantages. We will furnish for that place a small engine which costs but $37.50 complete, so it can be set to pumping in 30 minutes. Or we will furnish you a pump jack—the best made—for $5.00, to do pumping with a larger gasoline engine.

Send for catalogue giving full information about water supply. Aermotor Co., Chicago. Branch Houses: Oakland, Cal.; Kansas City, Mo.; Minneapolis, Minn.

For Boys *and* Girls

There's an offer of special interest in an advertisement on page 12 of this issue of The Fruit-Grower.

READ IT NOW



Actual Difference

"FRIEND" and other Nozzles as proven by the CORNELL UNIVERSITY SPRAYOGRAPH

Study it carefully—think about it. You will know why thousands of prominent fruit growers write us as follows:

Gentlemen:—Enclosed find $2 for which please send me two more angle nozzles immediately. A few days ago I got two of the same kind and we used them today along with —— and —— ——, and there is no comparison between them, they are certainly fine. Most respectfully yours,
Bedford, Penn., April 3. GEORGE W. KOONTZ.

You can't afford to spray with a 75c nozzle for ten minutes. The difference in results on a fruit crop might buy a thousand "Friend" nozzles. Unprincipled dealers are everywhere buying cheap nozzles and selling them for "Friend." The name will be found on every nozzle. You can't go wrong with your eyes open.

AS EVER THE FRUIT GROWER'S "FRIEND" MFG. COMPANY, GASPORT, N.Y.

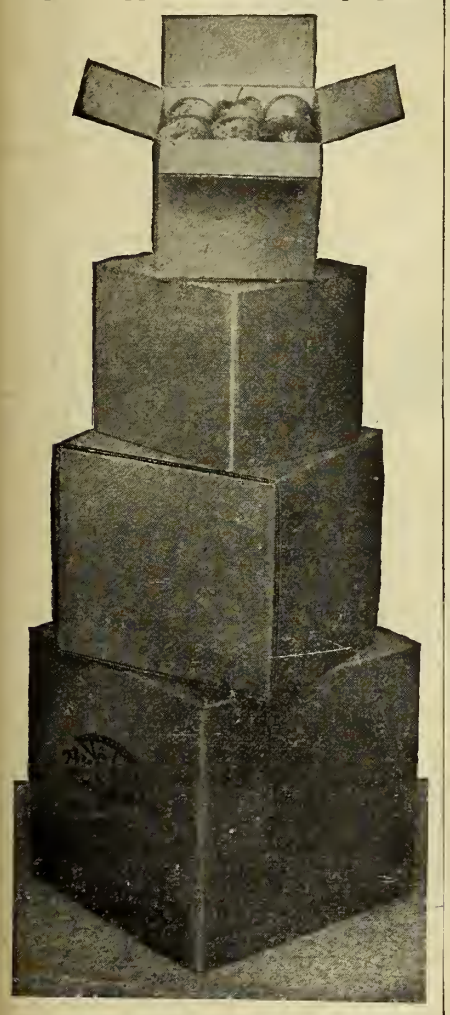
NEW APPLE PACKAGE

Boxes of Corrugated Paper Are Being Introduced For Small and Fancy Packages of Fruit

The sentiment in favor of packing really fancy apples in packages smaller than a bushel box is growing, and it is gratifying to note that manufacturers of packages are preparing to supply just what growers want, when once the latter decide upon the best package for their purpose.

With a view to helping this investigation, the American Paper Products Company, St. Louis, Mo., has made up some boxes of various sizes and shapes, and will co-operate with growers in any part of the country in trying to determine just what is the best size and shape for fancy apples, where a package smaller than a bushel box is used.

This company makes corrugated paper, and has done an extensive business in supplying corrugated paper caps for apple barrels. Now it proposes



Boxes holding one-half peck, one peck, half bushel and one bushel, respectively.

to furnish fruit packages of any size and shape desired, made from this same corrugated paper. These boxes are light, strong, and protect the fruit perfectly.

Our illustrations show the first attempt to find the style of package which will best serve the needs of the fruit farmers. One style is really a double box, the package consisting of an inner shell, which slips into an outer covering and into which it fits snugly. Both the shell and the outer covering are made of corrugated paper, and a very strong box is the result.

The other style box is made of corrugated paper and is shipped collapsed. When the box is filled with fruit it is sealed by pasting a strip of gummed paper at the joints, and a very strong, attractive package results. One of our illustrations shows these boxes made up in different shape from the double boxes, the single boxes being flatter than the others.

The American Paper Products Company has made these boxes to hold half a peck, half a bushel and a full bushel. Our illustrations show boxes of the various sizes, one of which is opened to show the apples which have been packed therein.

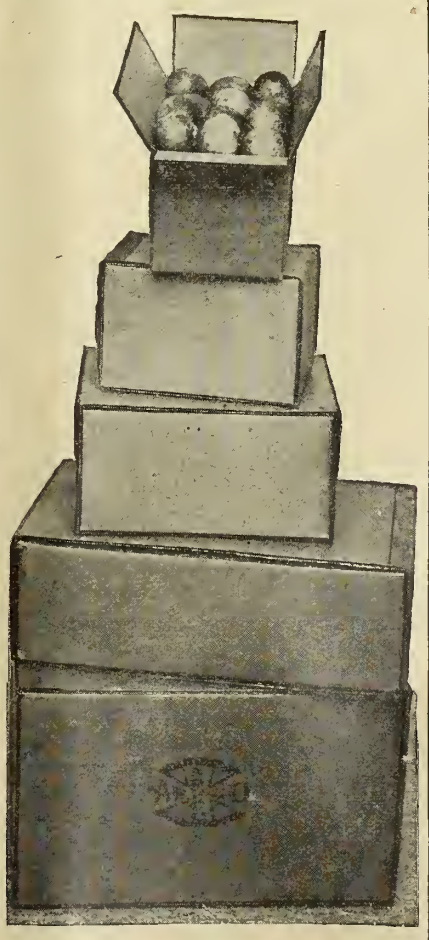
There are several advantages of these new-style packages. In the first place, they can be made any size and shape desired, to hold any number of apples, and by altering the shape the boxes will hold a given number of apples snugly. The boxes are light, and yet they are remarkably strong. They are now used in other lines, and boxes holding as much as 65 pounds have given perfect satisfaction.

The boxes are light, so that freight charges will be held down to the minimum. Another advantage is that the corrugated paper provides air space around the entire package, and apples are not likely to be frozen at a temperature which would destroy fruit packed in the old way. When apples are packed when quite cool this air space will serve to hold the temperature, and there will be less deterioration of the fruit if exposed to a lower temperature. In other words, the air space serves to hold the temperature at which the fruit is packed, and of course it is to the advantage of the packer to have this temperature as low as practicable.

Perhaps the greatest advantage, however, from the use of small packages, comes from the fact that the grower can establish a brand for his fruit, and can market his apples so that they reach the consumer in the package in which they left the packing house. This is an important matter, if a steady demand for a brand of apples is to be maintained.

If the producer can know absolutely that his apples will reach the consumer in the original packages, he can guarantee the fruit to be of a certain grade. He cannot do this otherwise, for the dealers may place other apples in the original packages. The National Biscuit Company can guarantee every package of Uneeda Biscuit, but they can hardly guarantee every cracker contained in the large box which was formerly used for crackers. The smaller package presents great opportunities for the man who wants to put up high-grade fruit and then stand behind it.

The Fruit-Grower wants to hear from its subscribers on this subect. What do they think of the smaller package for apples? Have you any suggestions as to sizes or shapes—but, for that matter, the boxes can be made in different shapes, to accommodate apples of different sorts.



DOUBLE BOXES

Holding one-half peck, one peck, half bushel and one bushel, respectively. These boxes are double, a shell being inserted in an outer casing, making a much stronger box.

Don't set your mind, set Big Ben

You ought to go to sleep at night with a *clear brain*—untroubled and free from getting-up worries. Such a little thing as "deciding to get up at a certain time in the morning" and *keeping* it on *your mind* often spoils a needed night's rest and makes a bad "next day."

Big Ben is not the usual alarm. He's a timekeeper; a good, all-purpose clock for *every day* and *all day* use and for years of service.

He stands seven inches tall. He rings with one long, loud ring for 5 minutes *straight*, or for 10 minutes at *intervals* of 30 seconds unless you shut him off.

His big, bold figures and hands are *easy to read* in the dim morning light; his large, strong keys are *easy to wind*. His price, $2.50, is *easy to pay* because his advantages are so *easy to see*. See them at your jeweler's.

Big Ben is sold by 16,000 watchmakers. If you cannot find him at your jeweler's, a money order sent to his designers, *Westclox*, *La Salle*, *Illinois*, will bring him to you express charges prepaid. [130]

BIG BEN

In writing advertisers please mention The Fruit-Grower.

TOO LATE TO CLASSIFY

Will sell beautiful home. Fifty-two acres, in King Hill Valley. Considered highest class fruit growing valley in Idaho. Three acres bearing Elbertas, 6 acres alfalfa. Beautifully located on Snake River, two miles from growing town; $4,500 equity; balance $130 per year for eight years, at 6 per cent. J. C. Douglass, Bliss, Idaho.

For Sale—One three-ton Avery gasoline farm truck; complete, with extension rims; capable of doing any farm work or hauling neatly and quickly, ready day or night; in perfect condition. Reason for selling, not large enough for our business. If interested, write at once. Place Bros., R. 8, Oswego, N. Y.

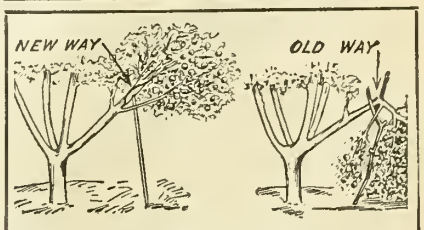
Get One of Uncle Sam's Last and Best Homesteads. Will You Go With Me?

The United States Government is running short of really good farm land, but there is one particular section not widely known that appears to have been overlooked. There is a great chance right now to get a particularly valuable piece of land under the U. S. Homestead law, and I can tell you all about it.

I am hired by the C. B. & Q. Railroad to go out with people and help them locate. I am going pretty soon.

These farms are situated in Weston, Crook and Campbell Counties, Wyoming, and are of proved value for all kinds of mixed farming, dairying, poultry raising and stock raising. The farmer who gets one of these 320-acre free homesteads also has a big advantage over most homesteaders, because the land is already well covered with the best of nutritious grasses for grazing horses and cattle—and what is more, there are posts, poles, coal, building stone, etc., to be had free on nearby government land. Altogether this is one of the most remarkable opportunities ever offered to a settler—good location—good land—good climate—good markets and many free supplies.

Let me tell you of the special low rates for this occasion and how you can join my party. It will be the trip of your life, will cost you but little and may be the turning point in your career. Just drop me a postal and I will answer all your questions, send you without charge an illustrated folder with pictures, maps, etc., describing the country, and give you full information as to just how to get a free homestead from the Government. D. Clem Deaver, Immigration Agent, C. B. & Q Railroad, Room 311, Q. Bldg., Omaha, Neb.



Economy Fruit Tree Prop

Simple, practical, nothing to get out of order. Mounted on swivel, there is no dead center to act as a pivot to break the limb, but will adjust itself to the load at all angles, with no breaking or bruising the bark. **The Economy Prop** is made of sheet steel and weighs but 8 ounces. Order now, and don't wait until your trees have broken. The saving of one tree will more than offset cost of enough **Economy Props** to protect an entire orchard.

Price $10 Per 100—$95 Per 1,000

Sample sent postpaid for 25c. Address main office

Economy Fruit Tree Prop Company
HAGERSTOWN, MARYLAND

Agents—Vreeland Chemical Co., 50 Church St., New York; S. Segari & Co., Poydras St., New Orleans, La.; W. E. Tribbitt, Staunton, Va.; Charlotte Hdw. Co., Charlottesville, Va.

Crystal White Orpingtons (Kellerstrass strain), at Iowa State Fair, 1911, won 2d cock, 2d hen, 3d pen laying contest. Eggs, $2.50 per 15. P. A. Fosselmann, Route 6, Waverly, Iowa.

Has Your Subscription Expired?

The wrapper used on each copy of The Fruit-Grower shows the month and year with which subscriptions expire.

This month we have placed a **Red Mark** around the date on the wrapper where subscriptions have expired.

If your date reads May, 1912, or any previous month, you should send renewal at once, or write us regarding your subscription. If you prefer to remit later, let us know, and we will advance you on our books, and you may settle when convenient to you. This will take your name off our delinquent list.

We want all subscribers to continue as regular members of "The Fruit-Grower Family," and we realize in some cases it will be more convenient to remit in the fall. Your credit is good with The Fruit-Grower, but please write us so we may advance your date and keep our delinquents down to the minimum.

Many readers fail to renew merely through oversight, so as a matter of courtesy we continue to send the paper a few months in some cases, so that no important numbers of The Fruit-Grower will be missed.

If you want your paper discontinued, **please write us**, for The Fruit-Grower is an expensive magazine, and we do not want to continue sending copies to readers who do not intend to pay for it.

We guarantee **a square deal** to all, and will consider it a favor if you will write promptly about any complaint you may have in regard to your account or failure to receive your paper promptly.

You Need The Fruit-Grower

We would not urge anyone to renew his subscription to The Fruit-Grower if we didn't know that our paper is worth more than it costs to every person who grows fruit. We know that one makes a good investment when one subscribes for The Fruit-Grower.

You really need The Fruit-Grower and should send your renewal today.

Send $2.00 for a three-year renewal now and we will send you free a $1.00 cloth bound copy of The Fruit-Growers Guide Book.

If you grow fruits to sell, you need The Fruit-Grower's crop reports—they are compiled from the standpoint of the growers, and are the most reliable reports published.

If you grow fruits for home use or if you have only a garden, then you need The Fruit-Grower to help solve the problems that are continually presented. Remember that our Questions and Answers Department is at your command, and all your questions will be answered, without charge, by competent men.

An increase of half a crate of berries, a bushel of apples or peaches in your fruit crop this year will pay the subscription to The Fruit-Grower. Don't you think you will increase your crop many times this quantity by reading our paper regularly? The best fruit farmers in America increase their yields by reading The Fruit-Grower.

You see, it isn't an expense when you renew your subscription to The Fruit-Grower; instead, you really make money by doing so.

Renew your subscription today. Take advantage of our long-time rate and send $2.00 for three years' renewal.

The Fruit-Grower Subscription Dept., St. Joseph, Mo.

NEWS OF MICHIGAN GROWERS

The Hesperia Horticultural Society met in Hesperia, Newaygo County, and elected officers for 1912 as follows: President, Neil McCallum; secretary, Geo. E. Wilbur; treasurer, H. K. Bush.

An experiment station will be opened early in the spring in the Benton Harbor-St. Joe district, in charge of an expert furnished by the United States Department of Agriculture, and spraying experiments will be carried on for the benefit of the growers.

The Manistee County Horticultural Society was recently formed, at a meeting of the growers at Bear Lake, with the following officers: President, Edwin Russell, Manistee; vice president, Arlie L. Hopkins, Bear Lake; secretary, J. F. Brunais, Chief; treasurer, W. F. Millarch, Bear Lake. The association will be auxiliary to the state society.

Directors of three of the grape organizations in Southern Michigan met at Lawton and discussed packing and marketing problems. All agreed that better results as a rule obtain when the packing is done in the packing house. As to sorting the general opinion prevailed that nothing but the choicest grapes should go into the smaller baskets and all other grapes should be sold in bulk. Harry Lurkins, of Paw Paw, was chairman of the meeting and H. L. Sutton, secretary.

The annual meeting of the Michigan Original Fruit Belt Association was held at Hartford, February 14th, with a large attendance of growers present from Berrien, Van Buren and Allegan Counties. Officers were re-elected as follows: President, R. H. Sherwood, Watervliet; secretary, R. A. Smythe, Benton Harbor; treasurer, C. J. Monroe, South Haven. Chas. E. Bassett, of Fennville, secretary of the Michigan State Horticultural Society, spoke in "The Needs of Co-operation," saying in part: "Our interests as growers are common and we must co-operate. There is a great awakening in horticulture and our marketing facilities are not keeping pace with the setting of new orchards. The problem today is not whether we can grow good fruit, but can we market it? There must be improvement in our methods of packing. The Smythe bill that passed the legislature and was killed by the governor last year was framed for the sole purpose of obligating the grower to be honest. It stood for a standard package and an honest pack. A proper system of distribution is another great need and this can be solved only through co-operation. Co-operation must succeed competition and must take from each grower the right to pack his own fruit, for only through a manager can grade and pack be established up to standard. Inspectors must be employed whose decision shall be final. Our nearness to Chicago, the great central market, with low freight rates, allows growers to dump culls there, thus depressing the market for our better fruits."

Dudley Grant Hayes, of Chicago, spoke of the progress of the National Soil Fertility League. Prof. H. J. Eustace, of the Michigan Agricultural College gave a talk on "Co-operation and Marketing," pointing to what the growers of citrus fruits, cranberries and other products are doing. He advised starting in a small way, with a competent man as manager. Prof. David Friday, of the University of Michigan, spoke on taxation as it affects the farmer, showing that the latter is paying more than his share of the burden. The resolutions adopted included endorsement of the Lever bill now before Congress and the Smythe bill, which provides for marketing of fruit packages with the growers' names.

The association went on record unanimously for "honor" fruit and for honesty in packing and marketing methods. The following was adopted: "Resolved, that the interests of the fruit producers of the three Counties represented in this Association, Berrien, Van Buren and Allegan, demand a federation or organization comprised of local branches in the several localities, which shall completely and adequately supervise the grading and packing of fruits, also the judicious distribution and profitable disposal of same."

Oakland County fruit growers met at Birmingham and steps were taken toward forming a horticultural society. The temporary officers are: President, John T. Miller, Birmingham; vice president, W. D. Flint, Novi; secretary, Miss Addie Sly, Birmingham; treasurer, Chas. Bingham, Birmingham.

Grand Rapids has been practically assured the second annual state apple show this fall, and the Michigan State Horticultural Society is planning on holding its annual meeting in Grand Rapids at the same time. Jackson has been trying hard to get the state meeting, and Traverse City also feels that she is entitled to it, but the probabilities are that Grand Rapids will have the honors this year. The state horticultural meeting is growing in attendance, so that now a convention hall capable of caring for a thousand delegates is required.

The effect of the severe winter on Michigan fruits has been freely discussed and reports are very conflicting. The entire crop has been wiped out several times by excited correspondents and while it is probably true that peaches in the interior of the state have been killed, further than this nobody knows.

The Grand Rapids Fruit Growers' Association has re-elected officers for 1912 as follows: President, Oscar W. Braman; vice-president, Charles W. Wilde; secretary, Wm. Molloy; treasurer, H. D. Perkins; executive board, E. V. Kelly, J. C. Maynard and Robt. D. Graham.

The newly organized Manistee County Horticultural Society held its first monthly meeting March 6 at Bear Lake with over 50 members present.

The Hesperia Commercial Orchard Co., capital $50,000, has been organized, with offices in Hesperia and Chicago, and the following officers: President, E. J. Carbine; vice-president and treasurer, Frank Darlington; secretary, Dr. S. B. Robinson. The company has bought 500 acres in Newfield township, Oceana county, and will set out peach and apple orchards, engaging later in small fruits, pears and grapes.

The Grand River Valley Horticultural Society held its first quarterly meeting of the year March 19 at Grand Rapids and the speakers were Secretary Huggett of the Grand Rapids Association of Commerce, R. D. Graham, C. E. Bassett of Fennville, secretary of the state horticultural society, A. N. Brown and Geo. E. Rowe of Grand Rapids. The advantages of Michigan for fruit growing and the importance of letting the world know about it, were among the principal topics discussed. One of the advertising methods that will be tried this year will be the placing of a permanent exhibit of fruit and soil products at the union station, Grand Rapids.

O. W. Braman of Grand Rapids was the principal speaker at the annual meeting of the Belding Horticultural Society and he gave much practical advice on the care of orchards. The following officers were elected: President, Oscar Nummer; vice-president, John D. Strain; secretary, Ernest Chickering; treasurer, Edward Carpenter.

Bridgman fruit growers have elected Wm. Gast as president and Wm. Seymour as secretary. Mr. McGarvey of Benton Harbor will act as salesman.

Carey Dunham has been re-elected as manager of the Southern Michigan Fruit Association, the decision being reached by postcard vote. A full report shows that 3,000 cars of grapes were shipped out of the Lawton district last year and that Berrien county sent out as many more. Lawton station sent 1,132 cars, Paw Paw, Lake Cora, Lawrence, Rix and Oshtemo, 1,363 cars; Mattawan, 455; Decatur, 290; Marcellus, 187; and on down to one from Cassopolis. There were also 190 cars sold to juice factories.

The Jackson County Fruit Growers' Association has elected officers for the year as follows: President, F. E. St. John; vice-president, M. L. Noon; secretary, W. L. Reid; treasurer, J. Milton French; directors, Joseph Butler, Roy Heath and L. Whitney Watkins. Regular meetings are being held and much interest taken in fruit culture.

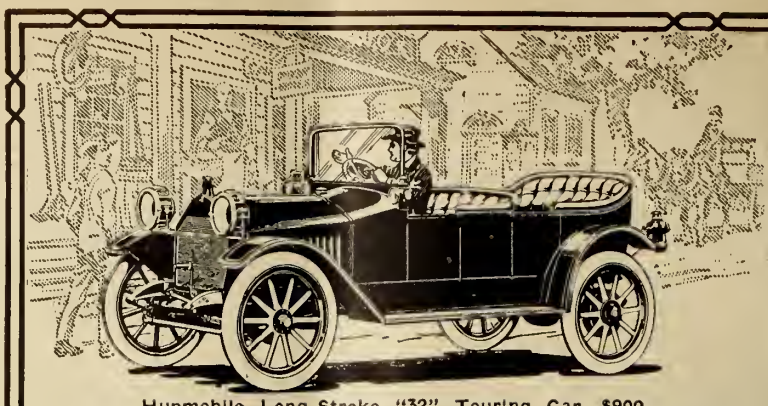
Oakland county is in line with a live organization of fruit growers. Recently at Pontiac the Oakland County Horticultural Society was formed, with officers as follows: President, J. T. Miller, Birmingham; vice-president, W. D. Flint, Novi; secretary, Miss A. Sly, Birmingham; treasurer, Chas. Bingham, Pontiac. Oakland county is famous for its apples, particularly the Steel's Red variety.

The Central Fruit Growers' Association has been formed at Battle Creek, with the following officers: President, A. F. Mead, Pennfield; vice-president, O. C. Edwards, Battle Creek; secretary, W. B. Snell; treasurer, S. E. Lewis; prompter, John Kolvoord.

The fruit growers are coming to realize that they must do their own marketing on a scientific basis, through co-operation and the engaging of salesmen, who know their business. The importance of uniform grading and packing methods is being realized as never before and the growers of Southwestern Michigan have practically decided to co-operate along these lines.

ALMOND GRIFFEN.

R. F. D. 7, Grand Rapids, Mich.



Hupmobile Long-Stroke "32" Touring Car, $900

F. O. B. Detroit, including equipment of windshield, gas lamps and generator, oil lamps, tools and horn. Three speeds forward and reverse; sliding gears. Four cylinder motor, 3¼-inch bore and 5½-inch stroke. Bosch magneto. 106-inch wheel base, 32x3½-inch tires. Color, Standard Hupmobile Blue. Roadster, $900.

Says it's the best car on earth to pull in the mud

Hupmobile

Late last March, when the country roads were at their worst, Earl Sowards drove a recently-bought Hupmobile '32' touring car, fresh from the Detroit factory, to his home in Decatur, Ind.

His testimony as to the pulling power of the '32' is so convincing and emphatic that we quote it verbatim from his letter to us describing the trip:—

"It is the best mud-turtle you ever saw. I could not tell you how bad the roads were, for if I did you would not believe me," the letter says.

"I had 23 miles where I never saw a place that the mud was less than six inches deep; and one place the mud came above the running board for a space of 40 rods or more. It is impossible to stick the car.

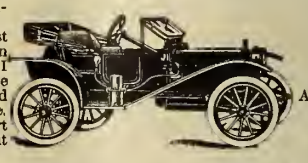
"The Model '32' is the best car on earth to pull in the mud. I know, for I have driven several of the best makes. I have had eight years of experience. I never touched any part of the motor, only to put in oil.

"I was pulling through the mud along by a farmer's house. Just in front of the house was some water, and I thought I would have some fun; so I let my motor die slowly and stopped for a chat. I asked him if he would get his team and pull me out. He answered: 'There are not two teams in the country that could do it.'

"Then I told him that I woul dhave to pull myself, and he said: 'I guess you can stay with me until the mud dries up a little.'

"When I was ready to go on, I started up as if nothing had happened.

"He said he was going to have a car of that kind."



On account of its low center of gravity, the Hupmobile '32' clings to the road under all conditions, with the least possible sidesway and wind resistance.

Absolutely lowest in point of upkeep-cost. You cannot buy better style or better service at any price.

Standard 20 H. P. Runabout, $750

F. O. B. Detroit, with same power plant that took the world touring car around the world—four cylinders, 20 H. P., sliding gears, Bosch magneto. Equipped with top, windshield, gas lamps and generator, oil lamps, tools and horn. Roadster with 110-inch wheel base and highly finished steel box mounted on rear deck, $850.

Hupp Motor Car Co., 1210 Milwaukee Av., Detroit, Mich.

Every Crisp, Little Flake

Of

Post Toasties

has a flavour all its own.

"Toasties" are made of selected white Indian corn; first cooked, then rolled into wafer-like bits and toasted to an appetizing golden brown.

A favorite food for breakfast, lunch or supper in thousands upon thousands of homes where people are particular.

"The Memory Lingers"

Sold by Grocers

Postum Cereal Company, Limited
Battle Creek, Mich.

For Boys *and* Girls

There's an offer of special interest in an advertisement on page 12 of this issue of The Fruit-Grower.

READ IT NOW

GRAPES IN NEW YORK

Onondaga County, Though Out of the Grape Belt, Raises Fruit of Superior Quality

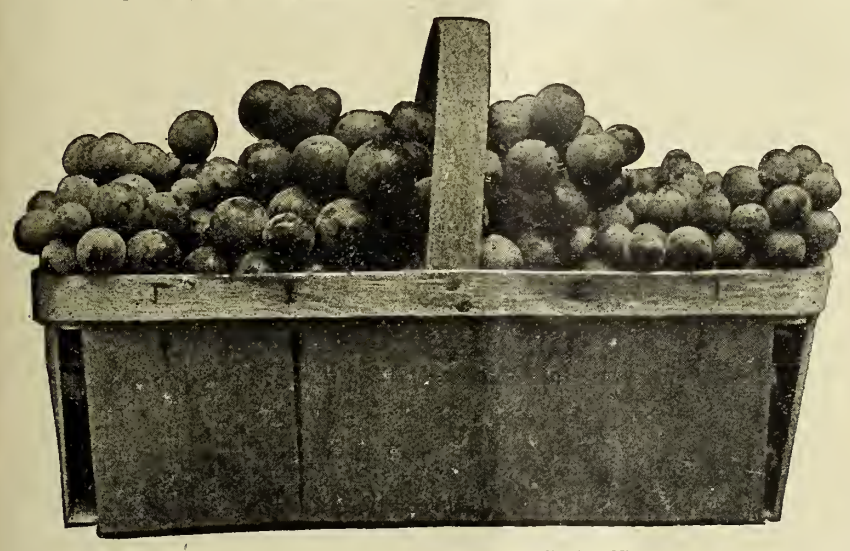
Sometime ago business called me to Onondaga County, N. Y. Near Fayetteville I saw large fields of grapes. The locality is not in the grape section of New York, where grapes can be grown with ordinary methods. I went to see the vineyards to learn some facts about grape culture that would be of use to myself and others who wish to grow good grapes on lands not in the so-called "grape belts" of the state. I found Mr. D. H. Wells packing grapes for shipment. The grapes are first picked in large baskets and drawn to the packing house on a wagon with a platform top. The baskets are unloaded from the wagon and placed on long rows of shelves. The packers take the grapes from these large baskets and pack in the shipping baskets. The most of the grapes are sold in the nearby city, or villages. Some fancy packing is done, as packing Niagara, Delaware and Worden so as to show well in the same baskets. The grapes sell for higher prices because of the extra fine quality and the care taken in packing.

Mr. Wells considers the first essential to be quality, so the greater part tivation is done with a one-horse cultivator or horse-hoe, followed by a spring tooth drag every two weeks until August.

The vineyards are on a limestone soil, dark colored rather heavy clay loam, that varies from one to four feet in depth. Underneath is a porous layer of rock and drift. The soil is strong and when fertilized with stable manure induces too large a growth on some varieties, and with others it is just right. Mr. Wells fertilizes the grapes according to the needs of different varieties, the kind of soil and its condition. The Delaware, which is rather a weak grower in ordinary soils, is grown here very successfully. Commercial fertilizers,after careful testing, have been found to be of little value on this soil. Plowing under crimson clover has often been a help. Good stable manure is applied where the growth of vine indicates its need.

An average acre of grapes yields 5,000 pounds or more, which are sold at wholesale at an average price of four cents per pound.

The expenses of an acre of grapes Mr. Wells places as follows:



A FANCY BASKET OF GRAPES
Niagara on the left, Worden in the center and Delaware on the right

of his vineyard is of Delaware, a large part of Niagara, and some of Worden and Concord. These are his commercial varieties. He has experimented with many other varieties and found none so good as these.

The renewal system is the plan of culture for the semi-hardy varieties, as Niagara and Delaware, for this is the only system by which the vines can be laid down in winter for protection. The grapes are supported by wires fastened on posts, the top one being six feet high, and on these the canes are trained, V-shaped. These are renewed from the root every two or three years according to variety, then they do not get too large to lay down for winter protection. Every vine is given work to do according to its strength, as shown by its growth, leaving on some one or two canes, on others six or eight, from three to four feet in length. If summer pruning is found necessary some of the first shoots nearest the older wood are rubbed off, for the bunches on these canes have proven to be much smaller than those from buds farther out. When the crop of grapes is picked, the varieties that need it are pruned by shortening the vine and cutting back the laterals or side shoots. It is then laid on the ground, but the vine is not all covered, simply held flat to the ground. Worden and those equally hardy are left on the trellis and pruned during winter or early spring.

In the spring all that is needed for the vines left on the wires all winter is to train the growth to the wires. Those that have been laid down for winter protection are taken up and tied on the three wires and are trained to them by the "fan system," or in a V shape. During the growing season the vineyard is cultivated. The rows are from eight to ten feet apart. Cul-

Fertilizer	$ 5.00
Cultivation	12.00
Spraying	2.00
Pruning and laying down for winter	5.00
Tying and training vines in spring	3.00
Picking	13.00
Baskets and packing	30.00
Total expense	$70.00

In addition to growing grapes, Mr. Wells also grows 15 acres of currants for market. They are grown between rows of fruit trees. Probably currants grow better in the shade of trees than other fruits, which makes it possible to grow them among fruit trees. They are also well adapted to rather heavy, deep soil. Those who have lighter soils might not grow currants and tree fruits as a combination so successfully as does Mr. Wells. The cherry, plum and pear trees are 20 to 30 feet apart, and four or five rows of currants are between the trees. Mr. Wells does not think they yield quite as much as if planted alone, but the returns from the combination crops are larger than from either one grown separately. Victoria, Fay's Prolific and Wilder are the varieties mostly grown. The red currants are good yielders and are desirable for canning. A large part of the crop is sold to canning factories. Currants are a very safe crop to grow although they may not bring as large returns as some other fruits. They seldom fail to grow good crops when sprayed with arsenate of lead for the currant worm. Currants require little pruning and the main expense is for picking, which is mostly done by women and children. I think the currants and tree fruits are fertilized with stable manure when it is needed. Mr. Wells has three acres of apple and pear orchards alone, where no currants are grown, and in an average year the minimum returns for these orchards are $50 per acre net receipts. The vineyards, sour cherries and currants as a combination crop are the most profitable, and Mr. Wells finds the results are very satisfactory.

New York. W. H. JENKINS.

A power sprayer and pruning shears will go a long ways toward changing an unprofitable orchard into a bank account. If you don't believe it, try them.

Here's
The Road to Comfort

A vanished thirst—a cool body and a refreshed one; the sure way—the *only* way is via a glass or bottle of

Coca-Cola

Ideally delicious—pure as purity—crisp and sparkling as frost.

Free Our new booklet, telling of Coca-Cola vindication at Chattanooga, for the asking.

Demand the Genuine as made by
THE COCA-COLA CO.
ATLANTA, GA.
1-J

Whenever you see an Arrow think of Coca-Cola.

Protect Your House from the Weather

The Sun dries out and rots the paint, shrinks the wood, warps and season-cracks the boards, and causes joints to loosen.

The Rain soaks into the wood, beats through the cracks and joints, and swells, weakens and rots the wood, often doing great damage to walls.

The Frost completes the the destruction, by freezing and expanding the water, opening cracks in the wood and weakening the entire structure.

Lowe Brothers High Standard Liquid Paint

Paint your buildings with Lowe Brothers High Standard Liquid Paint and you will have the best possible protection at most reasonable cost, for it is the paint that has best withstood all these tests.

"High Standard" is the result of over 40 years study of scientific paint making. It works easier, goes farther, and wears longer than other paints. It is "the paint that gives best results." Lowe Brothers Barn Paint, Carriage Gloss and Wagon Paint are High Standard products.

Ask your local "High Standard" dealer, also write for our FREE, "Farm Packet" of color cards and booklets of valuable paint information.

THE LOWE BROTHERS COMPANY, 496 E. Third St., Dayton, Ohio
Boston New York Chicago Kansas City
Lowe Brothers, Limited, Toronto, Canada.

Apple Barrels and Boxes

Barrel Material, Supplies, Presses Picking Ladders, Etc. Second Hand Whiskey Barrels and Kegs

Hauber Cooperage Co., Kansas City, Kan.

For Boys *and* Girls

There's an offer of special interest in an advertisement on page 12 of this issue of The Fruit-Grower.

READ IT NOW

Get your neighbors to subscribe.

THE FRUIT-GROWER

ST. JOSEPH. MISSOURI

Title Registered in U. S. Patent Office. Bro. Jonathan—Trade-Mark—Registered
Copyright, 1912, by The Fruit-Grower, St. Joseph, Mo.

Address all communications and make remittances payable to "The Fruit-Grower."
Eighth and Charles Sts., St. Joseph, Mo.

WM. G. CAMPBELL, General Manager JAMES M. IRVINE, Managing Editor
E. H. FAVOR, Associate Editor

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....J. C. BILLINGSLEA.....First Nat'l Bank Bldg.
New York Office.....A. H. BILLINGSLEA.....No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS.....New York Life Bldg.
St. Louis Office.....A. D. McKINNEY.....Third Nat'l Bank Bldg.
Minneapolis Office.....ROY R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents Agate Line. $7.00 per inch. Fourteen Lines to an Inch.
Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
No advertising in class generally termed "Objectionable" accepted under any conditions. Editions mailed on first day of month. Forms close on 20th of preceding month, i. e., January forms close December 20th, etc.

An Advertisement in The Fruit-Grower will place you in touch with One Hundred Thousand of the Most Prosperous Farmers in America

SUBSCRIPTION RATES

Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c, or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list.

Remit Coin, Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 MAY, 1912 Number 5

Increasing Consumption of Fruits.

Raisin growers of California have an organized movement to increase the use of raisins as food, and every year a day is set apart as Raisin Day. This year the day adopted was April 30, and long before that time we had a letter from a firm at Fresno, Cal., with which The Fruit-Grower does business, urging us to eat raisins on April 30, and to urge all our friends to do so. The letter we received was printed, and was doubtless sent out by thousands. Such work should increase the consumption of raisins very materially.

Last year we were on a train on Raisin Day, and the menu card on the dining car called attention to Raisin Day, and every guest in the car was served with California raisins complimentary. It occurred to us that this was good advertising, and there is a suggestion here for the observance of Apple Day next October. Suppose every hotel and restaurant is urged to make a feature of apples on that day for every meal; suppose that every railway company is asked to serve baked apples, apple sauce and apple pie on that day, at the various meals. If this is done apples will be advertised and more persons will be interested in their consumption. Who will do this work? You are one of those who should look after affairs in your section. Do it yourself, and it will be well done.

We Plead Guilty.

Recently The Fruit-Grower received a most interesting communication from an apple buyer, who had received a letter asking him to subscribe for our publication. This gentleman told us very frankly why he will not subscribe.

He said that The Fruit-Grower is published absolutely in the interests of the growers; that our articles are calculated to help him grow better fruits, to grade and pack them better, and that our crop reports are intended to keep growers posted as to prices, and that our sole desire seems to be to help the men who grow fruit to get as much as possible for their crops. The man who wrote the letter, however, belongs on the other side, and he could not afford to get into his head our figures as to crop conditions, prices, etc.

To this charge we plead guilty. The Fruit-Grower is published solely in the interest of the men engaged in growing fruit. A lot of fruit buyers read our paper regularly, but none of them expects us to change our policy in the least. On this question we are a "stand-patter."

The communication of the apple buyer suggests to us the importance of getting in touch with every fruit grower in the country. The men who buy your fruit, and who want to make the price in every deal, are strongly organized, and they have powerful papers published to look after their interests. The time has come when fruit farmers must look after their own interests in the same way.

The Fruit-Grower stands ready to help in this work. Our columns are open for the discussion of subjects which are involved in the problem of marketing fruits. We shall strive to improve our crop-reporting system, so that every reader can have reliable information regarding fruit crops, prices, etc.

In all this work we should have the co-operation of every man who grows fruit. The more growers who read our crop reports, the better will be general results. Get your neighbors to subscribe, so they will be posted. Send us their names, we will forward sample copies, and then it will be easy for you to secure their subscriptions. Now's the time to line up the growers of the country, and no other publication is as well prepared to lead in this work as The Fruit-Grower. We are willing to do all we can. Will you do as well?

Cost of Producing Farm Crops.

The article in the April issue on this subject will offer suggestions to every reader of The Fruit-Grower and will help him to devise a system of keeping expense accounts which will enable him to know what it costs to produce a fruit crop. If you have not read this article, get your April Fruit-Grower and read it. Then if you can suggest any improvements in this system, write us about it. Let us co-operate in trying to get a cost system which will definitely determine the cost of producing farm crops of all kinds.

Must Advertise Apples.

Following a suggestion made in a recent issue of The Fruit-Grower, Mr. W. K. Newell, president of the Oregon State Board of Horticulture, writes as follows:

"I believe that apple growers must arrange some way to raise funds to advertise apples as a food product. But few people realize the actual food value or the medicinal value of apples. Baked apples ought to take the place of most so-called breakfast foods on the American breakfast table. Children ought to eat more apples between meals instead of candy. Lately I have taken notice of what people eat on dining cars. I have been traveling most of the time, and lately covered about 8,000 miles in three weeks. I have found that grape fruit is being eaten for breakfast more than all other fruits, and only two or three times on this trip have I seen anyone eating baked apples, grape fruit being eaten by dozens of persons on the cars every morning. This must be due in part, at least, to the advertising of grape fruit.

"The California Fruit Exchange spent $50,000 last year in advertising 'Sunkist' oranges, and will likely double this sum in 1912. Something must be done to secure better distribution of apples, but we must also increase consumption. The passage and enforcement of the Sulzer bill in its present form will aid greatly in raising the standard of fruit sold, and this law should be supplemented by laws similar to our Oregon law, which prohibits the sale of diseased or wormy fruit. Let us serve apple sauce with pork before it is dressed as well as afterward. Fully 25 per cent of the apples sold in the market in the last few years should have been fed to the pigs. If we get a bumper crop all over the country this low-grade fruit must be kept off the market."

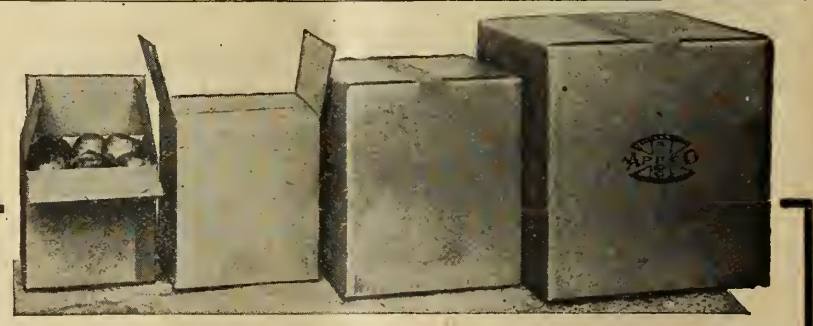
Along the line with Mr. Newell's suggestion it might not be out of place to call attention to the great increase in importation of fruits and nuts from other countries to compete with our home-grown fruits. Imports of fruits and nuts are increasing at the rate of about $3,000,000 a year. The greatest increase is in the importation of bananas, which directly compete with our apples on market.

In 1902 the United States imported about $3,000,000 worth of bananas. In 1911 the imports were almost three times this figure, or, in round numbers, $8,500,000. And the imports of bananas is increasing steadily every year.

Now, what's to be done by apple growers? Our good friend Louis Erb has always claimed that every banana eaten kills the sale of an apple, and he's about right. There are two ways to bring about a change from bananas to apples. One to increase the duty on bananas so that the price will be increased, and the other is to grade and pack our apples better, and then distribute them well, so that apples will be available everywhere and the purchaser can know he is getting good fruit when he buys. Let us endeavor to so pack apples that buyers will have as much confidence in buying apples as they have in buying bananas. We must use more apples when we have that bumper crop—and who knows but this may be the year?

Watkins' Spraying Plan.

In speaking about spraying, Professor Watkins, of the Illinois Experiment Station, says from the experiments which he has conducted and from observations made by visiting orchards in various parts of the state, he would spray as follows: "For those varieties which I knew were not susceptible to scab, in my own particular vicinity, I would use lime-sulphur-arsenate for the first two applications; that is, the one immediately before bloom and the one immediately after the bloom, and for all further applications I would use bordeaux or bordeaux-arsenate. In no case would I use lime-sulphur-arsenate for the later applications. If I were going to spray Ben Davis, or Willow Twig, or any of those varieties which are very susceptible to scab, I would use bordeaux mixture on the first application, lime-sulphur-arsenate the second application, bordeaux for the third and all following applications."



Appco Shipsafes for Fancy Fruit

An elegant package carrying your advertisement in one or more colors. Little storage room. Small packing quarters. Heat and cold proof. Shipped KD. OK'd by Interstate Commerce Commission.

Such are the advantages of the

Appco Shipsafe

the newest and best shipping package ever devised.

Made of double faced corrugated fiber. The cellular construction provides a cushion that overcomes all shocks, jars and bruises. Stronger and much lighter than a wood box. Prettier than a picture.

The Appco Shipsafe is the full and final solution of marketing fancy fruit.

Get our prices on Appco single and double faced barrel caps. Samples sent on request.

AMERICAN PAPER PRODUCTS CO., 253 Bremen Ave., St. Louis, Mo.

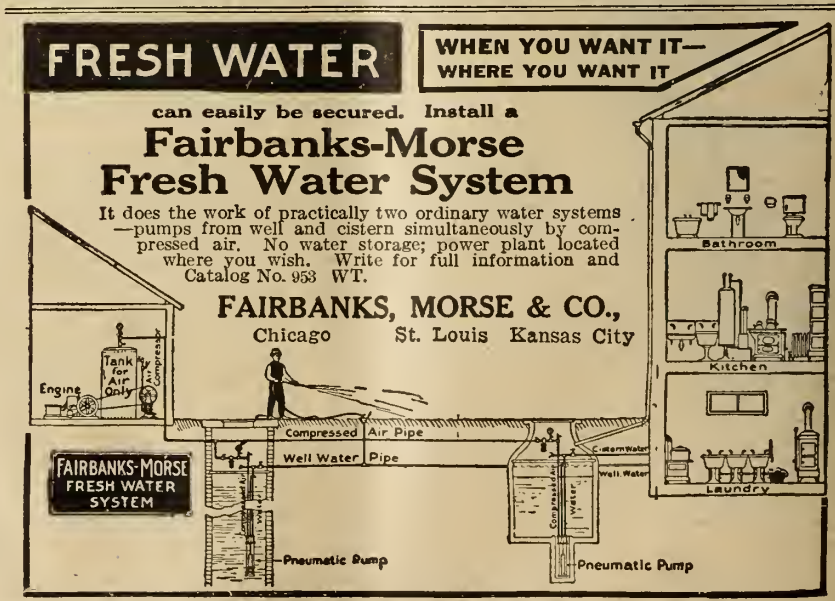
FRESH WATER WHEN YOU WANT IT— WHERE YOU WANT IT

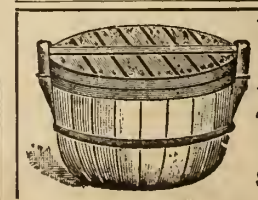
can easily be secured. Install a

Fairbanks-Morse Fresh Water System

It does the work of practically two ordinary water systems —pumps from well and cistern simultaneously by compressed air. No water storage; power plant located where you wish. Write for full information and Catalog No. 953 WT.

FAIRBANKS, MORSE & CO.,
Chicago St. Louis Kansas City





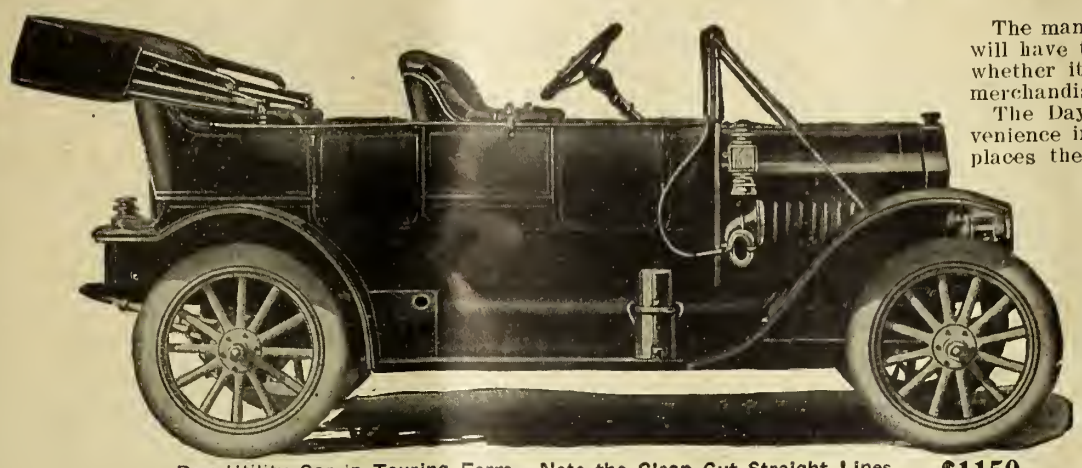
Baskets Fruit Packages and Berry Boxes

TREE PROTECTORS A SPECIALTY

Address 146 Arsenal Street

St. Louis Basket & Box Company, St. Louis, Missouri

TWO CARS IN ONE AND EACH A PERFECT CAR



Day Utility Car in Touring Form. Note the Clean Cut Straight Lines. 116 inch Wheel Base. 33 Horsepower. Price..... $1150

The man who thinks he "can't afford to own an automobile" will have to revise his ideas. No man who is in business—whether it be the business of farming or fruit growing, or merchandising, can afford not to own the Day Utility Car.

The Day Utility Car marks an era of economy and convenience in automobile building and automobile owning that places the motor car within reach of thousands who have heretofore considered it an expensive luxury.

The Day Utility Car

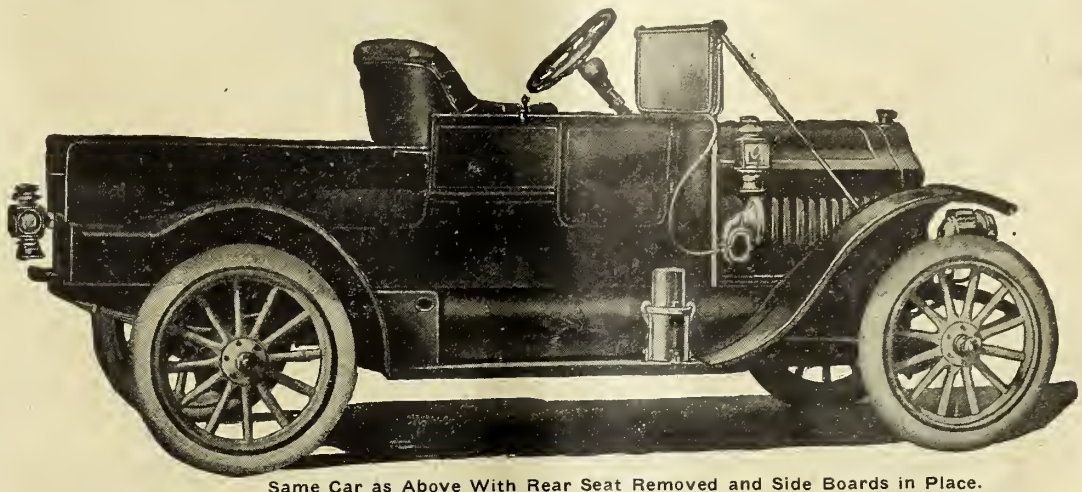
is actually two perfect cars in one. It is a roomy five-passenger car, designed along strong graceful lines—a car of beautiful proportions—and yet, you press a spring lock, the rear seat and doors come off, side boards are slipped in place, and in half a minute, you have a clean cut, snappy delivery wagon with ample body room and a capacity of 1,000 pounds.

A Car For Farmers and Fruit Growers Exactly the car that farmers, fruit growers, gardeners, as well as merchants, plumbers, contractors and others have been waiting for and wishing for these many years. A car that will do the work of two or three horses—do it better and quicker, and one that is never too tired after the day's work is over to take the family out for a thirty or forty or fifty mile spin in the evening.

The Day Utility Car is a Money Maker instead of a money spender. It actually saves its cost in the increased efficiency and decreased cost of delivery work.

The rear seat and door are instantly removable. No bolts or screws to take out—simply a spring lock that is instantly released, yet holds the seat firmly in position. The space under the front seat is all open, giving the delivery body extreme roominess. Side boards are provided that are instantly slipped in place and add still more to the capacity of the body.

The illustrations shown are from photographs and give an accurate idea of the car in its two forms. **Write today for booklet.**



Same Car as Above With Rear Seat Removed and Side Boards in Place.

The Day Automobile Co.

Milwaukee Avenue, Detroit

THINGS TO DO THIS MONTH

This is the month of apple bloom, and the month when there will be but little rest for the spraying machine. Make an application of bordeaux mixture or lime-sulphur before the blooms open and get ahead of the apple scab. When the petals have all dropped from the flowers, apply bordeaux or lime-sulphur to which lead arsenate has been added and stop the damage that would be done by the codling moth. Read page 9, January, and pages 37 and 38, April, Fruit-Grower.

Get ready now to can the surplus vegetables and fruit from your place this summer. Advertisements of canning machine makers are in this issue, and The Fruit-Grower for last July contained a number of very good articles on canning and preserving.

Keep the soil well stirred in the orchard and small fruit plantation to hold the moisture in the soil and avoid the possibility of damage in case a drought should set in as it did last spring.

Put a crook in your spray rod and direct the stream from the nozzle directly into the blossoms when spraying for the codling moth. It is the only way of putting the poison where the worm is bound to get a bite of it.

Strawberry harvest is in full swing, and it will pay to read once more the articles on packing strawberries in the last issue. As soon as harvest is over plow up the bed and plant a legume or cultivate the middles for new plants to fruit next year.

Label Your Package.

At the meeting of the Fruit Growers' Association of Adams County, Pa., which was held last December, W. J. Lewis said, "It doesn't make any difference whether a mowing machine is sold at home, in South America, Africa or Australia, the identity of the manufacturer and the place of manufacture is never lost sight of. The only place that it doesn't count is in the junk heap, where the price has fallen from about $45 to $2. Friends, there is entirely too much of our product sold as junk. If you are turning out a product that you are ashamed of, let it go as junk, but if what you have for sale is as good as the average, stamp your reputation on to it, show the consumer that you are not ashamed of it and you will be surprised what a lot of confidence you can inspire in him and what a price he will pay for it." Do you get the point? Grow good fruit, pack it well, put your name on the package and be proud of your product.

Note of Warnig.

C. S. Harrison, York, Neb., has spent the winter in California, and while in the West investigated the apple situation in the Northwestern states, and particularly in Washington and Oregon. Mr. Harrison is of the opinion that apple planting is being overdone there, and that in a few years apples from that section will not bring profitable prices. He doesn't believe the quality of the fruit produced, when judged by flavor and texture, will compare with Eastern grown apples, and that in the long run the Northwestern fruit will lose out.

There are others who are thinking along the same line. A letter just received by The Fruit-Grower says that the acreage of bearing orchards in Washington, Oregon and Idaho this year will be practically double the acreage which produced 10,000 carloads in 1910. This same writer says that in 1915, estimating on basis of maximum crop, the output should amount to between 30,000 and 50,000 cars, and in 1920 to more than 100,000 carloads of apples.

Certainly something should be done to increase consumption of apples, and the Northwestern growers should be much interested in this subject, for with a bumper crop the apples which have the longest haul to market will be the first to suffer.

A Reason for Diversification.

Professor H. C. Taylor of the University of Wisconsin, after an extended investigation in cost accounting in connection with the office of Farm Management of the United States Department of Agriculture, finds that accurate labor records are especially useful in planning what to produce in order to provide regular and profitable labor employment. It is the general belief that farmers should diversify their crops, so that a failure of one crop, or low prices for that crop, would leave him other products to fall back upon. There are other reasons. "There is no single farm crop in Wisconsin that keeps the farm labor busy all of the time, but by a proper combination of crops, employment of labor can be extended materially throughout the year. There are, however, limits to diversification. For instance, corn and tobacco require labor at the same time for planting and cultivation, and are, therefore, competing crops, but tobacco furnishes winter employment to labor when there is a scarcity of employment, and, therefore, to this extent these crops are non-competing or complimentary. The use of non-competing crops may well extend the operations of the farm."

Appreciated by a Printer.

I am reminded that the newspaper man and publisher of periodicals looking towards the betterment of mankind are not appreciated as they should be, and so in my small way, I wish to give you all the encouragement I can.

Speaking of your magazine, I can truthfully say that from a typographical standpoint, in make up and print, I have never seen its superior and few equals. As to the subject matter contained therein, I must say, and with pleasure, too, that it leaves nothing to be desired. The fund of information it contains is wonderful, and no one but a publisher can realize the vast amount of thought and labor necessary to put out such a publication.

I am a newspaper man and practical printer of thirty years' standing, and I know what the labor is. I am beginning to set out a commercial apple orchard at Piedmont, in the Ozarks, and I have learned a great lesson from reading The Fruit-Grower. All the harm I wish you is that your circulation will reach a million.

Arkansas. E. C. WATERMAN.

THE ROGUE RIVER VALLEY SOUTHERN OREGON is making good this year on the Largest Crop of Apples, Pears and all other fruits in its history. Prices are sure to be good for our specialties. It is this habit of bearing phenomenal crops when other districts are out of commission that makes this valley, with its incomparable climate, the best fruit district in America. We have the best buys on our lists this season in ten years' business. Write for lists. One of the few districts where prime young bearing orchards can be obtained.

ROGUE RIVER LAND COMPANY, 407 M. F. & H. Block, MEDFORD, OREGON
Ten Years in Business—Not One Dissatisfied Customer.

"The Moncrief System of Pedigreed Trees"

Pedigreed horses? Yes. Pedigreed hogs? Yes. Pedigreed cows? Yes. Pedigreed seeds? Yes. Why not pedigreed trees? The Moncrief System answers this question. Write for the valuable book "Pedigreed Horticulture," mailed free.

THE WINFIELD NURSERY CO.
Box I. Winfield, Kansas

KEES FRUIT PICKER GATHERS APPLES, PEACHES, ETC. as carefully as by hand with less work. Saves climbing ladder. No fruit out of reach. No wires to injure fruit or tangle in branches. Fruit drops into cloth bag, which can be filled before lowering. Price complete, except long handle (a fish pole will do), 75c, postage paid. Your money back if not O. K.
Circular sent on request. Address Box 425.

For Boys *and* Girls

There's an offer of special interest in an advertisement on page 12 of this issue of The Fruit-Grower.

READ IT NOW

TRACTOR AND FARMER

Two Fruit Farmers Find the Tractor Cheaper Than Horses For Cultivating and Hauling

The article in a recent issue of The Fruit-Grower telling the experience of a Michigan fruit farmer in using motor turcks in marketing his crops has attracted much attention from Fruit-Grower readers, who want to know more on the subject. We are glad, therefore, to report the experience of two other Fruit-Grower subscribers, one of whom uses a tractor to cultivate his orchard to produce the crop of fruit, and then uses the same machine on the road to haul his fruit to market.

H. W. Gipple is generally regarded as one of the best orchardists in Arkansas, and his orchard near Bentonville is one of the show orchards of the state. Mr. Gipple tells his experience as follows:

"I used an Avery motor truck in cultivating my orchard last season and it certainly gave me satisfaction. I believe in intense cultivation in the orchard during the growing season, and usually the latter part of June and the early part of July it gets so warm in the orchard, hemmed in on all sides by trees in heavy foliage, that a team can hardly stand it to work one-half of the time. In fact, in the season of 1910 we did most of the cultivation at night on account of the heat, and then could not get done near what I wanted to do. Therefore I decided to buy a tractor in 1911 and finally decided on an Avery, and I want to tell you that we could cultivate regardless of the heat.

"We did our work mainly with spring tooth harrows and used spike tooth harrows for smoothing. We used five sections of spring tooth and six sections of spike tooth harrows; in other words, we took a whole middle between two rows of apple trees at once. Six good horses would be required to pull the same machinery, and I am satisfied that we did twice as much work as six good horses could have done, besides getting the work done just when we wanted it done. The equipment necessary to operate the truck and machinery following was as follows: My two boys, 18 gallons of gasoline and one gallon of lubricating oil, per day.

"My main object in buying this motor truck was for cultivating in the orchard (which it did to my satisfaction), and incidentally to help in the hauling of the fruit in the fall, but I found that the long suit for this machine was in hauling on the road.

"We are four miles from the cold storage and shipping point, and with an average crop of apples such as we had last year, it requires ten teams to move it. Yet we have handled the entire crop with this truck and had a little time to spare, but of course we ran it twenty-four hours each day.

"It is equipped with a powerful swivel searchlight, which makes it very convenient for light in any direction for loading or unloading, and in fact the night run was a little more satisfactory than the day run, on account of there being no teams on the road and we could just put on our load and skip along at a rate of eight to ten miles an hour and nothing in the way to bother.

"The consumption of gasoline is less on the road than in the field, about sixteen gallons every twelve hours. The cost in handling the crop in this way is just a little more than one-half of what it is with horses. One of the main features in favor of the truck is the condition of the fruit when it arrives at the station. We use both barrels and boxes in packing fruit and it is next to impossible to transport fruit in boxes four miles on a common wagon and not have it badly bruised and cut, whereas with a motor truck the springs and heavy load make it ride like a passenger coach.

MR. GIPPLE'S TRUCK LOADED WITH 56 BARRELS OF APPLES

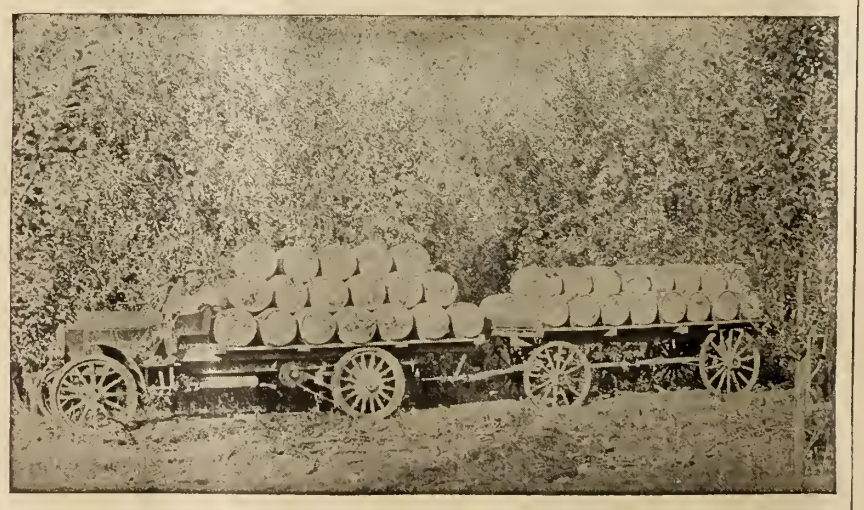
"I send you a photo of the truck loaded with barreled apples, starting to town. If there is any other information that you desire in reference to this truck, inform me and I will be pleased to forward it."

Our other report comes from Senator H. M. Dunlap, Savoy, Ill., who operates 1,600 acres of orchard in four counties of Illinois. Senator Dunlap is a business man in the strictest sense and considers cost of production very carefully in handling his extensive orchards. He also uses an Avery tractor, but so far has used it only for hauling fruit to shipping station or to storage. He writes as follows:

"I used an Avery truck last fall in getting my crop of 20,000 barrels of apples to shipping station and to cold storage at Champaign. Our haul to storage plant was four miles, making eight miles for the round trip. With this truck we made four round trips a day, loading the truck to full capacity and hauling a trailer behind. In this way we could haul sixty to seventy barrels at each trip, or 240 to 280 barrels a day. Including loading and unloading every load, we worked only nine hours per day, and handled the fruit in good condition. Our hauling was over a dirt road.

"This spring I expect to equip this tractor with double-acting disc harrows and cultivate an orchard of 150 acres with it. I will also use it for plowing if necessary, equipping it with three bottom plows."

Who else, among Fruit-Grower readers, uses tractors, either for orchard cultivation or in hauling fruit to market? We know that a great many are using such machines, and that a great many more persons want to do so. Let's hear from everyone, so that the experience may be helpful to every fruit farmer.



HAULING APPLES WITH TRUCK FROM THE DUNLAP ORCHARD

Need More Marketing Information.

Mr. H. G. Fletcher, manager of the Grand Junction (Colo.) Fruit Growers' Association, writes that he hopes that The Fruit-Grower will keep up its system of crop reports this season, and that the service will be extended to include every fruit producing section in America. He also suggests that it might be a good idea to have reports every month from the principal markets, as to receipts of fruits, prices, etc., and thus growers in every section of the country would know the competition their fruits meet when placed on the market.

These suggestions are both good. We are trying to improve our crop reporting service, but it is singular how hard it is to get our correspondents to fill out their cards promptly. This year we are urging them to send reports regularly, or to advise us that they will not do so, and then another crop reporter will be secured.

Reporting market conditions is also essential, and yet this is hard to do satisfactorily in a paper which is published only once a month. Perhaps when we get that new press The Fruit-Grower will appear semi-monthly. But that's another story.

There are a great many enemies of the grape. In the home vineyard much damage to the bunches can be prevented by bagging. Do this when the grapes are the size of buckshot.

Do You Want

A Camera—A Watch
A Bicycle
?

Any boy or girl who reads this advertisement can earn a watch, a camera or a bicycle—or all of them—by devoting a few hours of spare time this summer to getting subscriptions to The Fruit-Grower in their neighborhood. Besides paying liberal cash commissions for subscriptions, the camera, watch or bicycle will be given as an extra inducement for gettng a certain number of subscriptions.

Now, here's your chance, boys and girls, to get just what you have wanted for so long. The subscriptions to The Fruit-Grower can be secured very easily, and you will have your premium almost before you know it. There's no chance for you to lose, for you get a cash commission for every subscription you send us.

Write for full particulars of this offer, and ask for sample copies of The Fruit-Grower, so that you can get to work at once. Write today.

The Fruit-Grower

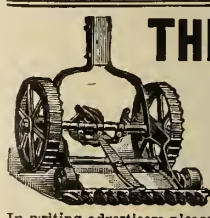
Subscription Dept. **ST. JOSEPH, MO.**

AGENTS! BIG PROFITS

The only stropper that strops any razor diagonally Guaranteed for Life.

Brand't patented Automatic Razor Stropper Automatically puts a perfect edge on any razor, old style or safety. Big seller. Every man wants one. Write quick for terms, prices and territory.

G. R. Brandt Cutlery Co., 84 W. Broadway, New York

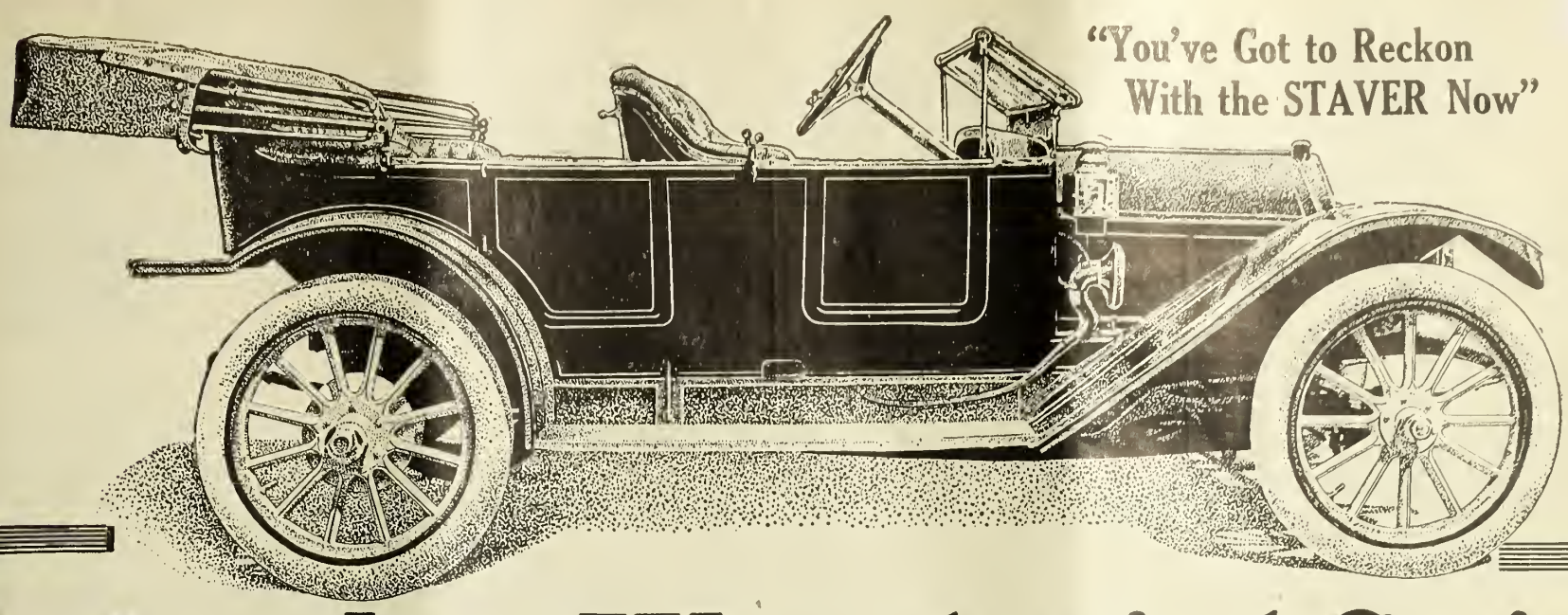


THE CLIPPER

There are three things that destroy your lawns: Dandelions, Buck Plantain and Crab Grass. In one season the "Clipper" will drive them all out.

Clipper Lawn Mower Co. Dixon, Ill.

In writing advertisers please mention The Fruit-Grower.



Here Is a *Wonderful* Car!

You have a right to demand *the very limit* in quality and value when you buy an automobile—*you get it in the* STAVER.

Judge it by *any* standard—compare it with *any* car. Forget the low price and measure it up with such great machines as the Packard, Pierce-Arrow, Locomobile, Lozier, Peerless, Fiat or any other car selling for $4,000 *or more*—

then decide—

Get right down to *facts*—weigh *all* the evidence—and you'll find the STAVER is the *sensation* of the automobile field today.

STAVER

Every one of the eight splendid STAVER models is absolutely in a class by itself. We stand ready to *prove* that the prices—from $1,750 to $2,500—represent *the most generous automobile values that have ever yet been offered.*

Compare STAVER Construction With That of *Any* Car

It's out of the question to begin to tell the great story of the STAVER in this small space. Here are just a very few features that will give you *some* idea of its quality:

1. **Superb Motor**—"T" head, cast en bloc; long stroke, 2½-in. valves; large water space entirely surrounding valves, the hottest part of the engine. Enormous power, in **excess** of the rating. **The most powerful automobile engine, in proportion to size and weight, on the market.**
2. **Exclusive Oiling System**—absolutely automatic, constant splash, with no pumps or pipes. Timing gears enclosed in crank case, receiving exactly the same lubrication as the motor. Only one place to oil on the entire motor.
3. **Four-Point Suspension**—motor hung in a subframe—lower center of gravity, absolute rigidity—gives **straight line drive.**
4. **Multiple Disc Clutch**—composed of 39 sawblade steel discs floating in oil. Enclosed in flywheel.
5. **Transmission** of the finest Chrome Nickel-Steel which has undergone six hot treatments; selective sliding type.
6. **Full Floating Rear Axle**—all drawn steel, tremendously strong.
7. **Imported Annular Bearings** throughout—finest known quality.
8. **One-Piece, 3-Bearing Crank Shaft.**
9. **Aluminum Crank and Transmission Cases.**
10. **Double Truss Rod Construction**—extending from rear axle to the center of the frame, taking off jerks, jars and strains on the car over rough roads.
11. **Genuine Mercedes Type Radiator**—square tubes, double required capacity; never leaks.
12. **Integral Cam Shafts** mean accurate firing.
13. **Nickel-Steel Gears and Shafts**—tough, hard, wear-proof.
14. **Heavy Worm and Worm Wheel Steering Gear**—adjustable.
15. **Two Extra Heavy Internal Expanding Brakes**—no bother with oil running down spokes. Either brake capable of holding fully loaded car on steepest hill.
16. **Long, Easy Riding Springs**—insuring perfect comfort for passengers and increasing life of car.
17. **Positive Brake Equalizers**—prevent skidding, save tires.
18. **Steel Body made in our own factory.**
19. **Finish**—lead and oil system, applied after body has been sand-blasted.
20. **Upholstering**—finest *hand-buffed* leather over genuine curled hair and spiral springs, **11 in. deep.**

Send NOW for the STAVER Books

Get all the facts *right in front of you.* Read the story of the blazing of the great Transcontinental Road by the STAVER (we'll send you a Route Book free). Our handsome and elaborate descriptive literature fully explains and illustrates every single point.

Don't wait until your neighbors are skimming the roads in their cars—find out which car you want **right now.**

Staver Carriage Co.

Dept. 4535

76th and Wallace Sts. CHICAGO, ILL.

(95)

STAVER CARRIAGE COMPANY

Dept. 4535 76th and Wallace Sts., Chicago.

Gentlemen:—I am willing to give you a chance to *prove* the claims you have made for the STAVER. Mail me all your latest literature and include a copy of the **Transcontinental Road Book**, free of charge.

Name _____

R. F. D. or Street No. _____

City _____ *State* _____

ABOUT THE GOOSEBERRY

How They Are Raised at Rocky Ford, Colo., Where the Oregon Champion Thrives

Some twelve years ago, a few Oregon Champion gooseberries were planted here for the purpose of determining its adaptability in this section. Previous to this shipment the standard varieties of the east, such as Houghton, Downing and Pearl had been exclusively planted. The Pearl and Downing had the objectionable features of not combining heavy yielding qualities with the size of the berries and the Houghton was a heavy yielder but the berries were small in size and as plants grow older a strong tendency to further diminish in size. After thorough trial it was found that the Oregon Champion combined the good qualities of the above varieties with none of the objectionable ones. I have discarded all but this variety because of its prolificacy, size, and ease of picking, as the berries grow on the outside of the bush, and because it has fewer thorns than other plants, and hardiness which includes immunity from plant diseases and low temperatures.

The gooseberry has been found adaptable on any well drained sandy loam. At the same time good crops have been obtained on the heavier soil types though I have never seen

PICKERS IN THE FIELD OF MR. CRABB.

what the results would be on soil of adobe structure. In this, as in other crops where irrigation is not practiced, the main feature is to conserve the soil moisture, and being an early producer, it will yield fair returns to the grower. But under irrigation the crop yields its maximum and gives a heavy, juicy, firm berry that stands up better under shipping conditions than where lack of moisture prevails during the ripening season. Therefore a sandy loam, irrigated or subirrigated, is the proper type to obtain the highest results.

In planting I prepare the ground by plowing at least eight inches deep, as this is the last real plowing the land gets, then work it down to a fine tilth. After the preparation is completed, the land is marked out with a hand marker set so as to make hills four by six feet apart. At each hill I then take the spade and dig out a hole approximately six or eight inches deep and my man follows me with the plants, setting them carefully in each hole, after removing any bruised roots, tamping the dirt firmly around each plant. As I complete the planting of each row, water is immediately turned into the row and let run for about twelve hours. After the field is planted and has had this preliminary irrigation, the water is shut off for three or four days, at the end of which time I again give them water for twenty-four hours and that will usually suffice for ten days. To get a small revenue from the ground the first year, I usually plant one row of Mexican beans between each row and two hills between each plant. As the ground has to receive cultivation and the weeds come rapidly it adds to the incentive of better care to have some crop such as beans, which also are of fertilizing value. However, the most effective fertilizer is stable manure and I aim to give the land a dressing of this each fall to the amount of six tons to the acre.

Implements.

As to cultivation, the first is done with a five-tooth cultivator as early as April, to loosen up the soil and aerate the roots. This is a deep cultivation for it is quite necessary to get the soil warmed up as early as possible to get a luxuriant growth and earlier fruit. I then follow this up with a fourteen-tooth cultivator having a knife on the two last teeth that is as wide as the row. This implement levels the ground and the knife gets all the weeds in the row. Hoeing between the plants is then done and the fourteen-tooth harrow is again brought into use for mulching the surface. The crop receives about three irrigations before picking commences, the last being of double duration to the others. The fourteen-tooth harrow is used to put the rows in good tilth after each irrigation and it also plows in the water furrows.

During picking season the ground becomes hard and as soon as picking is finished, furrows are again made and the field is given a thorough irrigation, after which the soil is stirred up deeply with the five-tooth and mulched with the fourteen-tooth cultivators. I then give a good irrigation in the fall after the leaves drop, for this keeps the roots from drying and freezing during the winter.

In this section growers harvest the crop by stripping the bushes over a canvas that is laid under the bush. This canvas is 3x3 feet and the picker wears a heavy glove to protect the hands. The canvas is then taken to the fanning mill, where the berries are cleaned of leaves that have come down with the stripping. From thence they are put in quart boxes to ship, and if sold to the factory they are shipped in the receptacles furnished by them. I usually employ girls to do picking, paying therefor five cents a gallon. It is enjoyable work to them, and is looked upon much as a vacation from the drudgery of house work, giving them a little of our beautiful sunshine and invigorating atmosphere. The pickers will average from thirty-five to fifty-three gallons per day.

Got Twenty-Five Cents a Gallon.

Now as to the yield of this Champion gooseberry, I realized enough the second year to pay for the cultivation. The third year the yield was 1,000 gallons from the patch of three-fourths acre; the fourth year my harvest was 1,365 gallons from the same plot of ground and last year, or the fifth from planting, the amount was increased to 1,500 gallons. The third year when I received 1,000 gallons I shipped the product to Colorado Springs and realized a net price of twenty-five cents per gallon. The last two seasons the crop has been sold to the local canning factory at a net price of twenty-one cents a gallon.

From this it will be seen that the gooseberry is profitable. First, because it is an early fruit and comes at a time when there is a demand for fruit as the market is nearly always bare; and secondly, it pays good returns at an early age of the plants. I now have only three-fourths of an acre but the coming season I shall plant them in a young cherry orchard that will be planted this spring. In

SHERWIN-WILLIAMS
LIME-SULFUR SOLUTION

This combination of lime and sulphur is as strong a solution as can be made, having all the sulphur combined. It contains practically no sediment, eliminating waste, and is therefore most effective and economical.

When combined with S-W New Process Arsenate of Lead (Neutral) it forms the best possible insecticidal and fungicidal spray.

Spraying your trees with S-W New Process Arsenate of Lead and Lime-Sulfur Solution, properly combined, will control insects and diseases and promote a vigorous, healthy growth which is a necessary factor in producing good fruit.

There's an S-W Agent in your locality. Write for his name.

THE SHERWIN-WILLIAMS CO.
INSECTICIDE AND FUNGICIDE MAKERS
667 CANAL ROAD CLEVELAND, OHIO

Sent free

This book of 120 pages gives complete information on spraying for insects and fungus diseases. In addition, it has a complete spraying calendar in the back of the book. Write for a copy today. 1249

HAMILTON MADE SPRAYING HOSE

will spray your trees without trouble or expense for several years for one cost. One trial sufficient to convince.

PERFECT SPRAYING HOSE	VULCAN SPRAYING HOSE
Every length will stand 600 pounds and guaranteed for 300 pounds.	Stands 350 pounds, guaranteed for 100 pounds working pressure.
½ inch, per foot.....15c	½ inch, per foot.....12c
⅜ inch, per foot.....14c	⅜ inch, per foot.....11c

All coupled complete, 50-foot lengths, freight prepaid. Order from your dealer or shipped direct from factory, cash with order.

Hamilton Rubber Manufacturing Company
TRENTON, NEW JERSEY

Spray and Save the Profits
You'll lose if you don't protect fruit and ground crops against insects.

ELECTRO Arsenate of Lead
(The Powdered Form)

gives certain protection because it is sure death to all leaf-eating insects. It's the strongest arsenate of lead—100% stronger than other brands—yet is absolutely safe to use on tender foliage. Electro is the only kind in non-crystalline form; hence sticks longest, stays suspended, and is distributed better than any other. Mixes instantly with water or can be used dry as a dust. This is, by far, the most economical insecticide you can use.

Send for tests by Agricultural Experiment Stations which prove our claims.

Send for "Spraying Simplified"
A book of 68 pages, chock full of definite, reliable information on how to know insects and fungous disease and what to do to them. Sent free if you mention this paper.

THE VREELAND CHEMICAL CO.
44 CHURCH STREET NEW YORK

Sulphur, Nitrate of Soda
Blue Vitriol

If you make your own Lime and Sulphur Solution, write us for prices on sulphur. We carry large stock in barrels and sacks. Ours is the best and cheapest brand for making solution. Goes into solution readily and stays in solution. We also carry large stock of best Nitrate of Soda in 200-pound sacks, ready for shipment. You can save money and get prompt service by dealing with us.

Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing

Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*

M. BRUNSWICK & CO., Rochester, N. Y.

PATENTS That Protect and Pay
Send Sketch or Model for FREE SEARCH
Books, Advice, Searches and Big List of Inventions Wanted FREE!
Watson E. Coleman, Patent Lawyer, Washington, D. C.

In writing advertisers please mention The Fruit-Grower.

doing this, from the above figures you will note that I will be obtaining fair returns from my orchard before the cherry trees begin to bear, and the trees will get the proper cultivation, fertilization and irrigation at the least expense. These trees are planted eighteen feet each way and I aim to put in two rows of gooseberries between the rows and two plants between the trees. The gooseberry is a bush that is not affected by the shade of the trees so that the yield will no doubt be satisfactory to any one so doing. W. M. CRABB.

Colorado.

Gooseberries in Kentucky.

Mr. Henry W. Rahm, Stithton, Ky., sends us a picture of his gooseberry field, which unfortunately is too dim to permit us to make a good cut of it. Mr. Rahm is quite extensively interested in gooseberry culture, and has been successful—so much so that he says he will plant 15,000 more plants this spring. When he set his first planting of three acres a few years ago his neighbors thought he was crazy, but now they are willing to admit that he has made money from this fruit.

Mr. Rahm sold his crop last season for 25c per gallon, delivered at express station. His crop on somewhat less than four acres of ground amounted to 10,000 gallons. One man picks from 75 to 100 gallons per day, being paid 3½ cents a gallon for the work.

The pickers use shallow wooden boxes holding about four gallons each, which are pushed under the branches, and, with their hands protected by heavy gloves, they strip the berries from the branches, removing at the same time part of the leaves, of course. The boxes of fruit are taken to the packing shed, and there the berries are run through a fanning mill, to remove leaves and trash; imperfect berries are removed by hand, and the fruit is ready for packages. For shipment clean sugar barrels are used as packages, and the fruit carries perfectly.

Grand Junction Association All Right.

The editorial in your issue for March touching upon the condition of the Grand Junction Fruit Growers' Association conveys the idea that the plan adopted by this association has not been a success and that the last annual meeting developed conditions necessitating a change. This is a mistake, as this association was never in as good shape as at the present time and since the annual meeting has absorbed the Grand Valley Association.

The statement that the holders of stock are not allowed to sell is misleading. The rule is that no one but a fruit grower can buy stock of the association and those wishing to sell must deposit the stock with the secretary for sixty days and if not sold or taken up by the association it can be sold by the owner and will be transferred. The object is to make it a fruit selling organization and not an investment proposition. Many of the original growers have sold their orchards and held their stock because, until the past three years, it has been a splendid investment. Within the past five years a number have purchased stock as an investment, but they have owned or controlled orchards. There have been two or three light crops the past five years and no dividends have been paid, but the average since the organization has been more than 10 per cent.

Fifteen years ago I purchased four shares of stock, paying cash for three in order to assist in the establishment of an evaporator. A good many others purchased stock then and later to provide a capital with which to do business, and a few years later I sold five shares. I now have twenty-three shares, all accumulated from stock dividends declared at the instance of the large majority of the holders in order to increase the working capital. During the same time cash dividends have been paid a number of times. It will be seen that the growers who have been with the concern for fifteen years have paid very little cash for their holdings and have received large dividends, especially those who years ago held the limit of 300 shares, which are par at $5 per share. Many times when dividends have been declared it has been optional as to stock or cash and a majority have taken stock in order to help the association with the capital.

The charge for handling the fruit has been 5 per cent on the net returns and of late this has been thought too small and the movement the past season to make a change has come from the small as well as the large holders, as it is the general feeling that those who have helped carry the organization should have a fair rate of interest on their investment. There was little opposition to the increase to 7 per cent, but the plan to add 1 per cent for a working capital was not adopted, as your editorial claims.

There was no fight between the holders of stock by growers and non-growers and very little fight at all over the questions which form the basis of your article; they all stand on the same basis, but the slight trouble was entirely over minor questions of management, and not as to the fundamental working principles of the association. Those minor questions also were largely a matter of lack of knowledge on the part of the growers and not because of any fault in the rules of the organization, which have worked so satisfactorily that we have an association that is not equalled in the United States. Years ago the management began handling many commercial lines during the dull seasons and jobbing to a large extent is carried on and this provides work for the expert men who must be employed during the fruit season, enabling the association to keep good men year after year and many of them have been there for ten years and more.

The secret of the success of this association is largely due to the loyalty of the stockholders, hundreds of whom have never shipped a box through any other avenue or purchased a dollar's worth of supplies elsewhere; this gives the manager confidence that when he sells a car of fruit he knows that he can deliver the goods and he can thereby command a better price. It is doubtful if any other plan could be devised which would work out more successfully, not only to the investing shipper but to the man with a single share of stock.

Colorado. A. C. NEWTON.

Acetylene Gas for Cooking.

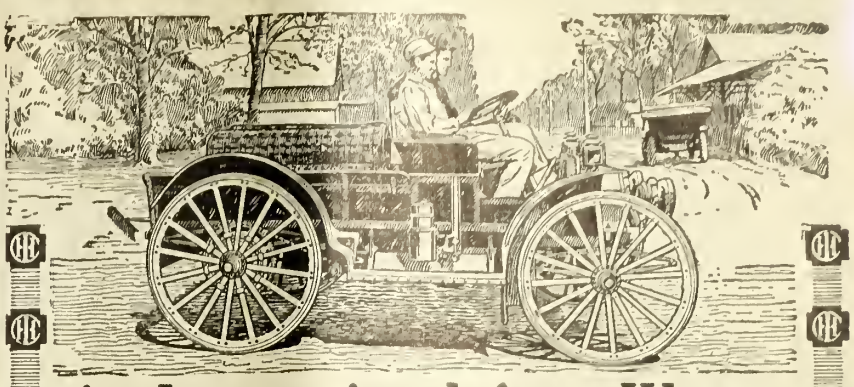
Last month much was said in articles in The Fruit-Grower regarding ways of lightening work for housewives in the country. It seems that no one suggested that an acetylene lighting plant be installed, and that such plant will furnish gas for cooking as well as for lighting. In fact, not every person knows that acetylene gas is now used for cooking—in fact, it is used just as manufactured gas is used in our cities.

This will be good news to thousands of country women, who have been in favor of acetylene gas for lighting, and who have additional reason now to urge that an acetylene plant be installed, since the gas can also be used for cooking.

No argument is needed to show the convenience of cooking with gas. In the cities it is almost impossible now to secure a tenant for a house which is not equipped with gas fixtures. Every person who rents a home wants to cook with gas, for a world of work is saved where gas is used. Now, why should not our country women be favored the same way? Acetylene gas for country homes is just as safe as gas in city homes, and the cost of using it for cooking will not be any greater. In fact, acetylene gas, intelligently used, will likely not cost any more than gasoline for cooking, and is infinitely more safe.

Now, men, if you want your wife to have her work lightened, investigate an acetylene plant. You think as much of your wife and daughters as the city man, don't you? Then provide them with the same conveniences that city women enjoy, and then there will be less talk of the exodus of our people from farm to city.

The standard spray for San Jose scale is lime-sulphur. It may be applied in the fall, just after the leaves drop, or in the spring before the buds open.



An International Auto Wagon Will Earn Its Keep on Your Farm

IT is in the seasons when your horses are all needed in the field or when the weather is most unfavorable for driving, that the International auto wagon shows its real worth. It is always ready to take the milk or cream to the creamery, deliver produce and fruit, bring your purchases from town, or take the children to school.

With it you can oversee the farm, do all light hauling, visit any friend within thirty miles, take the family driving or to church.

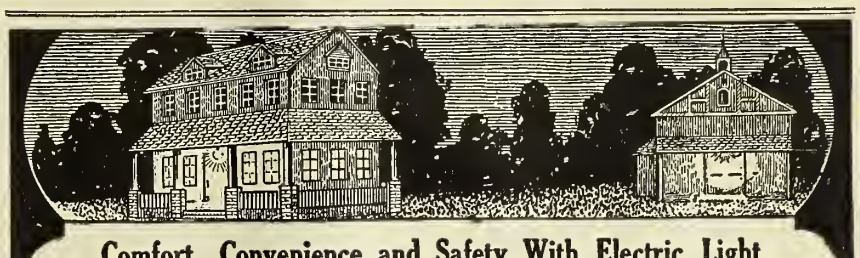
International Auto Wagons

are sturdy, every-day workers. The frame, axles and wheels are strong enough to carry any load the wagon should hold, over any road. The 20-H. P engine has power enough to meet any road emergency. The transmission gives two forward speeds and reverse, with no danger of stripping gears. The brakes are powerful.

The International auto wagon is just the car for farmers. See the I H C local dealer and get facts, figures, and catalogues from him, or, write

International Harvester Company of America
(Incorporated)
Harvester Building Chicago U S A
I H C Service Bureau

The purpose of this Bureau is to furnish, free of charge to all, the best information obtainable on better farming. If you have any worthy questions concerning soils, crops, land drainage, irrigation, fertilizer, etc., make your inquiries specific and send them to I H C Service Bureau, Harvester Building, Chicago, U. S. A.



Comfort, Convenience and Safety With Electric Light

Life on the farm formerly meant long evenings spent in the dim light of smoky, smelly oil lamps—answering emergency calls at night in the dark—doing the chores by the uncertain light of a dangerous lantern that was a constance menace to the safety of buildings filled with inflammable materials.

The new life on the farm is different. Farmers can now have the new Tungsten electric lamps throughout their home and farm buildings. The mere turn of a switch will give any part of a house or barn brilliant light. Every electric lamp is much brighter than an oil lamp, perfectly safe, controllable from a distance. A small inexpensive and simple electric lighting plant makes this possible. To install an electric plant it is only necessary to put up a few wires, and set up in a basement or in any convenient outbuilding, a small gas engine, a simple switchboard and a storage battery called

"Chloride Accumulator"

The storage battery gives the farmer situated outside the reach of the wires of a Central Station all the advantages that city inhabitants enjoy. The gas engine need only be run a few hours occasionally to drive the dynamo, at which time it stores the battery with electricity to be used wherever and whenever needed. The rest of the time the engine can be used for doing other work about the farm.

Bring your farm up to date by installing a modern electric lighting plant. Full details are given in our book, "Farm Electric Lighting Plants."

THE ELECTRIC STORAGE BATTERY CO.
1888 Philadelphia 1912
New York, Boston, Chicago, St. Louis, Cleveland, Atlanta, Denver, Detroit, San Francisco, Toronto, Portland, Ore., Seattle, Los Angeles.

MYERS SPRAY PUMPS
ALL KINDS
NOZZLES, FITTINGS, ETC.

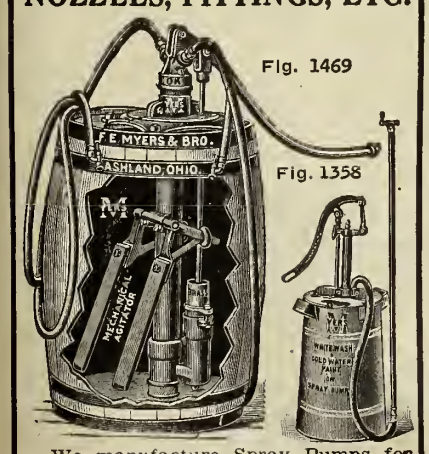


Fig. 1469

Fig. 1358

We manufacture Spray Pumps for every need, from the small hand and bucket pumps to the large power outfits. Send for catalogue and prices of Pumps, Hay Tools and Barn Door Hangers

F. E. MYERS & BRO.,
160 ORANGE ST., ASHLAND, OHIO

BERRIES AT NEOSHO, MO.

Growers Organized and Ship Through Associations—Character and Preparation of Soil

Neosho, Mo., is famous for its Aroma strawberries, which are shipped to practically all markets from Denver east and from Kansas City north. The berry growers are organized and ship through associations, and fruit is graded and packed right. Mr. J. B. Graves, manager of the Neosho Fruit Growers' and Shippers' Association, has kindly furnished us with an article regarding the berry industry in that section. By the way, the association of which Mr. Graves is manager subscribes for a copy of The Fruit-Grower to be sent to every member of the association, this arrangement being renewed year after year. This shows that the members want to keep in touch with what is going on in the horticultural world. Mr. Graves writes:

"In this section strawberry growing is a distinctive industry, and it is the most important branch of farming. Frequently the owner of eighty acres of land makes more money from two acres of strawberries than from the product of the remainder of his land. Strawberry growing is an established business, and not a fleeting fad. It furnishes profitable employment for more men, women and children and brings more money into this section than any other crop grown.

"The business is growing rapidly. Fifteen years ago there were not to exceed a dozen commercial growers within ten miles of Neosho, and not even express shipments of fruit were made. At that time some persons feared overproduction, but this is no nearer now than then. Consumption and distribution have kept pace with production. It is now easier to market 100 carloads at good prices than it was a few years ago to market ten cars. The greater the number of cars grown the greater the number of buyers attracted.

"Our section is admirably adapted to growing strawberries. The famous Ozark strawberry belt is 400 miles long and 200 miles wide, the west line of the belt being the west line of Missouri. In 1911 407 cars of berries were shipped out of this district, worth $1,000 a car. Of this number 130 cars, or over 31 per cent, were grown in Newton County, of which Neosho is the county seat. Within a radius of twenty-two miles of Neosho are twelve shipping associations, which shipped 200 carloads of strawberries last year. Neosho alone has two large and successful associations, which get for their members from 25 to 50 cents a crate more than the growers could get if each marketed his own crop on the street. The success of the strawberry growers here is due to the work of the associations.

Character and Preparation of Soil.

"Our growers prefer new land from which timber has just been removed, if possible to secure it. Next best is old land made rich with manure and leguminous crops turned under. Clover, cowpeas, soy beans and manure are the friends of strawberry growers. Low, flat, wet, cold land should be avoided.

"Land should be put in prime condition before planting. If possible, it should be plowed in fall or winter, or at least as early in the spring as the soil will work well. New land should be broken twice, plowing both ways. It should be harrowed and dragged until it is made fine and firm. Berry ground should never be planted when it is cloddy and loose. In such a bed the plants will dry out and die. For strawberries, soil should be as firm as for wheat and as fine as for garden seeds.

"Before setting the plants the field should be marked off both ways with a two-horse corn planter, or with some other marker which suits one's convenience. Make the rows four feet apart one way and three feet apart the other, requiring 3,630 plants per acre to set. The object in setting plants in rows both ways is to enable the grower to use plows and harrows in the cross-cultivation, to save hand labor, and to reduce the cost of production.

"The only variety to plant here commercially is the Aroma. It is the best berry we can grow, being a good looker, the best shipper and the best seller. The blossom of the plant is perfect, and needs no pollenizer. Plants for setting should be taken from a bed which has never fruited and should have a good crown and root system.

"Planting is a most particular job and great care should be exercised. Leaves should be removed and roots shortened to four inches. A dibble ten inches long by about three and a half inches wide is the best implement with which to set plants. The weight of the body should be thrown upon the dibble, thrusting it into the soil deep enough to receive the full length of the roots. The roots should be placed in the opening and pushed down straight with the dibble, keeping the crown of the plant level with the surface of the ground. Then thrust the dibble down by the side of the original opening, about an inch away, and press the soil firmly against the roots, and with a movement of the dibble level the surface of the soil about the plants, and the work is done. Immerse the roots of the plants in water immediately before setting, and do not allow them to become dried by the sun and wind while planting.

Cultivation and Placing Runners.

"As soon as the field is planted the rows should be cultivated with a one-horse harrow or spring-tooth cultivator, to remove the tracks of the setters and to prevent the soil packing after a rain. Strawberries need to be cultivation often and well. Five hoeings and fifteen cultivations are sometimes necessary to keep them clean and in good condition. Cultivation should be kept up until frost. Implements used should be of various kinds, some for fine work and some for coarse, some for shallow work and some for deep cultivation, and it will be found that during the season it is sometimes best to use one and sometimes another. The condition of the soil will determine which implement can best be used. All these tools are cheap and a good outfit can be bought for a few dollars.

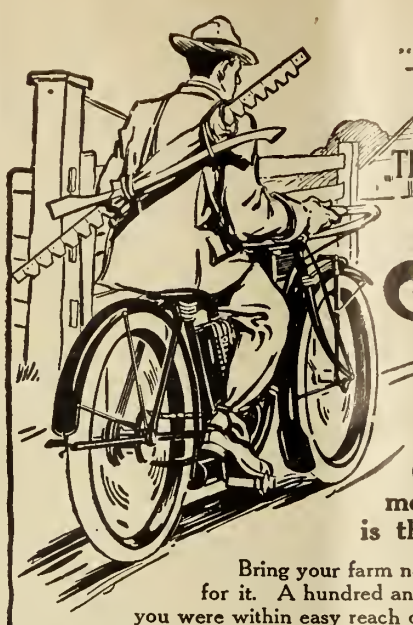
"After setting the plants should be watched and all blossom stalks pinched off as soon as they appear, to force runner growth. When runners begin to grow, cross cultivation ceases and the runners are placed by hand where the new plants should grow, otherwise the plants would get too thick in some places and too thin in others. The cultivators should be drawn in the same direction every time, for they draw the runners along the side of the row and help to distribute and set them. In training the plants they should be placed about six inches apart. When enough plants have been secured to make a row eighteen inches wide, the rest may be allowed to run out into the middle or they may be pulled off. If plants get too thick, they should be thinned out with a hoe, a harrow, a potato hook or some such implement. The final cultivation will destroy all needless, weak plants in the middle and leave the field in good drainage condition for the winter.

Handling the Crop.

"Box and crate material is bought by the business manager of the association for all the members, and the latter take out the supply needed before spring opens. Then boxes and crates can be made up before the spring rush. If a grower does not have cash to pay for his crates, an arrangement is made with our local banks to get the money for him. The member simply makes his personal note for the money he needs and attaches to it an order to the manager of the association to pay to the bank the first money due the grower for berries furnished. If a grower needs money at harvest time to pay his pickers and to meet other expenses, our banks will advance him 40 cents per crate without interest. These bank accommodations are of great help to the growers, and show that our financial institutions are not afraid to stand behind the berry business.

"Late frosts are the most serious to contend with in growing strawberries here, and some of the growers are using heaters very satisfactorily.

"Picking usually begins the last of



"Count the Indians on the Road."

The Indian Motocycle

Get to know the value of a motorcycle on the farm and this is the machine you will order.

Bring your farm nearer to town. Modern methods call for it. A hundred and one occasions arise when you wish you were within easy reach of the hardware store, the post office, the doctor and your friends.

Get an Indian Motocycle. It is the busy man's automobile. Always ready for any journey, at any speed, over any kind of road. Simplest machine to ride. A twist of the wrist applies and releases the power. The rest is automatic. Absolute control assured at all times and instantly. Most economical to run. The six Indian Motocycles of the Detroit, Mich., Police Department covered 30,000 miles in 7 months at a total upkeep cost of $13.13, or $2.18 per machine.

4 H.P. Single Cylinder, complete . . $200
7 H.P. Twin Cylinder, complete . . . $250

Get to know more about the Indian and its value to you. Write for free illustrated catalog describing all 1912 models and improvements.

MAIL A POSTAL TODAY!

THE HENDEE MFG. CO., 823 State Street, Springfield, Mass.
(Largest Motorcycle Manufacturers in the World)
Chicago Denver San Francisco London

"Firestone" TIRES

10 Years Perfect Record

TEN years without an "off" year in wearing quality is the "Firestone" record of supremacy. That is the result of extra cost we put into making "Firestone" tires—stouter construction—more durable rubber—extra workmanship—more rigid inspection.

Let us tell you why you should use Firestone Tires and Demountable Rims on *your* car

The Firestone Tire & Rubber Co.
"America's Largest Exclusive Tire & Rim Makers"
Akron, Ohio and All Principal Cities

"Most Miles Per Dollar Of Cost"

Send Your Name on a Postal for Books FREE

Find Out About the Forkner Light-Draft Harrow!

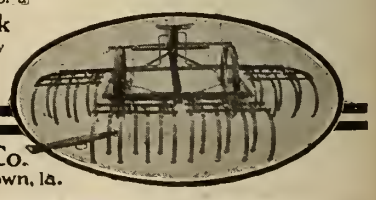
THIS low-priced harrow for orchards and vineyards—and general use—is a world-beater. Wonderfully light of draft—weight carried on wheels, not on horses' necks. Great worker—20 to 30 acres a day with one team—and every inch of soil **cultivated thoroughly—lifted and turned in long wavy level.** Best of all—it hangs low and has great extension—making it a snap to work right up to trees without horse or driver disturbing boughs or fruit.

Find Out in Your Orchard—At Our Risk!

WRITE TODAY for catalog and 30 day trial offer. Pick the machine suited to your soil and orchard and use it for a month—and send it back if you don't find it the finest cultivator made.

Send for This Free Book

"Modern Orchard Tillage"—written by highly successful orchardist—contains information that may be worth hundreds of dollars to you. Sent for the asking.



Light Draft Harrow Co.
907 E. Nevada St. Marshalltown, Ia.

No-Rim-Cut Tires—10% Oversize

Our Profit 8½ Per Cent

The Truth About Cost of Tires

Tires can be made to fit any price which users want to pay. The only just comparison is the cost per mile.

Cheap tires may cost far more per mile than tires at twice the price.

Tires may also be too costly—too fine in composition to endure.

The object of the expert is the lowest cost per mile. That has been our object for some 13 years.

How We Know

We make our comparisons on a tire testing machine, where four tires at a time are worn out under all sorts of road conditions. Meters record the mileage.

There we have compared some 200 fabrics, and some forty formulas for treads.

There we have tested every method and process. There we have compared rival tires with our own.

Thus we have proved that Up-River Para—the costliest rubber—is cheapest on the mileage basis.

Thus we have proved that long-fibre Sea Island cotton—the costliest material—is cheapest in the end for fabrics.

We have proved that wrapped tread tires—the costliest construction—are cheaper than moulded tires—for the user.

So we employ these things. And we use everything else which these years of test have proved most economical—in the cost per mile.

Saving 23 Per Cent

Then came the question of rim-cut tires. We examined thousands of ruined tires, of every make. And we found that 23 per cent of the clincher type were rim-cut.

So we brought out a patent new-type tire—a hookless tire—which makes rim-cutting impossible.

At first this type was expensive. It added one-fifth to our price. But our multiplied output quickly reduced it, until it now costs users no more than standard old-type tires.

This tire—called No-Rim-Cut—has ended rim-cutting forever.

Saving 25 Per Cent

Next came the question of blow-outs—caused by adding extras to the car—by overloading tires.

To avoid this we made No-Rim-Cut tires 10 per cent over the rated size. That means 10 per cent more air—10 per cent added carrying capacity. And that, with the average car, adds 25 per cent to the tire mileage.

With these oversize tires, of the costliest construction—these tires that can't rim-cut—we met the price of standard old-type tires.

The result is this:

Last Year's Profit 8.57 Per Cent

Our profit last year on No-Rim-Cut tires was 8.57 per cent.

With the largest output—with the most modern equipment—our selling price has averaged about 8½ per cent over cost.

That in a risky business, with fluctuating materials, on a tire that's guaranteed.

The point is this:

Tires can't be made more economically than in this mammoth, modern plant.

Men can't stay in this business, with the risks it involves, on a smaller margin of profit.

In No-Rim-Cut tires you get as much for your money as any maker ever can give. And you know what you get.

If you consider that fair, it's another reason for insisting on these premier tires.

Our 1912 Tire Book—based on 13 years of tire making—is filled with facts you should know. Ask us to mail it to you.

GOODYEAR

No-Rim-Cut Tires

With or Without Non-Skid Treads

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

Branches and Agencies in 103 Principal Cities **We Make All Kinds of Rubber Tires, Tire Accessories and Repair Outfits**

Main Canadian Office, Toronto, Ont. **Canadian Factory, Bowmanville, Ont.**

(605)

April. From three to ten pickers are required per acre, owing to the size of the crop. One packer is needed for every eight or ten pickers. Both picking and packing are done according to the printed rules of the association. Great care is needed here, for the reputation of the association depends on the care with which the fruit is graded and packed. Members generally appreciate this and strive to put their fruit up right.

"As soon as the packing is done for the day the crates are hauled to the loading station, where the manager of the association receipts for them, sells them, pays the expense of handling them and pro rates the receipts to the growers. When first received from the growers' wagons every crate is examined by a competent inspector and all fruit that does not come up to the required grade is rejected. Rejected berries are not put into the car, but are sold or consigned to be sold on their merits.

"Fruit which passes inspection is loaded into express or refrigerator cars and shipped to distant markets. Most of this fruit is sold on our platform, but some cars are consigned to reliable commission men. We ship to practically every city from the Rocky Mountains to the St. Lawrence River, and from Memphis to Winnipeg. Our chief market cities are Kansas City, Omaha, Topeka, Denver, Sioux City, Des Moines, St. Paul, Minneapolis, Duluth, Milwaukee, Chicago and Detroit. Of course we reach many smaller cities also, and our field is constantly widening.

"We don't believe there is any immediate danger of overproduction, with proper marketing arrangements. In 1910 the average net price to our growers was $2.31 per 24-quart crate; last year the average net return was $2.11 per crate. Prices this season are likely to be not far from these figures.

"Judging by the past, there will be an increase in the berry business here. Fifteen years' experience has proved it to be a safe and profitable business. The crop is the most profitable one we can grow. One of our members has realized nearly $1,000 from a little less than an acre of ground. Another has realized $977.64 from an acre and a half. It is these exceptional cases which enthuse the growers and encourage them to strive to increase their yields. At the same time it should not be forgotten that some unfortunate ones do not make expenses, just as there are failures in all lines of business."

Advantages of the Medium-Sized Automobile.

Now that farmers are buying automobiles, quite generally, it is but natural that they should consider what is the best type of machine for their use. Automobile manufacturers are carefully considering the needs of farmers, and it is interesting to note that the medium-sized cars are most popular with those who have studied the situation most carefully. The following article by Mr. J. W. Gogarn explains why he thinks cars of this kind are best, in the long run, for farmers' use:

"What are the advantages of the medium sized car over the large one? In the first place the medium sized car is unquestionably the most economical. There is a saving of from 50 to 80 per cent in the purchase price and when I make this assertion I include motor cars varying in price from $1,000 to $5,000 which have a seating capacity of five passengers each. This saving of 50 to 80 per cent practically applies to the replacement of axles, springs, transmissions and other parts, and, with slight exceptions, the rule obtains in the consumption of gasoline and lubricants. The rule also applies to storage due to the larger cars taking up more room and requiring more labor to polish and wash them.

"What is true in the saving of the purchase price, in replacements and in storage is equally true in the vital matter of tires. A complete set of standard 34-inch tires, including tubes, for the Reo the Fifth can be replaced at the current prices for $120 to $125. To replace a standard set of tires on a large car would cost between $350 and $375. This purchase price is about 300 per cent greater than that of the Reo. Then it must be considered that the life of a set of tires on the smaller car, mile for mile traveled, is from 50 to 90 per cent greater than on the large car. The heavier car the wider the ratio of tire upkeep becomes in favor of the smaller car. All things considered, it is safe to say that the tire expense on a big car is from three to five times greater than on a car of the popular type of Reo the Fifth. It is therefore plain to the practical doctor, contractor, business man and business farmer which car which will give him the most satisfactory service and save him the most money.

"Closely allied to economy is motor reliability. A good car must have get-there-and-back ability. It must have strong enough axles to take the average motorist and his family on a trip from New York to San Francisco and back without any fear of a breakdown under normal conditions. Its wheel base and road clearance must be suited for high water bars in the mountains and for other highway obstructions. Our large nickel steel axles are specially designed for hard usage of this sort and should at least cover as many miles as the highest priced car built in the world. So with our big easy riding springs; our transmission, powerful motor, strong sub-frame and specially designed radiator, carburetor and positive ignition system are designed to meet any emergency on rough American roads. All of these strong features make for maximum reliability and when this is coupled with the greater economy of the smaller car the conclusion is obvious.

"Then there is the greater safety in the smaller car because it is more easily controlled when traffic is more or less congested. This is notably true in rainy weather on slippery pavements, for in the smaller car the danger of skidding is minimized. Our flexible steering gears and powerful brakes positively insure maximum safety on mountains and hills. As life and limb are the most precious possessions of a man and his family the greater safety of the smaller car should commend it to the vast mass of motor buyers everywhere.

"In our cars we have more power in proportion to weight and therefore greater efficiency. With our large wheels, big springs, long wheel base, luxuriant upholstery and perfect balance in construction a maximum of comfort is insured. Its simplicity needs no expert chauffeur to operate it. It will go through deep sands and mud where heavier cars would sink to the hub and get stuck. It earns more because it saves more. It takes you there and back at less than half the cost of the bigger car in perfect safety and comfort. It is the key to absolute motoring satisfaction for the man who knows the value of a dollar and for the man who seeks big value and bigger results when buying an automobile. There is no necessity whatsoever to pay from three to five times more for the purchase and upkeep of a big car when a good, reliable and roadable medium sized car will comfortably and safely carry just as many passengers in the same length of time at about a third cost."

Inter-cropping an orchard before it comes into bearing with vegetables or berries, helps pay expenses, and gives the orchard the cultivation it needs. Stop the cultivation during the latter part of July or first of August so that the trees can mature their wood before winter.

As a fruit, the strawberry is one of the quickest money crops. Next comes the blackberry and then the raspberries.

CURRANTS FOR PROFIT

Currants Are Being Profitably Grown in Lake Erie Valley—Carries Well and Keeps Well

Throughout the East there is an increasing market for small fruits. Wherever there are large cities within ten or twelve hours by express shipments, there small fruits can be marketed with increasing facility. This is true whether the fruit is strawberries, cherries, currants, red, purple or black raspberries, blackberries, dewberries or even the tart gooseberry. In fact some very good growers have found so satisfactory a gooseberry market wherever there is a large foreign population that there have been extensive plantings of that berry along the south shore of Lake Erie in the past three years. And what applies to the Lake Erie valley applies also to the Central New York region, and more especially to the Hudson valley and the fertile valleys of Jersey, so near to the great market of New York, Philadelphia, Brooklyn and the Harlem river.

The pure food law that has brought better foods to millions of tables, has made a bigger market for the small fruits, for now currant jelly and raspberry jam and gooseberry preserves must be made from the juice or the pulp of those berries, not of apple juice, or the refuse from tree fruits. This law has affected particularly the market for currants and last year currants in the Hudson valley in particular brought excellent prices, while all other fruits came up in consequence. The demand in the Lake Erie valley took all available fruit, but not at so high a figure as near New York. Currants netted 8 to 9 cents per quart, raspberries 9 to 12 cents here.

In this, the Chautauqua belt of New York, there seems to be many reasons for favoring the currant as the most satisfactory of the small fruits to grow on a fairly good sized scale, and with the best show for reasonably level crops and reasonably good profits. This favor for the currant comes from a number of causes. The varieties which prove prolific here are also hardy, and will not winter-kill. The plants are produced in home nurseries, hence easy to obtain, reasonable in price, and with a reasonable assurance of being true to name and strain. Lacking the thorns and prickers of the berries, they handle more easily, are more easily pruned and cultivated, and much more easily picked. It is easy to get currant pickers, when hard to get pickers for any other kind of bush or low growing fruit. Besides the currant seems to carry a most constant market, particularly since the enactment of the pure food law, making it necessary to use currants for currant jelly. One other excellent reason exists in this section and might apply to almost all sections. That is the style and size package mostly used to convey currants to market. In this section the common carrier is the ordinary eight-pound or Climax grape basket, one of the cheapest and most available packages possible to find. The grape growers have these baskets by the thousand, and they are made by the thousand in various sections, so the currant growers are always sure of getting their supply of packages. It is a fine package, good to look at, easy to handle and convenient in price, and is being more generally used for other fruits, being adapted to all except the softer berries.

It is hard to advise as to varieties, as local conditions vary widely, but here the old Fay currant, originated in this county, and also the Chautauqua, are widely grown. Then comes the Wilder, the Red Cross and their near neighbors, the Perfection and the Pomona, newer varieties, and somewhat cheaper at the nurseries. The large, bright red and medium tart currants sell best on most markets.

Next to the selection of good varieties, there are two other essentials for success in currant growing, those essentials which are the essentials in every other branch of fruit growing whether small or large—proper condition of soil, and proper pruning.

Proper condition of soil means preparation before setting out as well as care after the plantation is growing and producing. No article on fruit growing deserves to be printed that does not emphasize thoroughness in everything that is to be done in the whole fruit business. For currants then, but not more than for other fruits, the soil should be in well-tilled condition, and well filled with vegetable plant food. That means a cover crop turned under the year before, preferably clover or vetch, or a dressing of well rotted stable manure well worked into the soil; the soil well and deeply tilled prior to planting, and last but most important, a soil which is well drained. I am coming to believe that costly as it is, tile draining is worth all it costs, and a big percentage in addition in every fruit plantation. Currants will not live with their feet in the water, neither will any other fruit. Too much emphasis cannot be placed on the necessity for good drainage.

As to pruning there is a rule in currant culture not well understood, but which must be understood in order to get maximum efficiency. It is that three-year-old wood bears the most and the best fruit. Three-year-old wood then is the thing to aim for, and it takes a good man to prune his currant bushes to get the maximum of three-year wood each year and neither underdo nor overdo the work. The plain rule for pruning is an easy one, the hard work is to follow it. Prune off all wood more than three years old at the ground; then trim out the yearling wood, leaving the maximum that the bush will carry and bring to full growth and three-year maturity. This rule applies, of course, to the bush after it is three years old; before that in the first year the plant should be cut back severely, and in the second year pruned down to an equal balance between one-year and two-year wood. The bush so handled will give a nice quantity of fruit the second year, three times as much the third year, and then increase steadily for some time after that, if properly handled.

The cultural directions are, first thoroughness, second shallow cultivation. Keep the plantation clean all the time, not just during the spring. Keep the plantation clean except while the cover crop is growing. Sow a cover crop between the rows every year as soon as the currant crop is harvested; plow it under early in the spring; make it a legume so long as the bushes do not show excess of wood and leaf growth. Use a dressing of lime if you are not working on a limestone soil, once in four or five years. Cultivate shallow, so as not to disturb the roots, but frequently to keep a dust mulch and conserve the soil moisture.

Of the harvesting mention has already been made. The currant is easy to pick. A low bench is furnished the pickers, who can sit at their work, bending the bushes down toward them and stripping the luscious clusters of the fruit toward them. Caution must be observed not to strip leaves into the package and not to crush the fruit, as the juice running over the uncrushed fruit induces early decay and attracts flies. Leave the foliage on the vines where they may do some good; keep them out of the fruit where they seriously injure the appearance and salability of the fruit in market.

Cover the basket with a slatted top if it can be found, for the beautiful red of the fruit showing through the slats is the best sales argument the fruit can have. If you use a solid cover, then have a lithographed label bearing a handsome illustration of the fruit, and the grower's name and address.

All the above has referred to red currants, and the question is often asked, what about the white currant? The answer is that the white currant is, if possible, a finer fruit for the table than the red, but it does not sell on the average market. Many large growers of red currants grow the white for their own tables. The white currants are not so tart, they have a finer and more delicate flavor. The few who appreciate the white currant will take no others when they can get the white, but better not grow it in quantity unless the market is established. It is like the white and the brown eggs. New York will pay 3 to 5 cents more for the white eggs, Boston will pay equally higher for the brown eggs, yet scientific investigation proves that there is absolutely no difference in chemical content or food value. White currants demand absolutely the same care as red; but the varieties are not as well developed, and the best white currants, in practice, are slightly less prolific than the best red varieties.

A great mistake is made in planting small fruits too close together in the row, and in having the rows too close. The idea is to permit plenty of room between the rows for horse cultivation, and between the plants for air and light. The first principles of fruit culture, whether tree or bush is that the leaves are the starch factories which elaborate the material from which every part of the plant and the fruit is built. They cannot perform their duty unless each individual leaf is accessible to air and sunlight. It is a thorough knowledge and appreciation of this fact which guides the pruning shears, as well as what distance apart the various plants are set. A strong growing currant on rich land, where it is likely to be of exceptional thrift, should not be as near its next neighbor as one of the less thrifty growth on lighter soil. However, there is danger in too rich soil for currants; the proper balance between foliage and fruit must be maintained. As to specific directions for currants, it is advised on plantings for commercial purposes to have the rows at least five feet apart, and the plants not less than five feet apart in the row. Rows five and one-half feet apart are even better.

There are in this section two enemies to successful currant culture to be guarded against. Both direct their attacks against the foliage of the bush, sometimes stripping the leaves

Publications on Bee Culture

The numbers listed below are but a sample of what we can supply in the line of booklets and books of more than ordinary interest.

The Bee Keeper and Fruit Grower. A 15-page booklet giving actual facts regarding the value of bees to fruit, and showing how bee keeping may be doubly profitable to the fruit grower. Fruit growers are realizing as never before the necessity of having honey bees in close proximity to their blossoming trees. Free.

Gleanings in Bee Culture. A semi-monthly magazine, the leading exponent of bee culture in this country. To new subscribers we will furnish it six months for 25 cents. Ask to have your subscription start with the March 15th issue, which is a special bees and fruit number and will give you some valuable facts about these two industries.

The A B C of Bee Culture. A complete textbook of over 600 pages. Fully illustrated and containing full information on every subject relating to this most fascinating industry. Price $1.50, postpaid.

Catalogue of Bee Keepers' Supplies. The 1912 edition is particularly interesting and attractive. It will tell you how best to make a start with bees and give prices on all equipment necessary. Will be mailed free on request.

The A. I. Root Company
Box 199 MEDINA, OHIO

FOR SEWING LEATHER
The Speedy Stitcher is the latest and best of anything ever offered for $1.00.

Agents make over 200% profits.
Send at once for catalog and terms.
Automatic Awl Co. 83 Gardner Terrace, Worcester, Mass.

while the fruit is but half or three-quarters grown. This is fatal if permitted to occur from any cause, for if the supply of starch, made in the leaves, is cut off, the fruit cannot properly mature; the new wood cannot form, and fruit and foliage buds for the future work of the plant cannot be properly formed. The two enemies to be kept away from the currant are the leaf spot, a fungous disease, and the currant worm, a big, voracious larva, which can be controlled by poison spray.

The leaf spot is kept in check by bordeaux mixture, and a good spray calendar should be consulted as to the recommended strength and time of application, but with this warning: bordeaux spray is a preventive, hence should be applied before the fungus gets a hold on the leaves. Apply early and thoroughly; an application which will drench the leaves is much preferred to one which will only lightly touch them with spray. The lower side of the leaves should be covered as well as the upper side when spraying with bordeaux. In this way all fungous troubles are given a thorough cleaning out, and if arsenate of lead is added to the early spray, before the fruit has set, a good start is made toward freeing the bushes from the first brood of the troublesome currant worm. It is hardly safe to spray with the arsenate of lead after the currants are well set, as the poison is insoluble and some of it might remain on the fruit. It is very unlikely that serious danger lies in this, but it is well to be on the safe side. If a late brood of currant worms appears—and it does not take many to be a serious menace—an early morning dusting of the bushes with white hellebore, while the dew is still on the leaves, is sure to kill the worms and without other danger.

The currant is a favorite fruit with shippers because of its keeping qualities. It can be left on the bushes until perfectly ripe, with all its fine flavor and splendid, health-giving acid content developed, then picked, shipped and remain in market for a week or longer without serious deterioration. Picking, if the plantation is not so large as to make this impossible, should be done in the morning before the fruit is heated through by the hot sunshine. Cool fruit will keep much longer. After picking keep the fruit in the shade.

Summarizing: There is a growing market for small fruit at increasing prices in the large cities and the manufacturers of fruit juices, jellies and fruit products especially, demand the currant. If express rates can be brought within reason, and shipments be made promptly, the currant is a profitable fruit to plant almost anywhere in the Northern states. Plant prolific red varieties on ground thoroughly drained and thoroughly prepared, and rich with turned-under green crops and well rotted stable manure. Prune to get the largest possible growth of three-year-old wood, for this bears the most and best fruit. Plant well apart in the row, and with room between rows to cultivate thoroughly, for clean cultivation and cover crops are essential. Spray with bordeaux and arsenate of lead early, and look out for the currant worm. Pick carefully, and keep the fruit cool while getting it to market. There is plenty of work, and plenty of profit from the work, in a well planned and cared for currant plantation.

A. M. LOOMIS.

New York.

On a heavily loaded apple tree, removing half of the fruit in early June does not necessarily reduce the number of bushels that will be harvested, but it does materially increase the size of each remaining fruit.

Cave Vs. Cold Storage.

I am selling apples at $1.25 per bu. this first day of May. Cave holding 3,000 Bu. for $500. Cave will last forever. Guaranteed to keep fruit. Ventilation perfect. For plans write to J. T. Swan, Auburn, Nebraska.—Adv.

FAIRVIEW BERRY NOTES

In our section, the strawberry crop last season was short. Weather conditions were against us. Before the first of June, the rainfall was scanty. On the 4th of June a heavy hail storm greatly damaged the crop. The ripe berries were bruised and mashed. Many of the green ones were torn from the fruit stems and foliage was broken down. The varieties having heavy foliage suffered least. The damaged berries were picked thus preventing further loss from decay. In a few days the patch partially recovered. Of the eighteen varieties fruited, the Fae and Mollie took first place. They were far ahead of any other variety in quality, size and productiveness. These varieties have heavy foliage and stand the frost well. The plants are strong and vigorous and propagate easily. The Mollie is not as large as the Fae. It is larger than the Bubach and being late brings fancy prices. The berries are very firm and ship well. We consider these varieties the best medium and late berries we have ever tested, all points being considered. The Pocomoke is the best type of the perfect berry, we have ever grown. It is very productive; the berries are large and of a good color. The Sample and Bubach do well for us. The latter produces large berries of good quality and excellent flavor.

In starting a new plot, the plants are set twenty-four inches apart, in rows forty-eight inches apart. The soil should be cultivated until fine and then packed well. Much depends on the proper setting of the plants. Do not cover the crown but press the soil well to the roots of the plant. Cultivation should be thorough and regular. By using a wheel hoe or garden plow, you may save much hoeing. After cultivating with the horse, run along close to the row with the wheel hoe. By regular cultivation you may overcome drouth. Do not mulch too heavy for you may smother the plants. The time for removing the mulch depends on the season.

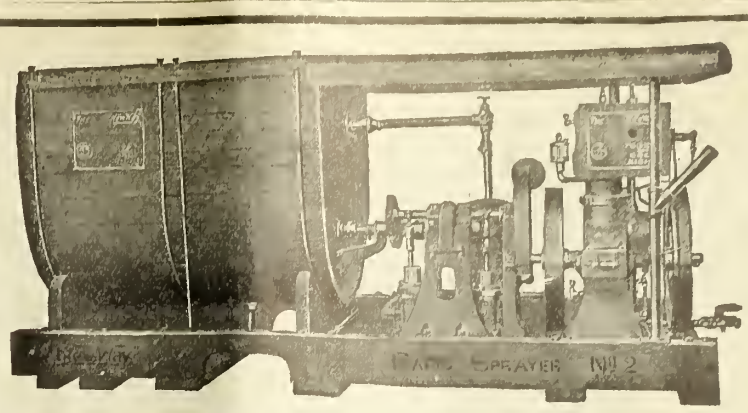
The picking and packing has much to do with the market value of the fruit. The best policy is to grade and pack honestly. A satisfied customer is the best advertisement that can be made. You not only hold his trade but secure the trade of his friends. By topping a crate you will be able to sell that particular bushel, but will in time ruin your trade. Always be honest; it pays. The best way to grade is in the patch. Watch the pickers carefully and see that they do their work well. You will find it necessary to sort some berries in the packing house, as some pickers at first will not do their work properly.

The marketing of the crop is very important. We get the best results by shipping direct to grocerymen. One season we shipped to two grocerymen at a distance of fifty miles and to a commission house at twenty-five miles. The grocers remitted $4.00 to $4.50 per bushel and reported berries in good condition. The commission house reported berries sold at $2.00 to $2.25. After deducting commission and expenses very little was left. Nearly every shipment was reported in bad condition. The berries shipped to the commission house were packed just as carefully as those shipped to the grocers yet were reported in bad condition. This same house refused to settle for one shipment of three bushels. Said they did not receive them, but the express company said they did. Possibly you have had similar experience with commission houses.

There are problems which everyone must meet and solve for himself, such as what varieties are best suited to your soil, the most profitable way to market, wholesale or retail and how large a patch can be handled to realize most profit.

W. J. ALT.

Ohio.



The Light Weight High Pressure Sprayer

18 CARLOADS APPLES

SOLD OFF THIS ORCHARD LAST YEAR. SPRAYED WITH

THE "New-Way" Gear Driven

High Pressure Power Sprayer

YOU CAN DO AS WELL AS THIS

Wright & Co. Orchard, Watson, Illinois.

We have given our "NEW-WAY" gear driven power sprayer a thorough trial this year. We carry four lines of hose up to 200 pounds pressure continuously, and spray 200 gallons of solution in 30 minutes.

I give you below the figures regarding our fruit crop.

APPLE CROP		PEAR CROP	
Acreage	180	Acreage	8
Yield in bbls.	5500	Yield in bbls.	500
Value	$22,000.00	Value	$2,000.00

I have 80 acres of Ben Davis, rest are York Imperials and Jonathans. I have shipped 15 carloads and have 3 carloads to go yet. My fruit is in the best possible condition, not a bit wormy, and I have the best orchard in Illinois.

Yours very truly, JOHN W. WALLS, Superintendent.

THE "NEW-WAY" SPRAYER MAKES IT POSSIBLE. YOU CAN DO IT, TOO.

Write for Sprayer Catalogue No. S-1

THE "New-Way" MOTOR COMPANY
LANSING, MICHIGAN, U.S.A.

25 Ash Street

Cash Premiums for Spraying Your Orchard.

Knowing that spraying will do more than any one thing to insure success in apple growing, the Illinois State Horticultural Society in order to encourage growers to put forth their best efforts in this direction last year offered prizes for the best sprayed orchards in the state. The results of the contest were so satisfactory it was decided to offer prizes again this year. The terms of the contest and the prizes are as follows:

For best sprayed orchard not less than twenty acres	$50.00
Second best	30.00
Third best	20.00
Best sprayed orchard one to five acres	25.00
Second best	15.00
Third best	10.00

Each orchard entered for a premium must be in one block. All entries must be made on or before July 1 by application to the secretary, W. B. Lloyd, Kinmundy, Ill. All competitors must furnish the awarding committee with a complete record of the materials used, the date of each application, the number of applications and the formula or formulas used. The application for each entry shall contain a complete description of the orchard, the number of acres entered, and the legal description of the ground on which it stands.

Prof. W. C. Parmor, North Dakota Agricultural College, says the lead pencil is the most important farm implement. With it accounts can be kept, and without accounts of what money comes in and what money goes out, one cannot know where the profits and losses are.

There are four important factors that must be followed to insure the best results in the handling of eggs from the producer through the cold storage channels to the consumer—buying right, packing right, storing good quality and selling at the right time.

PYROX

Better Fruit

SPRAY WITH PYROX

NO WORMS. Pyrox kills all leaf-eating insects, codling moth, canker worm and kindred pests.

NO SPOTS. Pyrox prevents or destroys fungous growths, scab, blight, rot, etc., thus producing beautiful,

PRIZE QUALITY fruit. Leading fruit growers and exhibitors like Hardy of N. H., Repp Bros., also Barclay, of N. J., Tyson of Penn., have used Pyrox for years. You know *their* record. Pyrox is **THE ONE BEST** spray; smooth, creamy, free from lumps, mixes easily in cold water, doesn't clog the nozzles. It sticks to foliage even through heavy rains, remaining effective for months, thus saving expense of respraying. All ready to use by adding water.

GOOD FOR ALL FRUITS AND VEGETABLES

SEND FOR FREE BOOK ON SPRAYING with prices, etc. Aiso see if your dealer has Pyrox on hand. Wise growers are ordering early.

Bowker Insecticide Co.

43 Chatham St., Boston.

We also ship from Baltimore and Cincinnati.

The pruning season has been finished. This year our pruning was a long, hard job, as the trees in our bearing orchards had become very high and picking from the uppermost limbs was difficult. During the past three years these high tops have been gradually reduced, until now they are within easy reach from the tops of our picking ladders. The gradual cutting back has not been as much of a shock to the trees as would have been the case had they been given all of this pruning at one time.

It generally happens that after heavy cutting back there is a mass of watersprouts developed in all parts of the tree. Where the cutting back is done gradually there is a less tendency for excessive sprouting, and more of the growth going into the regular branches and shoots. In our case the trees have so far not made an unusually large number of sprouts, as the cutting back has been done gradually, that is, over a period of years. Our trees are well set with fruit buds and there is every indication now that our apple crop for this season will be fully as heavy as, if not heavier than, last season.

In our notes last month we made mention of the fact that we should try a shade crop of alfalfa in a portion of our orchard this season. Professor Herrick, of the Colorado Experiment Station, made us a visit recently, and upon his suggestion we shall plant a shade crop of alfalfa over all of the large apple orchard that is now in bearing. This orchard is fourteen years old. It has never had a cover crop of any kind grown in it since it came into bearing, and the soil has been given regular clean cultivation throughout the season, as is the custom in irrigated sections. On this account there has become a deficiency in the humus and the soil is not as easily watered and cared for as would be the case were more humus in the soil.

For a shade crop we shall use alfalfa. In this western section, alfalfa is the best all around leguminous crop that can be grown, and while there are objections to it as a shade crop, still it possesses so many advantages that it will be used. The greatest objection anyone has yet been able to put forth against alfalfa for an orchard crop is that it is hard to get rid of. It is hard to kill out unless taken with force, except during its younger stages. We shall plant the seed this spring and turn the crop under in the fall of 1913. By that time it will not have made roots so hard but that they can be easily cut with the plow, and cultivation the following spring with the Cutaway and Kimball harrows will destroy any stray plants that remain.

Tree planting season has arrived with us, and the last two weeks of April will find us busy at setting trees. To many, this will seem like a late date to begin planting, but with us the seasons are not as advanced as in many localities. We are considerably later than our neighboring fruit districts at Palisade and Grand Junction. In those places apricots have been in bloom for several days and peaches are almost ready to open. Many of the orchardists have been burning their orchard heaters, as the nights are still frosty. But with us all trees are still perfectly dormant, except the apricots, and they are swelling just enough to loosen the bud scales and let the pink of the calyx show. It will be fully the 28th of April before apricots are in bloom on our trees.

As these notes are being written the county inspector is examining the nursery stock which we shall plant this spring, and throwing out any trees which he finds to be infested with diseases or insects. In this state, Colorado, the laws are very rigid on the matter of inspecting nursery stock shipped from county to county or from outside states. The inspection in each county is done by a man or group of men who are well qualified and have a thorough understanding of the appearance of pests. Sometimes they find entire shipments of trees which are in such bad shape that they must be burned. This is unpleasant for all parties concerned. The inspector does not like to do it. The man who bought the trees does not like to have them destroyed just because a few San Jose scale or gypsy moth are found. The nurseryman, of course, does not like to have the trees destroyed, yet what is to be done?

The inspection law has come as a means of self protection. It is to protect the orchard interests of the state. It is to benefit the masses of fruit growers, and had this country long ago realized the importance of rigid inspection between states and particularly of nursery stock imported from foreign countries, we should have far less trouble with insects and diseases that we now have. The rapid spread of San Jose scale to every state in the union could have been prevented, or at least largely controlled. The same is true of every other fruit destroying insect and fungus. There needs to be just as rigid inspection of nursery stock and orchards in every state as there is here in Colorado.

On account of the late season garden operations have not advanced as rapidly with us as with other localities. Nothing is growing in the open ground except onions which were planted last fall. Hardy seeds, such as radishes, peas, beets, carrots, parsnips, early turnips and onions, have been planted in the open ground, and it is possible that some of these, particularly the peas, will have to be replanted. But in the hot bed we have lettuce almost ready to use and radishes that are already half grown. Tomato plants are making the second pair of true leaves, cabbage is well started, cauliflower is well advanced and the celery seed has just germinated. We expect to plant quite a block of celery this year, and so have planted quite a portion of our hotbed with celery seed in order to get enough plants to set about half an acre. In this climate celery does remarkably well, and we have never yet been able to grow enough to supply our own needs and the small local demand of this rapidly growing community. This season we hope to have enough for our own needs and some to sell.

Our oats are nearly all planted. We shall plant about thirty acres of oats and about as much of barley, together with twenty or thirty acres of corn. This grain is needed as feed for our livestock. Right now we are feeding twenty head of work horses, five cows, sixty hogs and a hundred hens. It takes a quantity of feed for these animals, and while we shall have enough from what we are planting, we shall have none to sell. In fact it is not our purpose to grow such crops to sell. All we expect to produce for market is fruit, and all other crops are grown to supply the needs of the farm, to be converted into manure and returned to the soil.

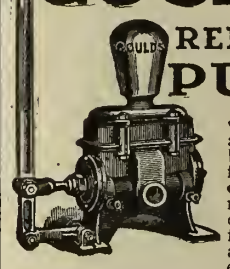
SEVERE PRUNING AT MORRISANIA

These Black Twig Trees are planted 20 feet apart each way and were crowding so badly that severe "shortening in" was necessary. This picture shows the block of trees before the brush was hauled away.

Before You Buy Another Horse Lighten Your Wife's Labor

Put running water in the bathroom and kitchen. Save her strength by doing away with the labor of carrying water. Have water in the barn, barnyard and cow stable, too—everywhere it will save you and your men carrying water. One of the 300 or more

GOULDS



RELIABLE PUMPS

will save time and labor—bring to your farm all the convenience of running water on tap. You'll find it isn't such a difficult nor expensive job as you may imagine, to put in a private water works system. Write us and we'll solve your water problem. Ask for our

Free "Water Supply Book"

You'll find it interesting and valuable. Send now and learn all about the different kinds of home water supply systems.

THE GOULDS MFG. CO.
40 W. Fall St., Seneca Falls, N.Y.

"Largest Manufacturer of Pumps for Every Service."

BARN

ANSBACHER'S

"Triangle" Brand

Arsenate of Lead Paste

Perfect Quality in Perfect Packages

STEEL KEGS

ALL who have used "TRIANGLE" BRAND have praised its Purity, Fineness, Safety and Quick-Killing Speed. A perfect record. Dealers in all districts. Write us at once for free copies Scientific Spraying.

A. B. Ansbacher & Company
527 Fifth Ave. New York

FREE BOOK! to GAS ENGINE OWNERS Write us and we will tell you how to overcome your IGNITION TROUBLES. Let us explain to you how to double the efficiency of your engine and save money. MOTSINGER DEVICE Mfg. Co., Mfrs. of Ignition Specialties, 118 Scott Ave. Lafayette, Indiana, U S A

Coyne Brothers Handle All Kinds of Fruit and Produce
160 Water Street, Chicago, Ill.

View of Morrisania, with Book Cliffs, 3,000 feet high, in the Background, which serve as a protecting wall against storms from the North.

MORRISANIA

A Tract of Ideal Fruit Land

MANY PERSONS who read this advertisement would be greatly interested in Morrisania if they only knew what a fine place it is. There are those who should see Morrisania this spring, before all tracts are sold. Those who should visit Morrisania with a view of buying tracts are:

First—Those who contemplate changing their location to a place where fruit crops are sure every year. Morrisania's record of **only one crop injured by frost in twenty years** entitles it to careful consideration.

Second—Those who must seek Colorado's wonderful climate for the benefit of health of some member of the family. No health resort in the state has a better climate than Morrisania, and no health resort can grow such wonderful fruits and vegetables as are produced at Morrisania.

If YOU want to grow fruits, then Morrisania is the place. We have everything in bearing there to show what can be produced. We can give actual demonstration of the sureness of crops and of the quality of fruits produced. Location is the very best, with fine fruit soil, pure mountain water for domestic use and irrigation, an ideal climate and most beautiful surroundings. Two railway lines give best shipping facilities.

If YOU are looking for health, then Morrisania cannot be beaten. Wonderful health-giving climate, with about 300 days of sunshine a year. Pure mountain air, away from the city. No typhoid fever, no hay fever; an ideal place for those afflicted with pulmonary complaints, for vegetables of all kinds grow to perfection, and it is an ideal place for raising poultry and for dairying, so that plenty of nourishing food is available at all times. With almost continuous sunshine, one can live outdoors almost all the time.

Go to See Morrisania This Spring

We started out to sell about 400 acres of this land, and over 300 acres have already been sold, and these tracts are now being developed by persons who regard Morrisania as we do—an ideal place for growing fruits and as a location for a home.

There remain only about twelve ten-acre tracts to be sold, and those who want fruit land which has been thoroughly tested should arrange to see Morrisania this season.

There is no uncertainty about anything at Morrisania.

The soil is all right, as is demonstrated by crops grown.

The water supply is all right, for the water rights have been used for more than twenty years.

The markets for Morrisania fruits are ready to take more as has been demonstrated in marketing the crops of past seasons.

In fact, everything is ideal at Morrisania. Send for an illustrated booklet telling all about the place. Ask whatever questions you will, and they will be answered to the best of our ability.

But, above all things, we urge you to go see Morrisania for yourself. You will find it even better than represented. Write today for any additional information. Homeseekers' tickets on sale the first and third Tuesdays in every month. Take advantage of low rates and see Morrisania before tracts are all sold.

Morrisania Land & Orchard Co., BOX 1277 St. Joseph, Mo.

At last spring seems to be here for good and work is on in earnest. I can see no damage to the blackcaps from the severe winter, but the reds are killed back to quite a degree. The Miller and Loudon seems to be the least injured. Two young plants of the St. Regis everbearing were not hurt. The Early Harvest blackberry has endured the 15 degrees below zero, although I read that this variety is in some sections considered not hardy. All the other standards are budding out in good shape so that the prospect for blackberries is distinctly promising.

The Loganberry, Mammoth blackberry and a young round leafed Himalaya all died back to their crowns. The currants and gooseberries show no trace of winter injury. The grapes, too, are all in fine condition, while last year there were many dead ones. The strawberries are starting up through their mulch as lively and as vigorously as I ever saw them. The cherries, pears and plum trees are white with bloom and the apple buds are appearing in full number; the peach trees alone are barren of flower colors. There is every prospect, then, that, barring late frosts, we shall have an excellent fruit year.

Planting and pruning are the work that we are now pushing on. We are trying 200 plants of the new dewberry-blackberry, the McDonald. To fertilize it, some of the other Texas kinds, the Sorsby and Dallas, are set in an adjoining row, though it is quite certain that the Early Harvest will suffice for this. Between the rows are planted sweet corn and potatoes and between the plants in the rows are set strawberries, which will do very well thus for one crop.

We also dig up sucker plants to replace all missing plants in last year's blackberry settings. It is a great waste of ground to permit vacancies to go unfilled and every spring the rows should be gone over. Instead of sowing cover crops in the blackberry middles, we permit the late crab grass to grow and it forms a dense mat. Now we take rakes and draw this grass from half of the middle on each side up around the plants, thus forming a fine mulch deep enough to smother weeds and rendering hoeing unnecessary. For blackberries I should rather have a mulch every time than cultivation alone, but this plan combines both, for the center of the middles will be cultivated up to the edge of the mulch.

In pruning, quite a difference should be made in the amount of wood or the number of buds, according to the variety. Excessive producers like Early Harvest and Taylor's Prolific should have their laterals cut back to one-half the wood left on such kinds as the Mersereau, Erie, Ward and Snyder. The bud of Taylor's will lengthen out into a cluster containing from twelve to twenty berries and of course it doesn't take many such to give the plant all it can ripen up to a good size and quality. It is a fatal mistake to leave too much wood and as a result get a lot of small seedy berries and a weak growth of young canes for next year's crop.

If the plants are not mulched they must be hoed out unless quite free of weeds and grass, for foulness will make them weak and unproductive. Stable manue is a regular grass and weed seeder and should be applied only with full knowledge of the inevitable results. Sometimes, however, it is possible to get manure from clean clover or pea hay or alfalfa and this would be fertilizer in the best form. Next to this would be partly rotted wheat straw from some old stack.

Look out for the rust this spring and make a resolution to go through the rows as often as once a week or less. Take a strong sprouting hoe along and grub out every plant showing a sign of the fatal disease. Don't wait till the spores have ripened, for that will give them a chance to float about and infect a number of healthy plants. Look for the peculiar crimp in the leaves at the tops of the young shoots when they are a foot or so high, for the rust is rarely to be seen on the bearing wood.

Luckily most of the blackberry varieties are not easily susceptible to rust, but if you have the Mersereau, watch it closely. It is not as subject to rust as the Kittatinny or else it would be valueless in most parts, but it is subject enough to lose you your plantation very quickly if unremitting vigilance is not maintained. A generally vigorous condition of the plants is an insurance of value against the rust. I have noted more than once that the disease is much more prevalent in patches that are grassy and uncultivated and making a weak growth. I read reports of the discarding of the Early Harvest on account of rust, but it is immune here as long as it is cared for and kept vigorous. This year I am adding to my collection the Maxwell. Of this variety the Seligman Plant Company, whose fields are in the Missouri Ozarks, write that it is the largest of all black or dewberries, ripens a few days after Early Harvest and is very productive, but that the vines are weak and sprawling, not entirely hardy, the fruit sweet but soft.

Other interesting notes from them state that the Eldorado is their finest flavored berry, but rather soft and often not productive. This has been my experience, but last year on another piece of ground the Eldorado was a good match for Taylor's, being about as late and as productive. For eating fresh I would just as soon have a well ripened Mersereau, King or Taylor. Of the Robinson they say "it is certainly a good one, but the canes are very thorny." The canes resemble those of the Erie in shape (round), firm when first ripe and bears through a long season. The berries do not grow in clusters like the Mersereau but each to itself. When fully matured they are fair to good in flavor. We believe it is the strongest growing variety we have. With us Sorsby's May is absolutely hardy. It begins ripening a few days ahead of the Early Harvest. The fruit is firm, jet black, very sweet, productive, ripening through a long season. The vines will root at the tips to some degree, are rather sprawling and very thorny. The Dallas grows considerably like the Sorsby, the vines not altogether hardy, fruit smaller and softer and about five days later. We do not consider it a paying blackberry for our climate, too many others so much better. We have fruited the McDonald only on spring set plants and know little about it personally, but believe it is going to be a good one."

I notice the McDonald has come through this severe winter in very good shape and better than the Haupt plants, thus assuring its hardiness. In my opinion parties who are expecting great things of the Himalaya might realize some of their dreams with the McDonald, which I fear they will never do with the former. To repeat what I have said before, the McDonald ripens with the Early Harvest and has berries as large as those of the Lucretia dewberry. On good soil it makes canes ten feet long, which should be tied up to wires and thinned out to three or four. In short its dewberry blood calls for dewberry culture.

I have the Ward in a very rich piece of ground, at the edge of a manure rick, in fact, and yet it does not make a vigorous growth. Strong large growth is a very valuable characteristic, for it means capacity to bear large crops on any ordinary soil. Near the Ward is the Erie, with canes nearly twice as thick and high. Both

TO DESTROY APHIS, THRIPS, ETC.
Without Injury to Foliage
SPRAY WITH
"Black Leaf 40"
SULPHATE OF NICOTINE

"Black Leaf 40" is highly recommended by Experiment Stations and Spraying Experts throughout the entire United States.

Owing to the large dilution, neither foliage nor fruit is stained.

Like our "Black Leaf" Extract, "Black Leaf 40" may be applied when trees are in full bloom and foliage, without damage to either.

Also, "Black Leaf 40" is perfectly soluble in water—no clogging of nozzles.

PRICE:

10½-lb. can, $12.50. Makes 1000 gallons, "5-100 of 1 per cent Nicotine."
2½-lb. can, 3.25. Makes 240 gallons, "5-100 of 1 per cent Nicotine."
½-lb. can, .85. Makes 47 gallons, "5-100 of 1 per cent Nicotine."

These prices prevail at ALL agencies in railroad towns throughout the United States. If you cannot thus obtain "Black Leaf 40," send us postoffice money order and we will ship you by express, prepaid.

The Kentucky Tobacco Product Company
INCORPORATED
LOUISVILLE, KENTUCKY

The Most Beautiful Painting of Modern Times
"THE BRIDE"

"The Bride" is easily the most popular painting of the year. Already more than 100,000 copies of this exquisite work of art have been disposed of. It is a favorite with everyone.

Words cannot begin to do justice to its remarkable beauty, and the accompanying illustration, printed in black and white, and greatly reduced in size, conveys but faintly the impression of loveliness and daintiness with which the beholder of the painting itself is always charmed.

The predominating tone is white, but the exquisite tints in the background and of the shower bouquet of roses, lilies of the valley and maiden-hair fern, are so delicately blended that the entire color scheme is one of softly subdued harmony.

The panel measures 7½ inches in width by 3 feet in length, which permits of an artistic arrangement of the figure and the long veil and sweeping train add much to its attractiveness. There is no advertising on front to prevent framing, but the panel effect really does away with the necessity of framing. A calendar for 1912 is printed on reverse side.

Just Send 10 Cents

There are no strings tied to this offer. Send 10 cents (coin or stamps) and we will mail you an Art Panel immediately. You will not be asked to solicit or do anything of the kind. We make this offer knowing that our Art Panel in your home will act as a constant reminder of The Farmers' Review. Address

THE FARMERS' REVIEW
1008 ELLSWORTH BLDG. CHICAGO, ILLINOIS

$29.50 Buys This Elegant Top Buggy.

WARRANTED FOR Five Years.

Retail Price $60.00. Buggies, Surreys, Spring Wagons, Farm Wagons. We have cut out our Jobbers, our Wholesalers and our Retailers and offer YOU their profit. Write today for our

Free Catalog and Delivered Prices.

Mutual Carriage & Harness Mfg. Co.
Station 35 K East St. Louis, Ill.

Cow Peas

The most valuable cover and forage crop possible to grow in orchards. You secure a crop of excellent hay, in addition to the complete nitrification of the soil, which permits the trees to use the proper elements with which to mature the fruit.

Whippoorwill, New Era and a few other varieties now in stock. Ask for prices.

Ross Brothers Seed House
326 E. Douglas Wichita, Kas.

In writing advertisers please mention The Fruit-Grower.

THE FRUIT GROWER'S FRIEND
No climbing. Great labor saver; 2 sizes, 8 and 12 ft. Leading orchardists use them. Made of best saw steel. Agents wanted. Write for circular and prices. The Ideal Pruning Saw Co., 788-90 Mt. Hope Av., Rochester, N.Y.

of these have stood the winter very well. The Ward is of fairly good flavor in berry, but not equal to some kinds. The Erie is too sour unless quite ripe, but the berry is large and showy and firm and sells well on the market. Although the Erie is reported by some to be subject to rust, it has never shown any such tendency here and I consider it one of the most valuable kinds in the whole list. The Ward is not so large in berry as the Erie or Mersereau and not specially productive. The Kenoyer is a failure here through its inability to secure pollination for its flowers, although planted near a number of other kinds, both early and late. Its berries are nubbiny and fail to develop properly, otherwise it would be of value, for it is as early as the Harvest and larger.

Take it all in all, the blackberry has proved itself here to be one of the most profitable of the small fruits, ranking in this respect with the grape. The tendency of the raspberry to die back every winter detracts greatly from its value as a market fruit. The strawberry demands a good deal of exacting work if the best results are desired. In last month's Fruit-Grower Mr. McNallie estimates the expense of an acre of them to be about $50 and late frosts are liable to destroy all or a part of the crop. On the other hand the blackberry is of easy and comparatively cheap culture and crop failures are about as infrequent as those of the grape, perhaps one in ten years. Then again the gross profit of the crop seems to be quite equal on the average to that of the strawberry, while the expense is much less. The fruit is not so tender and perishable and can be marketed without the rush and anxiety that accompanies the strawberry season. Picking is easily done even by the inexperienced and no grading is required. The season of ripening is long and I have never known a glut with prices below the cost of production, as is frequently the case with strawberries. L. R. JOHNSON.

Cape Girardeau, Mo.

Hardy Himalaya Berry.

The April number of The Fruit-Grower contained an article on page 26 which gave various comments on the Himalaya berry, the conclusions of which, as they appeared, were that Himalaya was neither hardy nor a good bearer. The facts given in that article probably are correct, but without an explanation or without other facts to which they are related, the statement is misleading and needs to be corrected.

"Himalaya," as it is called in this country, is a family term usually applied to three different varieties of a perennial, thorny berry vine. These varieties are English Cut Himalaya, Oregon Evergreen Himalaya and the true Giant Himalaya. The two former varieties are hardy only on the mild Pacific Coast or in the South. They bear fruit, but it is too small for commercial purposes, and they are not to be considered as fruit-bearing vines so much as ornamentals. The true Giant Himalaya was never planted east of the Rocky Mountains before the spring of 1910. During the two years since it has been distributed extensively over the Central and Eastern states. There now are thousands of the vines in small groups and enough larger plantations of it to enable us to judge of the hardiness.

In the spring of 1910, Mr. Jackson of Cripple Creek, Colo., bought 500 plants, and each spring since then has been buying more. He says he has no trouble whatever with freezing back, and that the Himalaya is absolutely hardy in Cripple Creek. Prof. H. G. Eustace, of the Michigan Agricultural College, Lansing, has been keeping close tab on the Himalaya berry in his state ever since the first plants came there. He has photographs of extensive plantations, and of vines in every stage of development, and he states that Giant Himalaya is beyond doubt the hardiest cane berry available for commercial purposes in the United States. A. Mitting, of Holland, Mich., is the introducer of Himalaya east of the Rocky Mountains. He has several acres of plants which have been on his farm since the spring of 1910. Previous to last winter there was absolutely not an inch of canes frozen back, even when the temperature went down to 25 degrees below zero. Last winter, however, in a temperature of 42 degrees below zero, the Himalaya plants froze back about half of their last season's growth.

In connection with this fact it should be remembered that in the same severe temperature Eldorado and Lawton and other varieties of blackberries were frozen to the ground, that plants of the Rambler rose family lost half of their growth; that a good many evergreen trees were destroyed, and that the peach crop was killed entirely. In April, when this was written, Mr. Mitting expected at least a 50 per cent crop of Himalaya berries this summer. He sells Himalaya plants and advertises a request for information about any which freeze back. He says that he has not received a single report that the true Himalaya plants are not hardy anywhere. The Giant Himalaya naturally is a very heavy bearer, and begins when about a year and a half old. The plant is a great grower if given any kind of a chance. If the gentleman from Johnson County, Nebraska, had 300 plants of the true Giant Himalaya berry and they did not bear, it most probably is because he did not give them proper care, planted them in exceedingly poor soil or let they dry out. But he did not have the true Himalaya, because he says he got his plants in 1907, when there were no plants of Giant Himalaya available in his state. No doubt there are lots of plants of the worthless varieties sold for the Giant Himalaya. This unfortunately is the funeral" of the buyer who pays his good money for them. If anyone gets stung in this manner an explanation of the true state of affairs is due him so that the status of the exceedingly valuable Himalaya Giant is not damaged by his indiscriminate attack on the whole family. The true Giant Himalaya has great possibilities before it, and is going to be a widely planted commercial berry during the next few years. J. T.

A Corn Growing Contest for Missouri Farm Boys.

The Missouri Corn Growers' Association, co-operating with the Missouri College of Agriculture and the State Board of Agriculture, has perfected plans for organizing a state wide corn growing contest among Missouri farm boys during the season of 1912. Every farm boy in Missouri between the ages of 10 and 20 is eligible to membership in this contest and should join. He will not only learn much about growing corn, but his attention will be directed to many opportunities that intelligent effort affords along other lines of good farming as well.

It is planned to enroll as many boys as possible in this contest and to give them practical instruction in growing corn. Circulars telling how to select seed corn, how to test it for germination, how to plow and prepare the ground, and how to plant and cultivate corn according to the most approved methods will be sent to each boy enrolled.

At the State Corn Show held at Columbia next January by the Missouri Corn Growers' Association, valuable prizes will be offered to those boys who grow and select the best samples of corn and to those who grow the most corn on an acre of ground with the greatest profit. Last year three boys each grew over 105 bushels of corn on an acre of ground. One of these won $56 in cash prizes and sold his corn for $85. It cost him about $20 to grow his corn, which left him a net profit of $121 for his acre of corn. Prizes will also be offered at the State Fair at Sedalia and at many local corn shows all over the state next fall for corn grown by boys in this contest.

In many localities local corn growing contests are being organized by county superintendents, bankers, merchants and other business men, local corn growers' associations and farmers' clubs of various kinds, and the boys enrolled in these become members of the state contest when their names are sent to the secretary of the Missouri Corn Growers' Association. Where these are organized, the boys should join them, but where none is organized, a boy can join the state contest by sending his name, age and address to the secretary of the Missouri Corn Growers' Association, Columbia, Mo., who will enroll him and send him circulars on corn growing.

Pick off all apples that are closer than four to six inches. Do it in early June. Leave only the best shaped apples. Pick off especially those which have been specked by scab or curculio, and those at the ends of the long whip-like branches. The fruits that remain will make up in size what is lost in numbers.

Clean cultivation, generally, has some advantages in preventing rabbit depredations, since it reduces the number of places of refuge for the animals.

BERRY BOXES FRUIT BOXES BASKETS AND CRATES

The package advertises and sells the fruit. Let us send you catalog showing the superiority of packages we are manufacturing. 30 years at it, we know the requirements, and we want you to know our prices. We make mixed shipments. Join your neighbors in carload lot shipments, and save freight. Prompt shipments at all times. Address nearest office.

The Pierce-Williams Co., 542 William St., South Haven, Mich., or Jonesboro, Ark.

FRUIT BOXES *and* BERRY CRATES

Car Lots a Specialty
Correspondence Solicited

THE DALLES BOX & LUMBER COMPANY
THE DALLES OREGON

The CLEANEST CUT—BRIGHT, ATTRACTIVE—OUR
Western Soft Pine FRUIT BOXES

DON'T SPLIT, LIGHT, STRONG—Nail easy. Send on post card your name, address, kind and quantity wanted. Then we will send you sample of wood and prices, your station.

Washington Mill Company
SPOKANE, WASHINGTON

Save Money on Berry Boxes and Baskets

Fruit and Vegetable Packages and Growers' Supplies of all kinds. Write for free money-saving catalogue and price-list.

Largest Factory of its kind in the country.
NEW ALBANY BOX AND BASKET CO.,
Box 104 New Albany, Ind.

APPLE BERRY **BOXES**
WESTERN WHITE PINE
Local shipments; carload lots. Place orders early.
F. A. CARRIER
Dwight Building Kansas City, Mo.

PATENT YOUR IDEAS

$9,000 offered for certain inventions. Book "How to Obtain a Patent" and "What to Invent" sent free. Send rough sketch for free report as to patentability. Patents advertised for sale at our expense in Manufacturers' Journals.
Patent Obtained or Fee Returned
CHANDLEE & CHANDLEE, Patent Att'ys
Established 16 Years
1046 F. Street, Washington, D. C.

Commercial ORCHARD

All in Bearing, and in some of the Best Proven Fruit Sections of Virginia

(1) 250 acres mountain land. Over 2,500 apple trees, one-half beginning to bear. Some of the land is rough; but the trees are well grown and very thrifty. Four and one-half miles down grade to station. Price, $10,750. A GREAT BARGAIN.

(2) 160 acres at foot of Blue Ridge. About 5,000 trees, 1,200 apple, 18 years old, balance just being planted; 1910 crop, 1,000 barrels, 3½ miles over fine road from station. Price $20,000.

(3) In select fruit region, close to progressive town, 160 acres practically all planted in fruit. About 6,300 apple trees, 5 years old; 200 six years old and 1,000 one year old; 15,000 peach trees 5 years old; fine property, worthy of immediate investigation; purchasable at investment figure. Price $60,000.

(4) About 7,000 apple trees, all in bearing and from 7 to 17 years old. Rich land, one-third in orchard, balance mostly bluegrass sod. Owner reports 1910 apple crop brought $9,000 net. Distance to station one and one-half miles. Price $65,000.

(5) Contains nearly 15,000 apple trees 11 to 15 years old, within one mile of two competing railroads; elevated land, good air drainage, within 5 miles of large city. Cheap property. A few good crops should pay for it. Can be bought for about $120,000.

Other Fine Orchards. Write for List.

H. W. HILLEARY & COMPANY
729-30 Southern Building. Washington, D. C.

BEAUTIFULLY ILLUSTRATED
BOOKLET ABOUT DELAWARE
the State of red apples, luscious peaches, strawberries and of ideal homes. Address State Board of Agriculture, Dover, Dela.

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. Hanson & Son, Hart, Mich.

You ought to do this with an acre of Standard Berries

—The plants, planting and care will cost you about $60. This is all the expense till harvest time.
—It is understood that you give good care. In fifteen months your first berries are ready to be sold.
—You may expect $100 return one year in five; three years in five the acre should produce $250, and the other year it should bring $400.
—This is with standard varieties of Strawberries, Raspberries, Blackberries, etc. Himalaya berry, and the new Currants and Gooseberries, will double the figures given.
—You will enjoy the time you put on the berry patch, and you will get food that tastes good and makes for long life and perfect health.

Get Berrydale Berry Book

The one book of its kind published in America. Here, among others, is described Himalaya berry, that perennial resembling a blackberry plant, but bearing fruit on old and new wood, like a tree; the vine grows 20 feet in a season. Get full details. The book is free—write for it now.
6-Month Himalaya Plants, $2 for 12, postpaid.
12-Months Himalaya Plants, 25 cents each, postpaid.
18-Months (will fruit in 1912), 50 cents each, not prepaid.
24-Months (will fruit in 1912), $1 each, not prepaid.

Berrydale Experiment Gardens
Fruit Avenue, Holland, Mich.

M F P S

Do You Want a Home in the
Beautiful Ozarks
of Missouri, in the Famous Strawberry Land

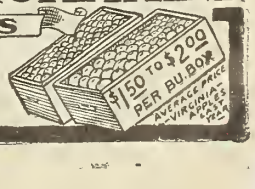
Apples, Peaches, Pears, Grapes, Raspberries, etc., all grow excellently. Ideal location for the dairy and poultry business. We offer for sale 60,000 acres of land in 40-acre tracts or more, cheap and on easy terms. Located in Stone and McDonald counties. For further information address

McDonald Land & Mining Company
Rooms 301-2 Miner's Bank Building
Joseph C. Watkins, Mgr., JOPLIN, MO.

VIRGINIA·APPLE·ORCHARDS
PAY BIG PROFITS

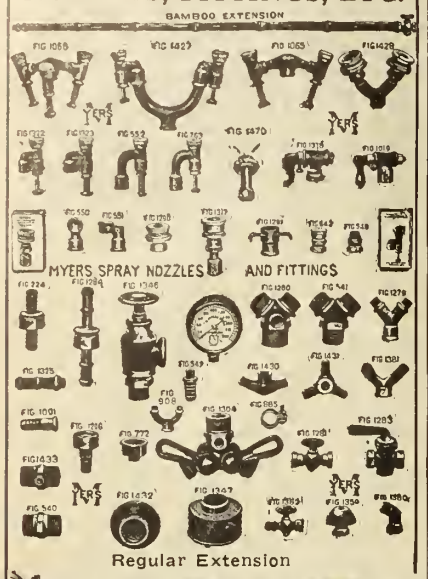
N&W Ry

$350.00 on long time and easy payments buys a ten-acre Apple Orchard tract in "The Beautiful Shenandoah Valley of Virginia." Other farm and fruit lands $15.00 per acre and up. Write now for last issue "The Southern Homeseeker," other interesting literature and low excursion rates. Address, F. H. LaBaume, Ag'l Agt., Norfolk & Western Ry., Box 3031, Roanoke, Va.



MYERS SPRAY PUMPS

ALL KINDS NOZZLES, FITTINGS, ETC.



Regular Extension

In order to get good results from Spraying, you will need Good Spray Pumps and Accessories. You can find in THE MYERS LINE the best Spray Pumps, Nozzles, etc., in the market. Something for every need.

ASK YOUR DEALER OR WRITE US

F. E. MYERS & BRO.

160 ORANGE ST., ASHLAND, OHIO

HEMINGWAY'S LEAD ARSENATE

The brand which is used in all of the great Apple Growing Districts of the country—The Blue Ridge Slopes, The Ozarks, Western New York, Michigan and the famous valleys of the great Northwest.

Lead Arsenate of the Highest Standard of Manufacture, Both Chemically and Physically.

Hemingway's London Purple Company, Ld.

Write for Booklet and Prices — New York

GUARANTEED PAINT

Good Paint is the only thing that will save your house from decay. We sell it at **factory prices and guarantee it for 5 and 7 years.** You save the dealer's profit. We mix our paint—ready to use, and **pay the freight.** We offer **two gallons, free** to test, out of an order. Return balance at our expense if the two gallons are not satisfactory and get all your money back. Write today for our **Free** paint book, color cards and instructions how to paint. Don't buy stale paint with no life in it. Buy **fresh made to order guaranteed** paints from

O. L. Chase, The Paintman

Dept. 39, 1220-24 Liggett Bldg., ST. LOUIS, MO.

Spray 30 Acres a Day

Potatoes, Small Fruits, Vines

Spraying that counts. 6 rows at a time with force to do work right. Foliage sprayed all over, under as well as on top. **The Perfection Sprayer** is also great at orchard work. Spray trees by hand. **Easy to maintain 100 pounds pressure with two nozzles going.** Strong 60-gallon tank, perfect agitation, absolutely best spray pump made. Spray pipes fold up—you can drive close to trees and in narrow places. Nearly 25 years sprayer builders. We know requirements, and know the **Perfection** is right. **Nearly 2000 now in use.** All giving satisfaction. **Write for Free Catalog.** Don't buy any sprayer till it comes.

THOMAS PEPPLER & SON

Box 106, Hightstown, N. J.

Ladders, Baskets

Crates, Presses Picking Bags

EXCELSIOR CUSHIONS

If You Want the Best Send a Card for Catalogue

Bacon & Company

Appleton — New York

FRUIT-GROWER CROP REPORTS

Prospects for Fruit Crops.

Edwin Taylor of Kansas once described a fruit farmer as "one in whose breast hope springs eternal—every spring."

It's evident that real fruit farmers wrote our crop reports this month, for certainly we have never published a more hopeful lot of reports, taking fruit crops as a whole.

Small fruit plantations generally are not in good condition and, taking all fruit districts into consideration, there is a reduced acreage. It may be that the thinner stand of strawberries will mean larger berries, but it is likely that the crop will be lighter than that of a year ago, and good prices should prevail where proper marketing methods are practiced.

Raspberries and blackberries are also in bad condition, having been hurt first by last summer's drouth and later by the severe winter.

Peaches have been injured over a wide territory, but practically every Southern peach district has promise of a heavy yield. Oklahoma is likely to furnish a lot of peaches this year, and the Texas, Georgia and Arkansas crops will be large, with favorable weather. North of the southern line of Missouri there will be few peaches in the Middle West, exceptions being made of a part of southern Kansas and a part of the southwest corner of Missouri. The peach crop of the states west of the Rocky Mountains promises to be a very heavy one. In the East the best peach districts of Delaware, Maryland and Virginia will have fruit, but the lake regions of New York will have light yields.

All reports indicate unusually favorable conditions for apples, in every fruit district of the country. In parts of Illinois, Missouri and Kansas there is some complaint of injury to Jonathan buds, but prospects indicate uniformly good apple crops everywhere. It is also evident from our reports that more attention will be given the orchards this year than ever before.

It should be borne in mind that the season is from two to four weeks late, and that there is abundant opportunity for fruit buds and blossoms to be injured after this date. It must not be assumed, therefore, that these good reports will continue to come in from every section. Conditions are very favorable, however, and with ordinarily favorable weather the apple crop should be the largest in years. Our reports were all made out from about the 17th of April to the 20th, at which time few apple trees were in bloom in districts where apples are extensively grown.

More interest is manifested in The Fruit-Grower's crop reports this season than ever before, and we ask the co-operation of every reader in making these reports of most practical value to our subscribers. If there is any important fruit-producing section not represented in our reports, write us about it, and suggest name of correspondent.

Our summary of reports follows:

Arkansas

Bentonville.—No strawberries to ship this season, but 200 acres planted this spring. Peaches promise one-fourth to half crop. Apple prospects fine, with more spraying than ever before being done.—G. T. L.

Camden.—Four times as large acreage of strawberries as last year, with good prospects for crop. Peach prospects fine. Apple prospects very fine. More strawberries and peaches will likely be shipped than ever before.—J. M. L.

Dardanelle.—Prospect for fine crop of peaches and apples.—H. J. B.

Dardanelle.—Good peach crop promised and very fine crop of apples.—F. R. R.

Decatur. — About same strawberry acreage; good prospects for crop. Blackberries and raspberries poor. Peaches, 25% of crop. Prospects for bumper crop of apples, with many new orchards bearing for first time.—E. N. P.

Farmington. — Increased acreage of strawberries, with good prospects for crop. One-half to three-fourths crop of peaches. Well cared for apple orchards have a heavy, healthy bloom and promise good yield.—A. T.

Fayetteville. — Increased strawberry acreage, prospects for fair crop, some plantations having been hurt by drouth. Grapes also promise well. Some peach buds killed, but more than enough for full crop throughout Northwest Arkansas. Excellent prospect for apples. Spring very late.—E. W.

Gravette.—About same acreage of strawberries, with good prospects for crop; other small fruits promise well. Peaches promise good crop, and apples extra fine.—P. A. R.

Guntersville.—Small fruits of all kinds in good condition, promising 80% of crop. Peaches, 75% of full crop. Apple prospects fair.

Hiwassee.—Strawberry acreage double last year's; condition good. Peach buds and trees in good condition, and promise one-half to two-thirds of crop. Apple prospects never better.—J. B. E.

Judsonia.—About 3,000 acres of strawberries, which should produce about 300 cars of fruit.—J. A. B.

Mena.—Fine prospects for fruits of all kinds, with increased acreage of strawberries.—A. H. B.

Mulberry.—Finest prospect for peaches we have ever had.

Ozark.—Peaches promise good crop; apples the same.—W. H. S.

Russellville.—About same acreage of strawberries as last year, with fine prospects for crop, about three weeks late. Peach prospects as good as I ever saw. Apples promise big crop. If no injury is sustained later we should have bumper crops of berries, peaches and apples.—C. C. M.

Wickes.—Strawberry crop light. Peach crop promises to be very heavy. Well cared for apple orchards promise well. Strawberry season about thirty days late.—L. C. W.

Colorado

Cedaredge.—All kinds of fruits in excellent condition except dewberries, which killed back. Season two weeks late, with prospects for bumper crops.—H. J. W.

Delta.—No damage to trees or buds, and prospects for all kinds of fruits were never better.—L. W. S.

Dolores.—Prospects for fruit crops were never better.—C. H. T.

Grand Junction.—Buds very backward and all in perfect condition. Season perhaps four weeks late. Prospects for largest crop ever produced here.—H. G. F.

Hotchkiss.—Have never seen better prospects for fruits of all kinds in the fifteen years I have been here. Season is two weeks late.—T. P.

Lebanon.—Everything is in perfect condition throughout the Montezuma Valley, and we look for heavy crops of all kinds of fruit.—S. H. P.

Manzanola.—Some apple and cherry trees were hurt by very severe winter, and crop will likely not equal the heavy crop of two years ago. Large acreage to be planted to cantaloupes.—E. McC.

Morrisania, Grand Valley.—Everything is in excellent condition, with buds very backward. Peaches, apricots, cherries, plums, etc., promise full crops, and apple prospects were never better. From present indications will have much larger crop than last year.—E. H. F.

Palisade.—All fruit trees in splendid condition for heavy yields, and season is about three weeks late. Peaches not yet in bloom on April 17.—J. H. D.

Paonia.—Peaches and apples promise full crops. Season is late.—G. W. H.

Connecticut

South Glastonbury.—Reduced strawberry acreage, on account of drouth. Ninety per cent of peach buds killed. Apple prospects fine. Connecticut's peach crop promises to be about enough to supply the state's needs, but very few peaches to ship.—J. H. H.

Delaware

Dover.—Everything looks good here; prospects never better.—H. R. H.

Georgia

Augusta.—Peach orchards in fine condition, and give promise of heavy crop. If trees are not thinned severely there will be much small fruit on market.—L. A. B.

Idaho

Emmett.—Prospects in the Payette Valley were never better. All kinds of fruits promise well. We have 1,100 acres of peaches in bearing this year.—A. H. M.

Gooding.—Prospects good for all fruits, but most of our orchards are still young.—G. W. W.

Lewiston.—All fruits promise heavy yields at this time. Heavy snow within twenty miles of us and expect frost and freezing tonight (April 20).—J. E. B.

Nampa.—Trees generally in fine shape and promise bumper yields.—L. M. C.

New Plymouth.—Peaches not in good condition, but apple prospects are very fine.—H. M. W.

Payette.—Prospects for biggest apple crop the Payette Valley has ever produced.—T. A.

Illinois

Alton.—Poor prospects for small fruits. Peach buds all dead; trees unhurt by winter, but many dead from San Jose scale. Apple prospects good, with season late.—E. A. R.

Astoria.—Small fruits hurt by winter. Only a few live peach buds left. Apples promise a light bloom.—N. A. J.

Batchtown.—Fine prospects for apples, except Jonathan.—B. T. D.

Carmi.—Much larger acreage of strawberries; fields in fine condition. Peach buds dead, trees damaged. Apple prospects fine.—E. K.

Centralia.—Reduced acreage of strawberries, some fields plowed up. Peach buds all dead. Apple prospects fairly good, and we will have lightest bloom in years. No blooms on trees which bore heavily last year, and no blooms on neglected trees, whether they bore last year or not. Ben Davis have best bloom.—W. S. P.

Calhoun.—Small fruits about an average crop. Peach buds dead, trees damaged. Small crop of apples indicated.—G. E. M.

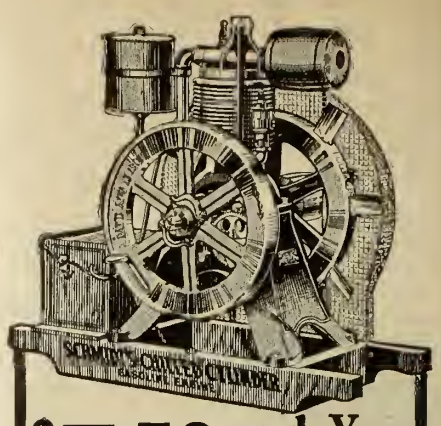
Creal Springs.—Strawberries promise well, but bush fruits badly winter killed. Peach buds all dead and trees badly damaged. Apples promise a bumper crop. Tender grapes killed. Wheat badly frozen.—L. J. R.

Fulton.—Small fruits promise light crops, except gooseberries and currants. No live peach buds and old trees killed. Apple prospects good.—L. S.

Gillespie.—Unprotected briars winter killed; strawberries all right. Peach buds all dead, trees only slightly hurt. Apple prospects good.—S. H. K.

Hardin.—No peaches. Fair prospects for apples, except Jonathan.—J. K.

Kinmundy.—Small fruits badly hurt by winter. Peach buds all dead. Apple



$7.50 and You Keep This Great Engine

We will ship you Schmidt's Chilled Cylinder Gasoline Engine on your simple request without an order or any promise from you. You use the engine 10 whole days. Then if you don't want it send it back at our expense. If you do wish to keep it, pay us **only $7.50 and you can pay the rest in the easiest monthly payments.** **We send you the engine free,** to prove to you that it is the greatest **air cooled** 3-horse-power engine on earth. Also your choice of 1½ H. P. and 7 H. P. engines. We want you to see for yourself that it is better than any other engine that costs twice and three times as much. It is the only engine that has the marvelous, powerful **chilled cylinder.** The only engine for farm use with a **spark retarder.** The new type gasoline engine that has revolutionized the gasoline engine industry.

Ten Days Trial FREE

This is the first genuine free trial ever offered on gasoline engines for farm and shop use. We want you to see that women and children can run this engine. Use the engine to run the pumps and any other machinery you may have. Schmidt's Chilled Cylinder Gasoline Engine is absolutely **guaranteed for five years** in every piece and part. The biggest bank in Iowa backs our $1000 challenge offer on our engines. Write to us promptly for particulars and we will send you a copy of our new book, "How to Use Power," free and postpaid. Write to us today.

SCHMIDT BROS. CO. ENGINE WORKS

DEPARTMENT 3665 — DAVENPORT, IOWA

In writing advertisers please mention The Fruit-Grower.

RIGHT NOW

Is the Time to Send for Our Price List on

Fruit Trees

Varieties True. No Disease.

WE PAY THE FREIGHT

For Price List Address

NEW HAVEN NURSERIES

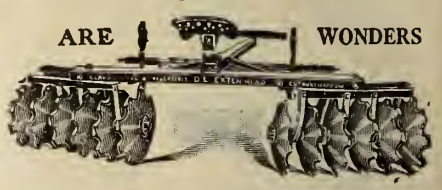
Box 125 — New Haven, Mo.

In writing advertisers please mention The Fruit-Grower.

CLARK'S

Cutaway Harrows

ARE WONDERS



Two-Horse Single Action Cutaway Orchard or Farm Harrow with Extension Head, Reversible; also One-Horse Size; and the Only Double Action Harrow that can hold the rear gangs Rigid to follow in the exact Center of ground left by Front Gangs. The Only Genuine Double-Action Steel Jointed Pole Cutaway Harrows. (Can be Extended.) For orchard or farm.

Elastic Pruning Paint

For Damaged Fruit and Shade Trees

Save those already damaged by rabbits, borers, pruning or other causes. Write for catalog to

E. G. MENDENHALL

Fruit Growers' Supply Depot

Box 300 — Kinmundy, Illinois

Start a Band

BIG PAY Easy to Learn By our New Plan

You can easily learn to play any Instrument. We give a fifty lesson certificate FREE to customers. Organize a band or orchestra in your town. Lots of pleasure and you get big pay. We are one of the oldest and largest instrument houses in America. We have everything and we guarantee our goods to be right in price and quality. Send your name and address today and we will give you full particulars and free catalog explaining everything. Don't buy anywhere at any price until you hear from us. Write a letter today saying: "Please send me Free catalog of musical instruments."

JENKINS MUSIC CO., 127 Jenkins Bldg., Kansas City, Mo.

prospects good, except Jonathans.—W. B. L.

Neoga.—Strawberries all right, but canes of bush fruits winter killed. Peach buds all dead. Apple prospects fine.—H. A. A.

Quincy.—Peaches killed. Apple prospects fair; light bloom on old orchards.—C. H. W.

Indiana

Lawrenceburg.—Small fruits promise fair crops. Peach buds all dead, trees unhurt. Farm apple orchards about all dead from San Jose scale; commercial orchards in good condition, but will have only fair bloom, some varieties not having any at all. I am using soluble oil for San Jose scale, instead of lime-sulphur, with better results.—W. B. F.

Mitchell.—Peach buds dead, trees all right. Apple trees will have 75% bloom.—J. A. B.

Vincennes.—Peaches winter killed. Apple prospects good.—H. M. S.

Iowa

Des Moines.—American plums all right, Japs injured by winter. Peach buds dead. Apples promise fair crop with normal season.—W. G.

Glenwood.—Small fruits in poor condition. No live peach buds. Apple prospects fair, but not as good as last year.—S. H. P.

Hamburg.—Grapes, raspberries and blackberries badly hurt by winter. Peach buds dead, and many trees killed. Apple trees promise good crop, but not so full of buds as last year.—J. M. B.

Hamburg.—Apple trees promise good bloom on most varieties; season very late.—C. E. M.

Harlan.—Small fruits promise good yields. Peach buds dead. Apples promise 60% of crop.—W. M. B.

Randolph.—Peach buds dead, trees in fair condition. Apple prospects good and late spring is favorable.—F. P. S.

Williamsburg.—Small fruits promise well. Peach buds dead, trees badly hurt. Apple prospects, 60% of a crop; some trees injured by winter, and others have no fruit buds.—F. O. H.

Kansas

Augusta.—Prospects good for all kinds of fruits.—F. C. R.

Bethel.—Apple crop will be about half crop; no Jonathans.—J. G.

Cedarville.—Small fruits hurt by winter and drought, but other fruits promise best crop ever raised here.—B. F. T.

Council Grove.—Fair crops of small fruits. Fair setting of live peach buds. Apple prospects good, except on trees which bore heavily last year.—J. S.

Edwardsville. — Everything promises well but peaches, and no live peach buds were left.—E. T.

Hiawatha.—Small fruit prospects good. No peaches left. Apple prospects fine.—J. A. J.

Hutchinson.—Peaches seem all right. Apple prospects best in years; season two weeks late.—W. H. U.

Independence.—Small fruits crop light. Peaches promise full crop. Apple prospects good, but no commercial orchards here.—F. L. K.

Leavenworth.—Small fruit prospects fair, having been hurt by drouth last summer. Peach buds dead, trees all right. Apple bloom promises to be good, but not too heavy.—E. J. H.

Neely.—Peaches killed. Apple prospects excellent, except Jonathan; trees should be in full bloom first week in May.—G. C. R.

Newton.—Small fruits of all kinds in fine condition. Peaches promise well. Apple prospects good at this time.—R W. C.

Ottawa.—Prospects good for all kinds of fruits.—W. A. C.

Pittsburg.—Small fruits injured by winter. Peach buds dead. Fair prospects for apples.—C. A. H.

Troy.—Increased acreage of strawberries, in good condition; raspberries normal; some winter injury of blackberries. Peach buds dead, trees badly damaged. Apples promise well. Grapes in good condition.—G. W. K.

Wichita.—Small fruits promise well, as do peaches. Apple prospects good.—E. G. H.

Winfield.—Small fruits in only fair condition. Peach prospects good. Apple prospects never better.—W. S. T.

Kentucky

Bardwell.—Prospects for good crops of small fruits. Peach buds nearly all dead. Apple prospects good, but little spraying is done here.—G. G. W.

Bayou.—No live peach buds left. Apple prospects fine, but most orchards are neglected.—G. N. McG.

Lewisport.—All peach buds and many trees killed. Apple trees have fair bloom, with many badly infested with San Jose scale.—E. N. A.

Marion.—Small fruits will have light crop. Apple prospects fine.—W. L. A.

Maine

Dexter.—Small fruits promise well. Apple trees look well, but this is our off year for apples.—A. A. E.

Gardiner.—It looks as though there should be a fair crop of fruit on well cared for apple orchards.—I. L. W.

Massachusetts.

Amherst.—Small crops in fair condition. Peach buds mostly winter killed. Apple prospects good.—F. A. W.

Rowley.—New strawberry fields hurt by drouth, old fields in fair condition; cane fruits hurt by winter. Hardier varieties of peaches have one-third setting of live buds. Apple prospects good, with more attention being given orchards than ever before.—J. H. W.

Ipswich.—Small fruits in fair condition. Peach buds about all dead. Apple prospects good. A famine of strawberry plants this spring.—A. F. T.

Michigan

Allegan.—Strawberries promise well. About 25% of peach buds are alive, trees unhurt. Apple orchards in good condition, with more spraying than usual being done.—W. H. S.

Clare.—Small fruits promise well. Peach buds all dead, and many trees killed to snow line. Apple prospects good, where trees were not damaged by winter. Don't know of a peach tree which escaped great injury, and many young apples had new growth all killed back.—J. R. H.

Copemish.—Small fruits in good condition, but peaches, plums and pears are in bad shape. Apple prospects seem to be good.—L. L. M.

Clinton.—Strawberries all right, bush fruits hurt by winter. No peach buds alive, and many trees hurt. Indications are for fair apple crop.—D. W.

East Jordan.—Peach buds all dead and I fear the trees also. Apple crop promises to be fair.—E. H. C.

Fennville.—Strawberries all right, but cane fruits were frozen to snow line. Most peach buds dead and in many cases trees have been badly damaged. Apple prospects fine.—C. E. B.

Grand Rapids.—Peach buds are all dead and trees are pretty black. Some apple orchards will have full bloom, and more spraying for scale has been done this spring.—L. E. W.

Hart.—Increased acreage of strawberries in good condition; other small fruits promise well. May have 10% of peach crop, but many young trees have been badly injured by winter. Apple trees which did not bear heavily last year have good setting of buds, others have light bloom.—B. G.

Holland.—Strawberries promise well, other small fruits injured by winter. Few live peach buds. Where apple orchards have been well cared for prospects indicate heavy crop.—R. M.

Parma.—Small fruits about in normal condition. Peach buds all dead and many trees hurt. Apple prospects fairly good.—O. S. L.

South Haven. — Strawberries good, raspberries and blackberries fair. About 15% of peach buds left. Apples are all right, after a very severe winter.—F. F. F.

Minnesota

New Ulm.—Plums look promising, as do apples of all kinds grown here.—W. P., Jr.

Redwood Falls.—Strawberries, plums and apples promise well.—G. M.

Missouri

Cape Girardeau.—Small fruits in good condition. Peach buds dead, trees badly hurt, perhaps three-fourths of the trees being dead. Apple prospects good.—L. R. J.

Cedar Gap.—No peaches, but very fine prospects for apples.—L. E.

Columbia.—Reports covering all strawberry growing districts show that some fields were injured by winter, the state as a whole showing about 70% of stand of plants. Many correspondents report increased acreage, so this increase will doubtless offset poor condition of old fields, and Missouri should produce a normal crop of strawberries.—W. W. C.

Columbia.—Strawberries promise well, despite drouth; bush fruits killed back. Peach buds dead, trees all right. Apple prospects good. Everything promises above the average, except peaches and raspberries.—J. C. W.

Dixon.—Strawberries promise well; blackberries injured. No peaches, and trees have been hurt. Apple prospects good.—L. A. R.

Koshkonong.—Small fruits in fair condition, and we have about forty acres of strawberries to fruit this year, as against none last. Peaches winter killed. Apple prospects fair.—H. S. V.

Lebanon.—Small fruits in fair condition. Peach buds killed and some trees. Apple prospects the best ever; wherever an apple tree is found, it will be found full of buds.—A. T. N.

Maryville.—Apple prospects are very good.—C. C. M.

Mt. Vernon.—Fair prospects for small fruits. Not more than 10% peach crop. Apple prospects good where orchards have been sprayed.—J. C. F.

Neosho.—Some strawberry fields promise well, but some were hurt by winter; average is good. It looks as though car lot shipments would go out about May 25.—J. B. G.

Neosho.—Small fruits generally promise well. Peaches in good condition at my place, and apple prospects good.—H. T. F.

Oregon.—Fair prospects for small fruits. No peaches. Apple crop promises well.—J. H. M.

Parkville.—Small fruits promise light crop. Peach buds dead. Apple prospects are good.—J. H. D.

Pilot Grove.—No live peach buds and trees in bad condition. Apple prospects fair.—J. E. S.

Pomona.—Larger acreage of strawberries, fields in excellent condition. Peach buds dead. Apple prospects splendid.—A. B. C.

Poplar Bluff.—Strawberries promise good crop, but late; raspberries and blackberries damaged. Peach buds dead, trees damaged. Apples promise well, but this county should consume more fruit than it grows this year.—J. N. H.

Republic.—Small fruits promise well. Light crop peaches. Apple prospects good.—F. E. O.

Richland.—Small fruits fair. Peach buds dead and trees damaged. Apple prospects medium.—E. A. S.

Richmond.—Small fruits in very good condition. Peach buds dead, trees badly damaged. Apples and pears seem most promising.—J. S. M.

Rocheport.—Peach buds dead, trees damaged. Apple crop will likely not be heavy.—G. W. R.

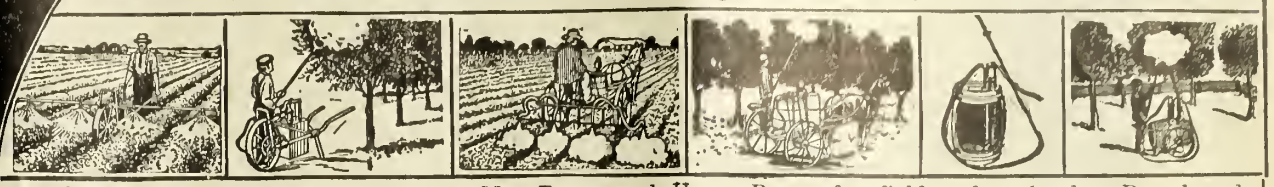
Sarcoxie.—Increased strawberry acreage, prospects fairly good. Apples a failure here for twenty years.—D. W. B.

Skidmore.—Peach buds nearly all dead and old trees about cleaned up. Apples promise light yield, Ben Davis and Gano

HURST SPRAYERS ON FREE TRIAL

NO MONEY IN ADVANCE—NO BANK DEPOSIT—PAY AFTER IT HAS PAID FOR ITSELF.

LET US SEND YOU ANY OF THESE SPRAYERS—to try for 10 days, then if you buy, you can pay us cash or we'll wait till next fall for our money.—The extra profit will more than pay for it. We pay freight. LOWEST PRICES. HIGHEST QUALITY. 5 YEAR GUARANTEE.



Quality Sprayers for every purpose. Man Power and Horse Power for field and orchards. Barrel and Power Sprayers all give high pressure and produce vapor spray that kills scale, prevents blight and scab, and rids your crops of all fungus and insect pests. Hurst Sprayers have brass ball valves and all the working parts that come in contact with the solution are made of brass. Cyclone agitation insures an even distribution of the spraying materials and best results. These sprayers are practical, made by men who know the needs of the fruit grower and farmer and know what a sprayer should do. Our long experience in the manufacture of sprayers, together with the capacity of our large factory, enable us to build the very best sprayers at the very lowest prices. We guarantee our sprayers for five full years and ship on free trial—no money in advance. That's evidence of quality. Write today—see special free offer below.

Big complete spraying guide, showing cuts of all pests, FREE TO OUR CUSTOMERS.

FREE You can get a Hurst Sprayer absolutely free if you are the first in your locality this season to send for one of our sprayers for trial. You need do no canvassing or soliciting. It will only take 15 minutes of your time. We do the work. When you get a sprayer from us you get the benefit of our 25 years' experience in manufacturing sprayers. Hurst Sprayers won the gold medal at the National Horticultural Congress spraying machine contest. Send us a postal or mark the attached coupon and mail it to us and we will send you our fine catalog, spraying guide, and will tell you how you can get a sprayer free. Don't delay, write us at once for our free sprayer proposition and save money. **H. L. Hurst Mfg. Co., 184 North St., Canton, O.**

H. L. HURST MFG. CO., 184 North St., Canton, O.
Send me your Catalog, Spraying Guide and "special offer" on the sprayer marked with an X below.

.....Man-Power Potato and Orchard Sprayer.
.....Horse-Power Potato and Orchard Sprayer.
.....Fitz-All Barrel Sprayer.
.....Power Orchard Sprayer.

NAME.....
ADDRESS.....

COUPON—Fill out and Send Today

800 GALLONS OR 1500 GALLONS?

A few years ago the N. Y. Experiment Station started out to prove that "Scalecide" was too expensive, but they found that in orchard work 9 gals. of "Scalecide" went as far as 17 gals. of Lime-Sulfur. This being the case, a barrel of "Scalecide" which makes 800 gals. of spray at the strongest strength, will go as far and do better work than 1500 gals. of Lime-Sulfur spray, which will require 3⅓ barrels of the best Lime-Sulfur. The Missouri Experiment Station reports that "Scalecide" killed 100% of scale in 5 out of 7 tests. Lime Sulfur did not do it once in 10 tests in the same orchard. "Scalecide" has greater fungicidal properties than Lime-Sulfur as a Winter wash. A postal request to Dept. "E" will bring by return mail, free, our book, "Modern Methods of Harvesting, Grading and Packing Apples," and new booklet, "Scalecide—the Tree-Saver." If your dealer cannot supply you with "Scalecide," we will deliver it to any R. R. Station in the U. S. east of the Mississippi and north of the Ohio Rivers on receipt of price. 50-gal. bbls., $25.00; 30-gal. bbls., $16.00; 10-gal. cans, $6.75; 5-gal cans, $3.75. Address, B. G. Pratt Company, 50 Church Street, New York City.

H. J. WEBER & SONS NURSERY CO., WESTERN DISTRIBUTING AGENTS, NURSERY, MISSOURI

Chemicals *for* Spraying

(BULK PRICES)

Our Fungicides and Insecticides comply with the various National and State Insecticide Laws. In fact are considerably better than these laws require.

REVISED LIST OF PRICES TO DATE

Arsenate of Lead		**Lime and Sulphur Solution**	
1-lb. Jar	$ .21	Guaranteed 33% Baume	
5-lb. Jar	.80	1 Gal. Jug	$ .60
12½-lb. Pail	1.75	5 Gal.	1.50
25-lb. Kegs	3.25	10 Gal.	2.90
50-lb. Kegs	6.75	**Hellebore (White)**	
100-lb. Kegs	12.00	1 lb.	$ .16
200-lb. Bbls.	23.00	10 lbs.	1.50
Copper Sulphate (Bluestone, Small Crystals)		**Hellebore (Black)**	
1 lb.	$ .12	1 lb.	$ .18
10 lbs.	1.00	10 lbs.	1.60
100 lbs.	9.00	**Bordeaux Paste**	
500 lbs.	42.50	1 lb.	$ .18
Sulphur (Commercial)		5 lbs.	.68
Per 100 lbs.	$3.00	10 lb. Pail	1.30
Paris Green		20 lbs.	2.20
½ lb.	$ .15	**London Purple**	
1 lb.	.25	1 lb.	$ .16
5 lbs.	1.20	5 lbs.	.75
14 lbs.	3.20	25 lbs.	3.50

Order above goods on this number, 11D22.

Write us your needs. We sell Sprayers from 29c to $250.00 each. Our prices will save you money.

SPRAYER OUTFIT

23FG11—SPRAYER OUTFIT, complete as shown, weight 45 pounds **$8.25**

We do not furnish barrels

Jones, Post & Co., 1090 Liberty Street, Kansas City, Mo.

Rubber Roofing

Warranted For Twenty-Five Years.

FREIGHT PAID To Any Station East of Rocky Mountains, except Texas, Okla., Colo., N. D., S. D., Wyo., Mont., N. M., La., Ga., Ala., Miss. and Fla., on all orders of three rolls or more. Special Prices to these States on request.

ONE-PLY - - - - Weighs 35 lbs., 108 Square Feet, $1.10 per roll.
TWO-PLY - - - Weighs 45 lbs., 108 Square Feet, $1.30 per roll.
THREE-PLY - Weighs 55 lbs., 108 Square Feet, $1.50 per roll.

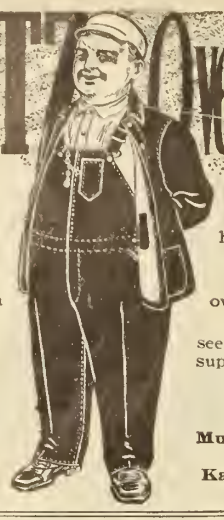
TERMS CASH: We save you the wholesalers' and retailers' profit. These special prices only hold good for immediate shipment.

Indestructible by Heat, Cold, Sun or Rain.

Write for FREE SAMPLES or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to Southern Illinois National Bank.

CENTURY MANUFACTURING COMPANY, Dept. 416 East St. Louis, Ills.

FITZ Overalls

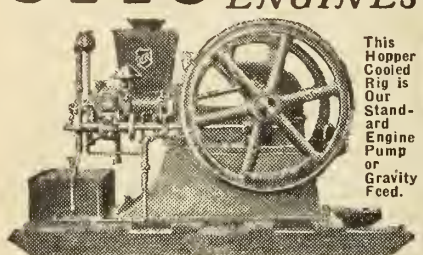


Are made to fit all from a three-year-old boy to a 500-pound man. The FITZ reserve stock is always complete—insist on FITZ

If your home dealer does not carry FITZ overalls write and we will see that you are supplied. Free FITZ book on request.

Burnham-Munger-Root D. G. Co.,
Kansas City, Missouri.

OTTO GASOLINE ENGINES



This Hopper Cooled Rig is Our Standard Engine Pump or Gravity Feed.

The Farmers Favorite. Otto Engines are sold on an absolute guarantee which fully protects you. Built in all sizes—1 H. P. up. All styles—portables, tractors, stationary. Send for our bulletin No. 4, stating size of engine wanted and kind of work you have to do.

THE OTTO GAS ENGINE WORKS
1205 Union Avenue, Kansas City, Mo.
3314 Walnut Street, Philadelphia, Pa.

Irrigate Your Orchard or fruit patch without expense or bother of pumping. Use an automatic

RIFE RAM

Costs little to install—nothing to operate. Raises water 30 feet for every foot of fall. Land lying above canal or stream supplied with water. Pumps automatically day and night, winter and summer. Fully guaranteed.

If there is a stream, pond or spring within a mile, write for plans, book and trial offer, FREE.

RIFE ENGINE CO.
2521 Trinity Bldg., New York

GET 35c TO 50c MORE PER CRATE FOR YOUR RASPBERRIES

BY PLANTING OUR VIGOROUS NEW EARLY

"BLACK PEARL"

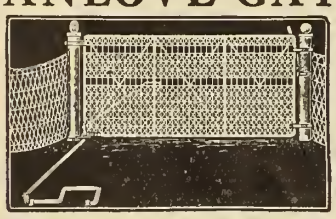
Crops very heavily and is a firm shipper. Free from blight, never crumbles, and is five to ten days earlier than other varieties. Never winter killed. Large as the Cumberland, but more prolific, and jet black. Tested nine years under our own observation. Sells on the market for 35c to 50c more per crate than all other varieties. Write for full information. Free catalogue and price list of fruit trees, small fruit plants, ornamental shrubs and flowers.

Trade Mark, registered. Serial No. 84394.

Established 20 years.

HOLSINGER BROS.
Box 69, ROSEDALE, KAN.

MANLOVE GATE



Automatic. Always in order. Opened or closed without assistance or stopping. Adds beauty, value, safety and convenience to any home, and is approved by Government for Rural Routes.

Manlove Gate Co., 23 West Huron St., Chicago, Ill.

Harvey Bolster Springs

prevent damage to eggs, garden truck, fruits, live stock on road to market. Make any wagon a spring wagon. Soon save cost—produce brings bigger prices—wagon lasts longer—horses benefited—thousands in use—"my wagon rides like auto" says one. Get a pair at dealers. If not at dealer's write us. Insist on Harvey's, 40 sizes—fit any wagon—sustain any load to 20,000 lbs. Catalog and fistful of proofs free.

HARVEY SPRING CO., 7361 7th St., Racine, Wis.

GUARANTEED

Rubber Stamps

You need Rubber Stamps for marking berry boxes, crates, stationery, etc. Send for free catalogue.

Gardner Office Supply Co. SPRINGFIELD MISSOURI

having been hurt by last season's drouth. —W. W. G.

Seymour.—Strawberry prospects poor; other berries fair. Peach buds dead. Apple prospects good.—S. L. W.

Springfield. — Increased acreage of strawberries, but fields not in as good condition as last year. Peaches killed and trees injured. Apple orchards which have been cared for promise fine bloom. —W. A. I.

Montana

Missoula.—Apples here should be a record breaking crop, from present indications.—H. C. B. C.

Nebraska

Johnson.—Strawberries in poor condition; other small fruits better. About 10% live peach buds. Apple prospects indicate 75% of crop, but plenty of time to freeze yet.—G. S. C.

Table Rock.—Small fruits generally promise well. About 10% of peach buds are alive. Apples promise a bumper yield.—O. D. H.

Tecumseh.—Strawberry fields in bad condition; blackberries promise well. All prospects good; in fact, all kinds of fruits promise heaviest crop in history of county.—E. J. D.

New Hampshire

Rochester.—Peach buds all killed. Apples promise full crop.—A. I. H.

New Jersey

Hammonton.—Small fruits promise fair yield; raspberries good, blackberries hurt by winter. Peaches in fine condition. Few apples grown here.—W. H. P.

New Mexico

Artesia.—Small fruits in good condition. Peaches promise well where smudged a few mornings. Apples promise heavy yield, with many new orchards coming into bearing.—T. M. L.

Arroyo Hondo.—Peaches and apples promise abundant yields. Season is late and buds in fine condition.—J. L. S.

Farmington.—Prospects for a large fruit crop could not be better.—J. A. B.

Mesilla.—Apples and pears promise good crops, peaches light.—C. E. L.

New York

Adams Basin.—Some peach orchards have lost most of the fruit buds; this is true of trees cultivated late last fall. Apple prospects look bright now.—C. O. B.

Brockport.—Apples promise fair yield. Spraying of trees while dormant is now in progress.—F. U.

Fayetteville. — Strawberries promise well, canes of bush fruits injured by winter. Nearly all peach buds dead and some trees hurt. Apple trees seem to be well set with buds.—F. E. D.

Interlaken.—Peach buds killed, trees all right. Apples should give average crop. —W. A. B.

Jay.—Small fruits quite promising. Apple crop promises better than a year ago. —H. T. S.

Penn Yan.—Many peach buds killed. Apples promise a normal crop.—R. L. E.

Sodus.—Small fruits in fine condition, with increased acreage. Live peach buds are scarce, but trees are all right. Baldwin apple trees have good set of buds; Greenings not so good. Weather so far has been favorable.—E. B. N.

North Carolina

Mount Airy.—Peach trees blooming heavily. Apple trees in better condition than usual, and prospects for full crop; now in bloom.—S. P. C.

Raleigh.—Small fruits very promising. Peaches promise well. Apple prospect best in years.—W. N. H.

Taylorsville.—Prospects fine for all kinds of fruits. Apple prospects best ever; never had such a fine bloom as this season.—W. T. R.

Waynesville.—Peaches are all right. Apples promise an abundant yield, except Newtown Pippins; trees now in bloom. Haywood Fruit Exchange will market our crop of apples.—B. H.

Ohio

Amsden.—Peach buds in good condition. Season is late, but apples look all right, and many growers will spray.—C. S.

Batavia.—Strawberries promise fairly well; some winter injury to raspberries. No peaches worth while. Apple prospects good, especially on trees that did not have full crop last season.—J. H. D.

Gahanna.—Peaches mostly killed. Prospects for one-fourth apple crop.—C. E. D.

Gypsum.—Peach buds showing up better and should have half crop in Ottawa County. The high clay knolls have the fruit. Apple orchards look well; too early to tell as to fruit.—W. M.

Middleport.—Strawberries good; raspberries not so promising. Peaches promise well. Apple trees in fine shape for heavy crop, and lots of spraying being done.—G. E. C.

Proctorville.—Fair prospects for small fruits. Peaches promise very well. Apple prospects very best.—U. T. C.

Wooster.—Strawberries hurt by last season's drouth, and bush fruits by hard winter. Peaches badly hurt, and sour cherries more injured than sweets; plums are also damaged. Apple prospects good, but blossom buds not as plentiful as usual.—W. J. G.

Oklahoma

Ada.—Peaches, apples and pears promise full crops; in fact, trees should be thinned to get fancy fruit.—J. R.

Big Cabin.—Strawberries light crop; other small fruits good. Peaches very good. Apple prospects also good, except that some trees were hurt by last season's drouth.—R. L. M.

Blackwell. — Prospects for all tree fruits, but small fruits are in bad condition.—J. L. V.

Chandler.—Poor prospects for small fruits. Peach prospects fine. Apple trees in good condition and promise good crops. —J. S. D.

Guthrie.—Peach crop promises to be an abundant one; they could not be any better, and this county should ship 250 to 275 carloads.—G. E.

Pond Creek.—Small fruit fields suffered from last season's drouth. Uncultivated fruit trees suffered severely from dry weather last summer, and many trees are dead Trees that are alive promise good crops.—J. T. E.

Ringwood.—Peaches promise full crop. Apple prospects could not be better. Pears coming to be an important crop here and promise well.—H. C. G.

Norman.—Very few berries this season. Fine prospect for peaches. Apple prospects good, except where trees were damaged by drouth last summer.—M. P.

Sterling.—Full crop peaches and apples promise equally well.—J. G. M.

Tahlequah.—Small fruits in bad condition. Peaches promise extra fine crop. Apples best for many years.—D. N. L.

Salisaw.—Small fruits promise only fairly well. Peaches fine, and apples never better.—E. O. D.

Yukon.—Nearly all strawberries died from drouth; other small fruits in poor condition. Peach trees in fine condition and give promise of good crop. Apple orchards which have been well cultivated are in good condition; otherwise trees are dead from drouth. Prospects for crop good.—A. S. P.

Oregon

Cove.—Season is late, but fruits of all kinds promise abundant crops, except apple trees which were overloaded last year. —K. J.

Dallas.—Increased acreage of strawberries; in fine condition. All fruits promise fine crops this season.—N. L. G.

Hood River.—Every kind of fruit promises an abundant yield this season.—E. H. S.

Medford.—Peaches and apricots have bloomed and set a heavy crop. Apple bloom heaviest ever known. Same is true of pears, and everything promises heavy yields; weather ideal.—A. H. M.

Mosier.—Strawberries are in good condition. Peach trees and buds in fine condition. Cherries and prunes promise well. Pears and apples indicate heavy yield, apples being now in bloom (April 18).—A. P. B.

Salem.—Small fruits of all kinds in good condition. Some frost injury to peaches. Apple prospects good, but not yet out of danger of frosts.—C. O. C.

Pennsylvania

Harrisburg.—Nearly all peach buds dead. Apple prospects look good.—A. D. L.

Lightstreet.—All peach buds dead. Apple crop should be fair, with favorable weather hereafter.—H. A. T.

Lorane.—Peach buds all dead, trees unhurt. Apple orchards which have been well cared for promise well, but it's early yet.—J. S. R.

Mifflentown.—Peach buds dead, trees all right. Spring is late, but apples seem all right.—W. B.

Tennessee

Clarksville.—Small fruits promise well. Peaches are promising, but were hurt somewhat. Apple prospects good.—H. C. M.

Fayetteville.—Peaches extra fine. Apple prospects good, but a cold wave may reverse this over night.—S. S. W.

Medon.—Some peach buds killed, but plenty left. Apple prospects good.—W. H. R.

Texas

College Station.—It looks now as though Texas would have one of the greatest fruit crops in its history.—E. J. K.

Jacksboro.—Peaches and pears are well set; plums a failure.—L. H. B.

Utah

Centerville.—Everything here indicates a bumper crop, and growers are giving their fruit trees and plants better care.—W. H. S.

Elberta.—Everything promises well here, with a very backward season.—F. W. S.

Mapleton.—Prospects for fruits were never better. Some young orchards coming into bearing should give us 100 cars of peaches.—S. C. F.

Ogden.—Peaches promise heavy crop. Apple prospects very fine, and late spring is holding buds back.—C. E. B.

Provo.—Late spring is holding everything back, and if there is no frost injury we should have bumper crops.—S. S. B.

Vermont

Addison.—Indications point to a good crop of apples; season backward.—A. T. C.

Bellows Falls.—Small fruits in poor condition on account of drouth. Peaches dead. Apples promise very good yield.—A. A. H.

Virginia

Crozet.—Above 1,000 feet elevation will have 80% of peach bloom; mostly killed lower down. Apple prospects are very best; heaviest bloom in years now opening.—W. W.

Staunton.—Three-fourths of peach buds were winter killed. Prospects for apples best in years.—W. A. McC.

Waynesboro.—Small fruits in good condition. Ninety per cent of peach buds killed. Apple orchards have been pruned, sprayed and well cultivated, and prospects best in years.—H. M. M.

Washington

Chehalis.—So far as can tell now all fruits promise well this year.—J. M.

Puyallup.—Increased acreage of small fruits, indications for full crops. Capacity of canneries more than doubled.—J. Q. R.

Snohomish.—Small fruits promise well, as do tree fruits; latter are now in bloom. —E. C.

Centralia. — Early cherries frosted. Frost last night hurt all stone fruits and pears somewhat. Apple prospects good.—G. G.

Chelan.—Peach trees blossoming; prospects fine. Apple prospects extra good.—A. L. M.

Colville.—Peach buds below average condition. Apple prospects very good.—F. B. G.

Wenatchee. — Apple prospects were never better.—W. T. C.

Greenacres.—Larger acreage of small fruits; condition first class. Peaches promise well, and so do apples. Our crops will be handled this year through the Spokane Valley Growers' Union.—J. C.

Chester.—Peach buds in fine condition and promise a heavy crop. Apple prospects better than ever. Increased acreage of potatoes planted.—H. E. N.

Kennewick.—Strawberry acreage increased; crop in excellent condition. Other small fruits promise well. Peaches and apples promise bumper crops; conditions were never any better than they are now, if they were ever as good, for a heavy yield.—E. M. S.

West Virginia

Charlestown.—Virginia Fruit Exchange has reports indicating crop of peaches on uplands in territory in which this exchange works; lowland orchards have lost most of their crop. Apple prospects are very fine, and new orchards coming into bearing should materially increase last season's crop. Spraying is general and every effort will be made to produce fancy fruit.

Inkerman.—About 10% of peach buds alive; some trees badly injured. Good prospects for apples on upland, but light on low land.—J. A. B.

Martinsburg—Indications are for only partial crop of peaches. Fine crop of apples promised.—N. T. F.

Have "a roof that's proof"

Proof against rain, snow, sun, wind, heat, cold, sparks, alkalis, acids—everything that harms ordinary roofs. Get the roofing made of Nature's perfect weather-proofer—

Genasco

THE TRINIDAD-LAKE-ASPHALT

Ready Roofing

Trinidad Lake asphalt contains natural oils that keep Genasco "alive" and defensive. Manufactured asphalts won't do that—they dry out; and roofings made of them crack and leak. Real economy prompts you to get Genasco.

Mineral or smooth surface. Comes ready and easy for you to lay. Ask your dealer for Genasco. Write us for samples and the Good Roof Guide Book—free.

The Kant-leak Kleet, for smooth-surface roofings, makes seams tight without cement, and prevents nail-leaks.

The Barber Asphalt Paving Company
Largest producers of asphalt, and largest manufacturers of ready roofing in the world.
Philadelphia
New York San Francisco Chicago

20th Century Grader

LET our Free Book tell you all the remarkable money-saving, labor-saving, time-saving advantages of this Famous 20th Century Grader over any other tool intended for the purposes. None compare on any work of grading and leveling roads, building ditches, levees, borders, irrigation laterals, leveling land, cutting sage brush and weeds, scalping alfalfa, cleaning streets and sidewalks and its many other uses.

Does 40 Men's Work—
Pays Back Its Cost In 20 Days

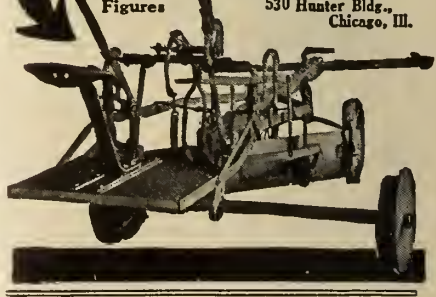
It's the original one-man machine. Thousands in use—all giving splendid service and satisfaction.

FREE BOOK

Tells All Facts and Figures

It is built of steel, lasts a lifetime. Send your name on postal for interesting free book of facts and figures—also letters and photo-illustrations from owners. Address

The Baker Mfg. Co.
530 Hunter Bldg., Chicago, Ill.



Shoo-Fly THE ANIMALS FRIEND

Keeps flies and other insect pests off of animals—in barn or pasture—longer than any imitation. Used and endorsed since 1885 by leading dairymen and farmers.

$1 worth saves $20.00 in milk and flesh on each cow in a single season. Heals sores, stops itching and prevents infection. Nothing better for galls. Kills lice and mites in poultry houses.

SEND $1, if your dealer can't supply you, **for enough Shoo-Fly to protect 200 cows, and our 3-tube gravity sprayer without extra charge.** *Money back if not satisfactory.* Write for booklet, FREE. Special terms to agents.

Shoo-Fly Mfg. Co., Dept. 31 1310 N. 10th St., Phila.

Editor knows from experience that Shoo-Fly is O.K.

MAKE HOME ATTRACTIVE

As a Rule Too Little Attention Is Paid to Ornamentation and Household Conveniences

During the past few months The Fruit-Grower has received more good letters from its subscribers than ever before, and many of these letters make suggestions for changes in The Fruit-Grower which will make our paper of more practical value. Here is a letter from a young man living in Illinois. Mind you, he is a young man and writes from the standpoint of a young person. There's good advice in his letter for us, and there's food for thought on the part of every reader of The Fruit-Grower. He writes:

"As I go up and down the land and see things just as they are I am of the opinion that all of the farm and fruit papers are negligent in not saying more about the ornamentation of farm homes and surroundings. You are everlastingly telling us how to grow more corn, grain, fruit, etc., and how to make another dollar from the cows, pigs and chickens, but very seldom is there anything for boys and girls of country districts telling them how to make their home grounds more attractive, how to make a beautiful lawn, etc. Everything is devoted to the practical, and the artistic natures of young people are neglected, and as a result we see rural districts depopulated and the cities over crowded.

"Give us a few more lessons on making our homes more beautiful and attractive, even if there is less space devoted to articles telling how to make more money. We all know that a well-kept lawn, with well-planted shrubbery and flowers add real value to a farm, and that a place which has been thus improved looks better than one with a yard in which dirty-faced pigs and quacking ducks have free range. Yet homes of the latter kind are all too common, and they are so unsightly and so unattractive that boys and girls are fleeing from them to the city. Let us have some articles on beautifying our homes, please, Mr. Editor."

What this young man says is absolutely true. No greater work can be done than to make farm homes more attractive and more livable. There are thousands of farm homes owned by men who are well-to-do which are absolutely sinful in their influence. The women folks work hard and wear themselves out, because of inconvenient arrangement of the house and lack of labor-saving devices; the young folks compare their home with the homes of others who are less able to afford modern houses, with well-kept grounds, and then they resolve to leave home at the first opportunity—and they leave, too, and no one can blame them.

What can be done to improve conditions? The Fruit-Grower has tried hard, and somehow we feel that our efforts were ineffective. For a long while we had a department, "The Farm Beautiful," conducted by an experienced landscape architect, and during this time we had a standing offer to suggest for any reader of The Fruit-Grower a plan for laying out his home grounds so that they would be most beautiful. Ordinarily plans of this kind cost a considerable sum, but we offered the plans absolutely free of charge, for we wanted to publish articles in The Fruit-Grower describing the plan and telling the whys and wherefores of every suggestion.

At the same time we offered to furnish a planting plan absolutely free for any country school in America, provided some subscriber would send us a sketch of the grounds and building as they are now, or a photograph of the same. All this work was free to our readers, although we paid for the plans, of course.

During the time this offer was made we furnished just two planting plans for subscribers' homes and one for a school building. Certainly there was little encouragement to continue articles of this kind. They are sadly needed, but farmers generally don't seem to be ready for them.

What's the matter, friends? Why is it we will not make our country homes, country schools, country churches, etc., more attractive? Why is it we will be willing to spend money to build a bigger barn and will not spend just a little time and labor in fixing up our yards? Why is it we will be willing to erect a windmill or install a gasoline engine to provide water for the stock, and will not put in a modern water system to save work for the the women folks? Why is it that we will not do these little things, which don't cost much, and which, after all, are what make life worth living?

On our part, we know that farm papers, The Fruit-Grower among them, deserves the criticism of this young man. We are ready to mend our ways, however, just as soon as we can see any signs of appreciation of articles of this kind. Nothing would please us better than to help beautify every home reached by The Fruit-Grower, and every country school and every church which our people attend. But when we publish article after article, month after month, with scarcely a sign of interest on the part of our readers, what are we to do?

Let's all mend our ways. Write us and tell just what The Fruit-Grower can do to help in this great work—for to make country life more attractive and more wholesome is one of the greatest works in which any man can engage. We would like to hear from several thousands of our readers on this subject. This young man has aired his views. Now, what have you to say?

Himalaya Berry Plants Coming Out.

Since the April issue of The Fruit-Grower stated that plants of Himalaya berry had been badly winter-killed we have had letters from a number of subscribers saying that the plants can easily be protected, and that it will likely prove worth while to cover the plants slightly. A letter from Dr. David H. Reeder, LaPorte, Ind., is typical of a number which have been received. Dr. Reeder writes:

"I planted six tips of Himalaya berry in spring of 1911, and five of them lived and made a tremendous growth. I let them run at will on the ground with the exception of a few canes that entered the lawn. We had a severe winter, but I find that the branches which were allowed to bury the tip in the ground are nearly all alive and green. I know nothing of the value of the fruit, but would suggest that in order to check the rapid growth late in the fall the ends of the canes should be buried or else pruned two or three times before frost. The wood will then harden and be ready for the severest weather. A few of the canes on my plants were cut off weekly by the lawn mower and they are all right."

The suggestions offered are worth acting upon, if the fruit of the Himalaya berry proves to be really worth while in the states east of the Rocky Mountains. This season should demonstrate this point, for many plants should be in bearing. The Fruit-Grower will be glad to get reports from those who have this berry fruiting this season.

It is not so much the variety of apples that is grown, but the way they are produced, packed and sold that makes money. Apples of exceedingly low quality, when perfect in shape, color and condition, will sell better than those of the highest quality that are scabby, wormy and bruised.

Select your varieties and plant your trees with due regard to cross pollination. Failure to observe this has resulted in many unfruitful orchards.

TRADE
in your old separator
on account of a new
DE LAVAL
CREAM SEPARATOR

38,796 Users did so Last Year
26,559 in the U. S. Alone

It's come to be an accepted fact that DE LAVAL cream separators are as much superior to other separators as other separators are to gravity setting systems, and that an up-to-date DE LAVAL machine will on an average save its cost every year over any other separator.

Aside from the actual saving in more and better cream and butter and in time of separation and cleaning, easier running, greater durability and less repairs, there's the pride, comfort and satisfaction which none but the owner and user of a DE LAVAL machine can feel in his separator.

In consequence thousands of users of inferior and worn-out separators of various makes take advantage every year of the educational allowances which the DE LAVAL Company continues to make and trade in their old separators.

APPLIES TO OLD DE LAVAL USERS ALSO

While all this applies particularly to the users of inferior separators it applies likewise to the many thousands of DE LAVAL machines 10 to 25 years old. They are not worn out and are still superior to other new machines of today, but there are so many improvements embodied in the modern DE LAVAL machines that these old DE LAVAL users can well afford to make an exchange and soon save the cost of doing so.

SEE THE NEAREST DE LAVAL AGENT

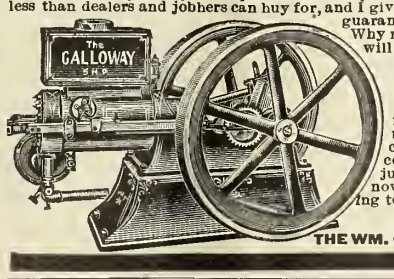
He will tell you how much he can allow on your old machine, whether a DE LAVAL or some other make, toward the purchase of a new DE LAVAL. If you don't know a DE LAVAL agent, write to the nearest DE LAVAL office giving make, number and size of your present machine,and full information will be sent you.

THE DE LAVAL SEPARATOR CO.
NEW YORK CHICAGO SAN FRANCISCO SEATTLE

SAVE $50 TO $300
On a Gasoline Engine According To Size
Ranging From Our Famous 1 3-4 H. P. Pumping Engine up to 15 H. P.

Buy from a real engine factory—save dealer, jobber and catalog house profits. No such offer as I make on this high quality engine has ever been made before in all gasoline engine history.

I operate the largest factories of their kind in the world; manufacture engines in tremendous quantities and sell direct to the user with just one small profit added to cost of material and labor. No use paying big profits to a lot of middlemen. GALLOWAY WILL absolutely and positively save you from $50 to $300 on a gasoline engine that will exactly meet your requirements. Anyone can afford an engine at the prices I am charging. I *sell* for less than dealers and jobbers can buy for, and I give you besides, the best engine possible to build with a 5-year guarantee, and *30 day free trial.*



Why not sell your poorest horse and buy a Galloway 5 H. P.? You will be money ahead at the end of the year.

Get Galloway's Biggest and Best Free Gasoline Engine Book

fully illustrating and describing all Galloway engines. The most complete engine book ever written. Printed in four colors and containing hundreds of letters from men all over the country who have long been using Galloway engines and know just what they are. Don't wait—don't put off! Sit right down now and write me for this book, because it actually means a saving to you of from $50 to $300 on a Gasoline Engine. It will pay you.

WM. GALLOWAY, President
THE WM. GALLOWAY CO., 1035 A O Galloway Sta., Waterloo, Iowa.

SWIFT'S ARSENATE OF LEAD
HIGHEST QUALITY
Insect Pest Destroyer!

Easy to mix — sure to kill. Death to all leaf-eating insects. Save your trees, fruits and vegetables. Put up in paste or dry form.
(Conforms to the National Insecticide Act of 1910.)

Be Sure and Ask for SWIFT'S
and thus always secure GUARANTEED HIGHEST QUALITY.
FOR SALE BY LEADING DEALERS EVERYWHERE
MERRIMAC CHEMICAL CO.
Send for Circular. 49 Broad Street, Boston, Mass.

OUR HOME FOLKS

Conducted by MRS. RUTH MOTHERBY. Address all Communications to Home Editor The Fruit-Grower

The Old-Fashioned Nurse—5.

It is my belief that soreness of the throat can not be too promptly dealt with. No matter what I fancy the cause may be, or what it may indicate, I always put on a cold compress the very first night—or before that if the patient can be induced to go to bed and stay there until the next morning. If the throat is very sore, I change the compress frequently. I take a piece of old linen cloth—table cloth preferably—rather larger than a table napkin, and fold it to the size required to cover the throat; then I dip it into cold water and wring it so that it will not drip. I fasten it with two safety pins to a piece of flannel that, when doubled, is large enough to pin around the neck and reach down well over the chest. The safety pins hold the compress in place. When you wish to renew it, take out the safety pins, but do not remove the flannel; just slip the linen from beneath it, and rinse it well in fresh cold water, then wring it out and replace it under the flannel. The skin must not be exposed to the air during this process, or your compress will do more harm than good. I like to have two pieces of the linen, so as to let one soak in clear cold water while the other is doing duty. I am sure a great deal of poison comes out on these cold compresses; and that is why I change the water each time.

I always give a cathartic when I find a badly inflamed throat. I like senna tea, Epsom salts, or sulphate of magnesia.

In the earlier stages nothing is more efficacious than to gargle with alcohol and hot water; but when the tonsils become badly inflamed I think it irritates them too much to go through the motion of gargling. Sometimes the gargle can be held in the throat for a second without gargling and then ejected with beneficial effect. An excellent gargle is made of one part honey to two parts vinegar. Add a spoonful of strong hot sage tea just before using, so that it may be quite warm when used.

If the throat becomes badly swollen and very painful, apply a poultice of flaxseed upon which you have poured a little warm lard and laudanum. Always rub the neck, throat and chest with alcohol after applying either compress or poultice, before exposing it to the air. This will prevent taking more cold.

To inhale steam from boiling herb tea is often a great relief when the throat is too sore to gargle. Use a mixture of the old-fashioned herbs if you have them—sage, boneset, catnip, hops and hoarhound. Sometimes, when a choking sensation accompanies the sore throat, the quickest way to relieve it is to induce vomiting. I find that the tincture of lobelia given in teaspoonful doses is best for this purpose. It should be kept in every home, more especially where there are children, for it helps so quickly in all cases of croup.

It is not generally known that sore throat is sometimes caused by indigestion. When that is the case, the quickest relief is found by treating the stomach, and to do that speedily you must stop eating and wash out the stomach, at the same time taking care that the bowels are open. To wash out the stomach, drink a pint of hot water, in which you have dissolved half a teaspoonful of baking soda and a pinch of salt; then rock the body back and forth as vigorously as you can, doubling up so as to cramp the stomach and force the water to move about in it. As soon as you can, take another pint of the hot water, prepared in the same way, and then a third pint. In fact, take as much as you can—but not less than three pints. If you bend your body sufficiently you can hear the water gurgling in the stomach. This usually passes off through the bowels, carrying a lot of poison with it. It leaves you feeling hungry enough to eat nails, but you must not eat anything at all after this treatment until the stomach has had time to rest. Wait at least six or eight hours, then take nothing but buttermilk, or rice water with a little cream in it, or toast water prepared in the same way. It won't hurt you to go hungry a little while, and you'll feel so good to have your stomach in order and your throat quite well!

Bad teeth sometimes cause chronic sore throat. When that is the trouble, the best way is to see a dentist as soon as possible, and in the meantime wash out the throat and mouth with a good antiseptic several times a day.—Aunt Keturah.

Simple Methods of Cleaning Walls and Ceilings.

When paper is only soiled from dust, it is an easy matter to renovate it if one gives time to the work; and it takes time to cleanse it with slices of dry bread, or a mass of dough. When the dough is made the right consistency, and is properly applied, it is a labor saver compared with the dry bread process, because there is absolutely no litter. Dough that is fit for the purpose should be entirely free from any stickiness, in fact so stiff that it feels almost like putty. A soft, sticky dough will adhere to the walls and hands most unpleasantly, while a springy mass will glide over the paper and leave the hands almost unsoiled. If the paper is dark or very dirty, some of the grime may first be removed by wiping with soft cheesecloth wrung out of warm water. For this work, select a bright warm day so the paper will dry quickly. Then if the walls are gone over with the dough, the paper will surely be clean. Delicate papers should be cleaned with two different pieces of dough, as the water would fade them. Ceilings can be cleaned with the dough as well as the side walls. If they are papered, cover the broom with cotton batting and tie a piece of damp cheese cloth over this. Rub the ceiling vigorously, and then apply the dough. Some women tie only a cloth on the head of the broom, but this is apt to make ugly streaks on the ceiling; the cotton batting does away with these streaks. A damp cloth must not be used on a kalsomined ceiling, but the dough will also clean this kind, although, as a rule, it is better to have the ceiling rekalsomined than to clean it this way. The dough is said, by an authority on walls, to absorb any germs or microbes that might be lurking in the paper. For grease spots on wall paper there is no better way than to use a piece of brown paper and press with a warm iron; change the paper until the last mark disappears. After cleaning with the dough, the walls should again be wiped with the cheesecloth to remove any particles of dough that may have stuck to the paper.—Vallie De W.

To Renovate Garments.

It is surprising how much can be done with apparently worthless garments when the work of renovating them is undertaken by one who knows how, and appreciates the necessity of taking pains. It is impossible to make a decent looking garment out of old material, or new either, for that matter, unless one does take pains. When about to make an old garment into a new one, the first thing to do is to rip it to pieces, selecting all the promising parts, and brushing them thoroughly. If they can be cleaned without washing them, pin them on an ironing board or table and brush them again, so as to be sure that no dust particles remain. Cover them with a cloth wrung from clear water, and iron them until the cloth is dry. Do not fold the pieces, but lay them on a flat surface when pressed. When the material needs washing, first brush it as thoroughly as if it didn't. Bran water is fine for washing most materials. To prepare this, put bran in a bag and let it boil for an hour; then remove the bag, strain the water and wash the goods in it. Do not use soap. Rinse in clear water and let it become partly dry, then press carefully. Do not wring the goods more than you can possibly help. Press as dry as you can between the palms of your hands, to avoid creasing, then hang the material where it can drain. If soap is necessary, get the best; I prefer white castile and tepid water. To wash black material, nothing is better than soap bark. I use four ounces of the bark in a pailful of water, and let it soak over night. Strain it the next morning, and use in the usual way, but omit soap. I usually keep a strong solution in a bottle, to use in removing spots. I also keep

All the Hard Work Taken Out of Scrubbing

Mop the floor — sprinkle on Old Dutch Cleanser and scrub well. Dirt and spots go flying; for the fine particles of Old Dutch Cleanser get down into the cracks and crevices, that are so hard to get at ordinarily, and take out all the dirt.

Old Dutch Cleanser

Many other uses and full directions on large Sifter-Can 10c.

My Big FREE Book Shows You How to Make Your Fruits and Vegetables Yield Larger Profits

There's no longer any need for selling your rapidly ripening fruits and vegetables on an already overcrowded market at little or no profit, or worse yet, allowing them to go to utter waste and become a complete loss. My *free* book fully explains my plan whereby you can turn the heretofore wasted, perishable fruits into good American dollars by canning them right on the farm with my *portable*

Tarns Waste Into Gold

STAHL Canning Outfit

Good, home-made canned fruits and vegetables are always in demand right in your own locality. You can, just as well as not, turn the annual loss into big profit. Each *Stahl Portable Canning Outfit* is a complete canning factory—varying only in capacity.

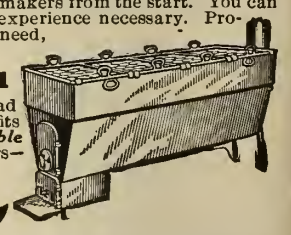
Made in All Sizes from $4.20 Up—Over 100,000 In Use

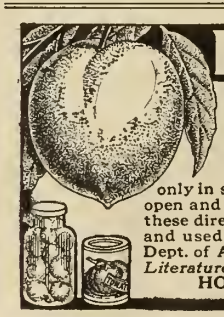
They cost but little in the beginning and are big money-makers from the start. You can can either in glass or tin with absolutely sure results. No experience necessary. Process so simple anyone is sure of success. I supply all you need, including *Valuable Canning Formulas.*

My Big Book FREE to You

Every one who grows fruits and vegetables should read this book and learn how very easy it is to get the full profits from fruits and vegetables with the aid of a *Stahl Portable Canning Outfit.* Book contains pictures of actual users—some in your locality. Write today.

F. S. STAHL, Box 202 Quincy, Ill.





HOME CANNING

MAKE YOUR SURPLUS FRUITS AND VEGETABLES EARN HANDSOME PROFITS

Great demand for goods canned at home. We can furnish you with a complete canning outfit just like those used in the largest canning factories, only in smaller sizes—even Kitchen Outfits. Operated both open and under pressure. Evaporaters and cookers. Order these direct from us and save middleman's profit. Adopted and used by the Girls Tomato Clubs, Members in the U. S. Dept. of Agriculture. *Send us a Card for Free Descriptive Literature and Price List.* Good agents wanted.

HOME CANNER COMPANY, Hickory, N. C.

turpentine, pipe clay and several kinds of cleaning mixtures found in the stores with which to remove spots from garments. One of my favorite cleansing fluids is made of two ounces of white castile, dissolved in one quart of water, to which is added four ounces of alcohol and ammonia, two ounces of ether, one ounce of glycerine and three quarts of rain water. This is kept in bottles with glass or rubber stoppers. It is applied with a sponge; use it liberally, but be careful always to draw the sponge in one direction. Press it when nearly dry, laying a muslin over it. Sponge black silk with weak tea or coffee, laying a thick flannel over it, and press on the right side. If the silk is badly wrinkled, sponge on the wrong side with weak gum arabic water, just before pressing it.—Emily De W.

UNCOMMON RECIPES.

I have a little book, bearing the above title, into which I copy recipes that are new to me—something that I've never cooked, but chanced to eat at the home of some friend. Now I presume many of you have tried

Baked Tomatoes

but I never tasted them until a few months ago, when I chanced to visit a neighbor who has spent some time in Mexico. I liked them and got the recipe. To prepare them, take smooth, sound, ripe tomatoes of uniform size, cut off a small slice at the stem end, and scoop out one-third of the meat. Make a dressing of a little cold meat, chopped fine, and twice the quantity of dry bread crumbs that you have of the meat; season with pepper, salt, a tiny pinch of sage, and two or three drops of Tabasco sauce. Mix, and stuff the tomatoes. Pack them closely in an earthern baking dish and fill in the crevices with the tomato you scooped out, seasoned to taste. You can sprinkle a little sugar over the tomato if you like. Place the dish in a moderate oven, so that it will not bake too fast at the start. It will bake in about three-quarters of an hour.

Another dish, new to me, for which I am indebted to this neighbor, is

Neufchatel Cheese.

Stir a little salt into a pan of "lobbered" milk; pour it into a bag of cheesecloth and let it drain for three days, changing the bag from end to end twice a day. Now pack it in a shallow basin, in which you have punched many holes, and press it over night under a heavy weight.

Sometimes you can buy flat colanders, shaped like a basin, that are excellent for this purpose; but almost any kitchen will furnish a basin so old that even the economical housewife will not hesitate to drive it full of holes. Use a large nail and drive from the inside of the basin so as to have it smooth there, else your cheese will stick. Wet the basin with cold water before putting in the cheese. When it has been pressed, remove it from the basin, wrap it in several folds of tissue paper, put it in a cool place, and you can keep it for a week.

Corn Chowder.

Cut half a pound of salt pork into strips, and put it into a kettle with a quart of water and two sliced onions. Let it boil twenty minutes, then add six small potatoes cut in thick slices, and one quart of sweet corn cut from the cob. Let this boil until the potatoes are done, then add a pint of milk, half a cupful of butter, and salt and pepper to taste. Serve like soup, with crackers. Canned corn may be used, if wished.

Cheese Pudding.

Mix together one-half pound of grated cheese, four well-beaten eggs, half a pint of rich milk, and a pinch of salt. Bake in a buttered dish the length of time required for the same amount of custard.

Chokecherry Jelly Cake.

The cake is made from any good recipe for rolled jelly cake. The uncommon part of this recipe is found in the filling, which is choke-cherry jelly; for many women do not know that choke-cherries can be made into jelly. I am a living witness to the fact that they can be, and that the jelly is perfectly delicious, has a lovely color, and that there isn't the least bit of "choke" about it. Gather the cherries as soon as they turn black and before they are fully ripe, strip them from the stem and let them cook slowly for about two hours in water enough to almost cover them. Press the cherries with a spoon as they simmer, for cooking seems to harden them, then strain the juice through a cloth, add an equal measure of granulated sugar, and let them boil, testing as for any other jelly to determine when the juice has reached the proper consistency.—S. J. S.

Hard Time Stories.

Here they are, at last! Interesting, helpful, inspiring! There is no one who may not be helped by reading them. While they tell of the hardest of hard times, you will notice that in nearly every instance there is the recognized fact that the hard times brought compensations that could not be forgotten; and in most cases there is a note of victory, for the hard work resulted in a pleasant home and material comforts for the later years.

It is natural for us to long for a life of ease—but no one really believes that such a life tends to the development of the sturdiest character. We know that the children of those who have struggled and conquered are the ones who fill the most important positions in later life. They have the elements of success that are seldom found in the child of rich parents. They can go out into the world and carve a place for themselves without help from anyone. The rich man's son must be bolstered up by wealth and influence—and even then he fails more often than he succeeds. Now, one of the great reasons why we are here is that we may reproduce our kind. The question is, what sort of children are we sending out into the world to represent us? When we look at it in that light, we can see that we are really to be envied in that we have brought up children who are not afraid to go out, empty handed, to make a home for themselves and to rear a family which, in its turn, will tell more than anything else possibly could of the kind of citizen we were.

You may not agree with us in our award of prizes. We can't expect that, for the fact is we had a hard time agreeing among ourselves! I think, when you have read all the letters, you will wonder that we reached any decision at all. After all, the prizes are not of great importance when compared with the help you have given in telling our young people of your experience. We have got to work hard to prevent them from growing up with the idea that it is their right to begin where their parents are leaving off—or a little ahead of that! We have got to ask ourselves, seriously, if we are being honest with the future generations, when we do all we can to deprive our young people of the lessons they can get only by fighting the world for their place in it—just as we have done.

Six prizes have been awarded for these "hard time" stories, the prizes going to the authors of the six articles leading the series. We shall not publish the names of the prize winners, for fear there might be objection on the part of someone. And yet why should not all of the letter writers be proud of their achievements? Other letters will be published next month.

RUTH MOTHERBY.

We were married, two happy, irresponsible young persons, in the summer of 189—. The following election precipitated a serious panic, the following summer a serious drouth, a scourage of hog cholera visited the corn belt, and the fall after that brought "Little Boy." We called him "Maxy," being short for "Climax." Of how we met the extra expense of "Little Boy" and kept up the interest on the big mortgage on our little home, with another year of low prices, short crops and stock loss, I find I have only a vague recollection. It must have been very trying, for we gladly accepted an offer to exchange our farm, which was near a large city, for land at half price fifty miles away, in a

newer part of the country. I am afraid you will not understand what this meant to us. We were each one of a large family, and had many relatives and friends all about us, in a prosperous, up-to-date farming country, adjoining the capital city. We could not afford to travel even that short distance either soon or often. Our new home was eighty acres of raw prairie land, without even a tree on it. We moved to this place in January, living in an old abandoned house while building our own "two rooms and attic." We went out to that wind-swept prairie, and in the bitterness of an 18-degrees-below-zero winter morning, amidst the corn stalks and the snowdrifts, located our buildings, garden and wind-break. In below zero weather our barn and house were built, with ship-lap and paper; in two weeks we were living in that house, hearty, happy and full of courage. I wish I could tell you of all the economies which made it possible that first year for $87.50 to cover our living expenses. My books were burned, but I well remember the amount. During the next few years I made over clothes, made my own hats, carpets, curtains, bed clothes, besides raising chickens and taking care of a garden and shucking corn. I want to say, too, that shucking corn in the field is about the most healthful exercise that I ever had. We took our first trip home in two years; it was a Sunday excursion, and we only learned of it late Saturday night. The round trip tickets were $1, and we walked three miles out from the station and stayed all day. If we attend the Panama Exposition, it will not be so exciting a trip. I also remember another red letter day, when I bought a new shirt waist—the blue pique, three yards at 20 cents a yard, a white collar at 10 cents and a ribbon tie at 10 cents. In ten years' time, when we left this place, it, with the stock, was worth $10,000, and we had bought more land —so it paid financially; and I believe that, for every enjoyment lost, there was a compensating gain of some kind. There is a poise and assurance that come from the knowledge gained through these experiences that is invaluable. Of course I know some women laughed at my made-overs; indeed, I laughed at them myself. I have always believed that they respected me for having a courage that they lacked, and for which fine clothes are a cheap substitute. I know they offered me their friendship, and I did not always accept it. I believe now, in looking back over our efforts, that we were successful because we always felt that we just had to be, and because in the sacrifices we made there was no shame or deception. We realized, as I wish all who read this might realize, that the importance of a home, all your own, justifies almost any honorable sacrifice.—"Iowa."

The writer was born in obscurity in a one-room log cabin in Fayette County, Ill., in the year 1858; my mother died when I was only two weeks old, and I was taken by an aunt, who had a child of her own, just a few days my senior. At the age of one year I was taken home and cared for by my father and older sister; my chief diet was buttermilk and corn bread, with an occasional meal of mush in winter, or fruit and vegetables in summer. My father died in a soldiers' hospital when I was only three years old, so that I have no recollection of either of my parents. They being very poor, left us no likeness of themselves, and I have often wished that they could have lived until I was old enough to know how they looked. I never wore a pair of shoes or a hat until I was five years old. I remember as if it were yesterday, walking two miles barefooted to have my measure taken for my first pair of shoes. How grand I felt when the shoemaker measured my feet, and, putting the figures down on a slate, told my step-mother that he would have them done in three weeks! It was the longest three weeks in my whole life; seemed more like three months to me. Finally the day came, and we went to get the shoes. They were a good fit, and needless to say I was happy. The following winter I got my first hat, an old half-worn-out one discarded by my step-father (my step-mother having married again). The hat was two sizes too large but I was very proud of it, nevertheless. I never tasted candy until I was ten years old; my Christmas presents consisted of a bunch of firecrackers and a few fried doughnuts, made to represent a dog or cow. I was sixteen before I ever had a suit of store clothes; I worked out and earned the money to buy them; never wore an overcoat or overshoes until I was twenty. At the age of seventeen I began to work out, and took care of myself. Being in poor health I was able to save but little during the next three years. But after paying doctors' bills, board, etc., at the age of twenty-two I had saved enough to buy a horse, and, thinking like many others, that I needed some one to share my fortune, I ventured upon the sea of matrimony, not knowing where I should land, but having the will and determination to succeed, if hard work and economy would do it. I began farming in the season of 1882, and it was a very dry season. I did not raise enough to feed a goose, but rented another farm, bought seed wheat at $1.35 a bushel. I gave my note for the amount with interest, put out twenty acres of wheat, made rails for 50 cents a hundred and boarded myself. I hauled wood for four miles at $1 a cord to buy our clothes and provisions, paid 90 cents a bushel for corn to feed my team, and correspondingly high for hay, until I raised a crop. We began housekeeping on $15, and $5 of that went for our first stock of provisions. Our household goods consisted of a second-hand cooking stove, a wood bedstead and bedding, which were also second-hand. We used the wash tub for a table for a while. We raised thirteen children. The youngest is now seven years old. We worked many a day with naught to eat but bread and milk, being too poor to pay 20 and 25 cents a pound for bacon. I have been crippled four times in the thirty years, once by a kick from a mule, next time by a runaway horse, and once by an automobile accident. I was compelled to go on crutches from three months to one year each time. I had a $500 loss by fire; was entitled to a soldier's minor pension, but the claim was rejected. I have had no help from anyone. I now own a well improved 160-acre farm, owe no one anything but love. (I will take that back, though, for I owe much of my success to reading The Fruit-Grower.) I can boast of the best orchard, as well as one of the largest in this county. I exhibited thirty-one varieties of fruit at the "Farmers' Institute," and received first prize for the greatest variety of apples.—D. D. Scott.

After twenty-one years of constant effort, we have a home of our own; a nice farm of 120 acres, well stocked, twenty-five acres bearing apple trees, a small canning factory and a new house in prospect. We have six bright children, all doing well in college and school. Our story has surely been one of hard times and happiness; we worked hard and enjoyed the struggle, which we never gave up for a minute. With just enough to begin farming on, George and I started life together. Everything went well for the first six months, then George got his hand hurt, and a hail storm took our crop. The next year the crop was good, but when our baby boy was six months old, George had a severe attack of inflammatory rheumatism. I had a hard time taking care of the new boy, the sick man and all the stock; we lost forty pigs. There was a drouth that year, and, as the rheumatism still troubled my husband, we took the doctor's advice and went south, driving through in a wagon. We barely made our living while in Arkansas, but six weeks there cured the rheumatism, and then we started for Oklahoma. We found a town just starting, and work was plentiful, so we stopped there, setting the wagon box off for a bed room, and using a little tent for a kitchen. I fixed the place up cozily, and we went to work with all our might to get a home. George worked every day and I sewed and baked bread for the other campers. I made most of our living expenses, while George's wages we saved for the purpose of building a house on the lot we had bought. After three months of hard work the two promoters disappeared, and we never got a cent of wages. Our lots were worthless, besides. We rented a farm and moved to it, six weeks before our daughter came. We lived mostly on corn bread and rabbits that winter, and our next crop was taken by the chinch bugs; then we began to shake with the ague. That was a hard winter, and on account of the chills and fever George could not work steadily; he had to mortgage the mules to get groceries and quinine. We raised about half a crop the next season, and then sold out, starting back to Nebraska as homesick as could be. Our boy had malarial fever on the way, but after a few weeks at grandma's house we all got well and moved to a house in town for the winter. There our boy had pneumonia and another daughter was born. We rented a farm and built a house out of an old granary. We raised a fair crop that year, but the drouth and chinch bugs got the next. After that we lost two crops from hail storms. The year following this we raised half a crop, and then the hail destroyed our harvest again, while a cyclone took away part of the house. The year after that we had such a good crop that we both overworked and were sick nearly all winter. George had to go south again that spring for his health and I moved to a better farm. For the next two years our crops were good, but my husband's health was so very poor that we finally sold out and moved to Arkansas, where we bought a farm, the first we had ever owned. In our experience there has been much sick-

You Need This Knife

The Wonder Knife can be used to advantage by every farmer, fruit grower and stockman. Every knife is guaranteed. This is the handiest and best knife ever manufactured.

The illustration shows slightly reduced size of the knife. Besides the large blade, which is two and three-fourths inches long, this knife has a smaller punch or reamer blade two and one-eighth inches long, and cuts holes exactly as shown in illustration. Both blades are of finest tempered tool steel, finely ground and polished. You have paid $1.00 or $1.50 for a knife not as good as this one.

The Wonder Knife is built for practical use, not filled with Nic-Nacs, as is the case with most combination knives. Especial care is taken to make the knife sufficiently strong for use of farmers, fruit growers and stockmen. It is no more clumsy or awkard to carry in the pocket than an ordinary three-bladed knife.

With this knife you can make a round hole of any size in the thickest leather more easily and more quickly than with a belt punch.

The Leather Punch will be found indispensable for making various sized holes in leather for buckles, rivets, belt lacing, etc. The Leather Punch acts as a swedging awl or marlin spike when turned to the left; especially adapted for use in lacing belts, untying knots, etc. This knife is a marvel of mechanical ingenuity, embodying every essential element, viz., Simplicity, Convenience, Durability, Smoothness and Strength.

How to Get the Wonder Knife

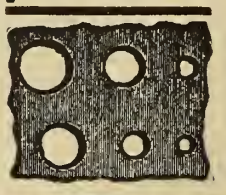
Send $2.00 for two yearly subscriptions to The Fruit-Grower, either two new subscribers or your own renewal and one new subscriber, and we will send this knife by return mail, prepaid, free of charge.

Send remittance of $1.25 and we will enter your name for a year's subscription to The Fruit-Grower and send the knife prepaid without further charge.

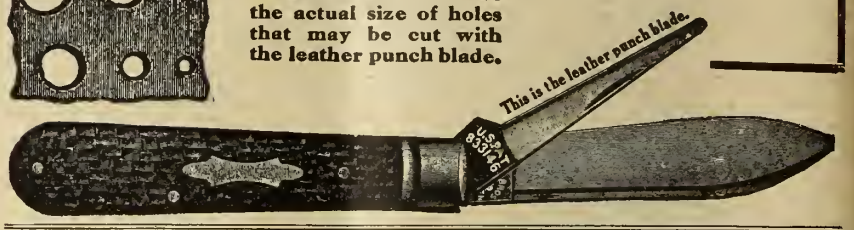
If you want the knife only, send remittance of 50c, and the knife will be mailed to you postpaid.

When you write, address, "Knife Premium Department,"

The Fruit-Grower, Saint Joseph, Mo.



This illustration shows the actual size of holes that may be cut with the leather punch blade.



The All Fruit Club

Many readers are interested in securing data from every possible source, in regard to fruit growing. We quote herewith a special proposition covering five leading publications devoted especially to fruit, and we offer a bargain price.

A $4.00 VALUE FOR $2.50

	REGULAR PRICE
Green's Fruit Grower, Rochester, N. Y., 4 years	$1.00
The Western Fruit-Grower, St. Joseph, Mo., 1 year	1.00
Better Fruit, Hood River, Ore., 1 year	1.00
Southern Fruit Grower, Chattanooga, Tenn., 1 year	.50
Fruitman and Gardener, Mt. Vernon, Iowa, 1 year	.50
	$4.00

SEND $2.50—GET ALL FIVE PAPERS

THE FRUIT-GROWER, Saint Joseph, Missouri

If you only knew what splendid music the

Victor

brings into your home, you wouldn't be without one for a single day.

There is a Victor dealer right in your neighborhood who will gladly play your favorite music. Write us today for his name and address and we'll also send you complete catalogs of the Victor ($10 to $100) and the Victor-Victrola ($15 to $200). Easy terms can be arranged with the dealer if desired.

Victor Talking Machine Co.
23rd and Cooper Sts.
Camden, N. J.

Berliner Gramophone Co., Montreal
Canadian Distributors

Always use Victor Records played with Victor Needles—there is no other way to get the unequaled Victor tone.

Make Your Own Gas

The Detroit Combination Gas Machine provides the Home with a **Satisfactory Gas Supply.**

Gas to Light with.
Gas to Cook with.
Gas to Heat Water for the bath, laundry and other uses common to city coal gas, at no greater cost.

On the market over forty years. More than 15,000 in daily use. Our catalog will interest you. Write today for copy, and names of users in your vicinity.

DETROIT HEATING & LIGHTING CO.
472 Wight Street, Detroit, Mich.

ness, struggling with new conditions, losses by drouth, a cancer and a fire in the first two years. But after all these came a monstrous crop, and the last one the most profitable of all.—"George's Wife."

Married in Vernon County, Missouri, January, 1902, began housekeeping, borrowed the first month's rent. Worked hard to buy a cow, and lost her with the lump jaw. Started farming with a man on shares, had trouble with him and was beaten out of our part of the crop. The second year I rented a farm and the rains drowned everything out; only raised $19 worth of crop and had to sell everything to pay the grocery bill. Third year was discouraged, and started to Western Oklahoma in a wagon with a blind team of horses. But I got through, and filed a claim, having only $2.50 in money. I dug a hole in the ground for our home and covered it over with boards, using the $2.50 for lumber. I mortgaged a team of horses to buy ten bushels of corn, and got the best horse's foot cut off on the way home; raised no crop. Fourth year I began to work out at 50 cents a day, to keep starvation away. Planted a small field of Kaffir corn, but being fifty miles from the railroad station, I had to burn it for fuel. Fifth year I worked out and bought a small pony, then started to farm again; planted ten acres of corn. On June 29th it was completely destroyed by hail; my cotton that year was eaten up by web worm. Sixth year I worked twenty days for a sow to get started in the hog business, and the lightning struck her before I got the pen built. Sand storms in the spring cut off and buried all our crop; later on our garden and truck patches were destroyed by a small cloudburst. Seventh year I proved up on claim and mortgaged for $400. I bought a nice team of mules, planted seventy acres in crop and all looked well until July 1, when three days of hot wind entirely destroyed all crops. One month later the best mule died, and I sold the other to pay store debts. I traded the 160 acres off for 40 acres in McDonald County, Mo. Eighth year I got back to Missouri with nothing but bedding and clothes to start in with. Gave one-third of the crop for the use of one horse; raised only $75 worth as our part. Our groceries and furniture bills for the year were $200, leaving a balance of $125 still due. Ninth year I bought a horse on credit and started out to make a fortune. Had nine acres of strawberries, prospect was fine; drouth struck them just as they were beginning to ripen. We only realized $50 from the entire lot. Since that time my barn has burned, with all my hay and implements. I have my old horse left, and am thinking some of trying to farm again next year. Wife and I are still living together. We have two girls, both well along in schooling. We have a nice home now and, although our parents on both sides are living, we have never asked, nor received, help from anyone in any way.—Josh Brown.

The gray hairs have been creeping in, here and there, for some time, but I like to think that the years and the experiences through which they have brought us have been stepping stones to higher things; and that each one has made more clear the real good in life. When we married our capital was small indeed. We started in by renting a small farm of six acres, and my husband taught a country school nearby. We invested a few dollars in poultry, and it would take a column to tell all that we learned about this business. The rats proved to be our worst enemies. After a few months we found that it was taking all we could earn to keep things going, and we were not getting ahead at all, so we began to look for something else. We found a small place of four and a half acres, with a small barn and a hole in the ground, where a house had been but was burned. For this we paid $160 in cash. The land was mostly clay, but there was about $150 worth of lumber, which had been ready to build another house. We assumed a mortgage of $150, gave a note for $75, payable in one year, and went to work. Husband was handy with tools, so he immediately commenced to build a house; he did all the work from cellar to chimney. As soon as the main part of it was up, we moved in to avoid paying more rent. It wasn't play, for we got down on our hands and knees, so to speak. When the walls were ready for the laths, I took hold and did as much as some men would have done. Little by little we made that house. Husband worked the land and worked out by the day at carpenter work, when he could get it, and at anything else when he couldn't get that. Our expenses were all met and interest paid when due. We built a barn, a hen house and added to the house a little at a time, putting in a furnace, an overhead tank, a cistern and whatever was needed to make things comfortable. We gave up social life, good clothes and luxuries to a great extent, and in six years had a place valued at $1,000. We did not get entirely out of debt, but, when the opportunity came to us to buy a lot near town, we borrowed the money from a friend, giving him a note due in one year. At the end of that time we had the money ready and owned the lot. On this lot was a cellar, and we erected a storeroom, or small barn. A chance to rent the small place for $75 a year, and straightway we moved into the storeroom, renting the farm. It would take too long to go into all the details, but we proved this one thing, i. e. that one must improve his opportunities, even though he is inconvenienced at the time. We were very successful in the poultry business, and know that it pays as a side line almost anywhere. Sometimes it is advisable to go into debt, but one must watch the leaks and keep up the payments. We must also be ready for emergencies, such as sickness and accident, and we must have our business in such shape at all times that we know just where we stand. Rough times? Yes, we have had them in plenty, but I think we are better off than the young people who have money given or left them, and do not learn the value of it until they have lost it altogether. We have learned to grow as we go.—"Aunt Flora."

Thirty years ago my husband bought, on time, eighty acres of timber land, cleared a spot, and built a two-room box house. This took all of our money, but we had a sweet baby boy to cheer us on our way. Our furniture consisted of one bedstead, four chairs, a large box covered with paper and a mirror hung over it served as a dresser. A clothes chest, a flour chest, small table, dining table and a safe were made by my husband's own hands, and I prize them more than anything that money could buy. We had two horses, one cow, a few chickens and two sows; an old wagon, two ploughs, a harrow and an axe. While husband was clearing, I took my little one, well wrapped up, for it was winter, and putting him in a box, took him to the clearing. I piled brush and helped cut timber. In the spring I raised chickens, helped with the garden and the corn. I also helped in the wheat and hay harvests, and I have carded both wool and cotton, spinning the thread to make our clothes. When baby was three years old another son came to bless us, and I wondered how I could help with the crops, and we had no money to hire help. I took my little ones to the field, put baby on a quilt, tying a stout piece of cloth around his waist, and the other end to the fence. I gave the oldest some food, then with a kiss to my little ones, and a prayer to God for their safety, I hoed corn and cut sprouts until time to see them again. Home I went to cook dinner, then back to the field till the corn was clear. We rented good wheat ground until our own was ready, and sold wheat; we also sold a drove of hogs, both spring and fall. We bought young calves and fattened them for sale. My husband worked at a saw mill, also at carpenter's jobs when he could get the work, and every dollar we could spare we paid on our land. We had no fine clothes, but I loved to go to church. One calico dress was all I had, but I said "God's house is for the poor as well as the rich," so I washed and ironed my cheap dress and wore it to church every Sunday, until I could afford a better one. In a few years a third son was born to us, and we were very happy. I did not have to help in the field then. Yes, we worked hard, but I can look back on the hard struggle we had as the happiest time of our lives. We now have one of the most beautiful homes in Illinois, and three fine sons to make us proud. Young men, it sounds strange to hear you say you cannot save money to be married on. Take my advice and do not spend money on treats and joy rides, while you wear fine clothes not paid for. Do not wait for the dear old father to die, but make a good name for yourself while you are young.—Ellen Savage.

(To Be Continued.)

CANS

HOLE AND CAP FOR CANNERS
"STAR" WAX TOP
FOR HOME CANNING

The two styles mentioned above are the best cans for the purpose noted.

Inquiries will have our prompt attention.

AMERICAN CAN COMPANY

NEW ORLEANS CINCINNATI ATLANTA, GA. ST. LOUIS DALLAS, TEX. BALTIMORE KANSAS CITY

SAVES WORK FOR FARMERS' WIVES

THE "Easy" Vacuum Cleaner will do more to save work for housewives than any other machine made. It will remove all dust from your carpet, and as all dust particles are kept in the machine, no dusting follows the use of the machine. The "Easy" Vacuum Cleaner cleans equally well furniture, bedding, curtains, clothing, and will remove all dust from walls, ceilings and hardwood floors.

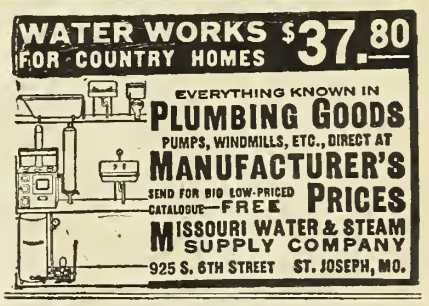
Our illustration shows how easily the dust is removed from the "Easy" Cleaner—it is simplicity itself. Sweep your carpet as well as you can, and then use the "Easy" Vacuum Cleaner, and you will realize what a great thing it is.

No more beating of carpets.
No more sweeping.
No more dusting.
No more dread of house cleaning; for your house is always clean.

All these benefits come to the housewife who uses an "Easy" Cleaner. Made in three models, selling for $25, $20 and $15.

An "Easy" Vacuum Cleaner will pay for itself in three months in actual time saved, besides relieving women from the never-ending, back-breaking job of sweeping and dusting. Send for full information regarding this great machine, which is emancipating hundreds of women from the drudgery of keeping a home clean.

DODGE & ZUILL, F. G. 6, SYRACUSE, N. Y.



Fruit-Grower Leads All Others.

John F. Moore, lately manager of the Grand Junction (Colo.) Fruit Growers' Association, writes as follows: "There is no question that The Fruit-Grower comes nearer representing the interests of fruit growers than any other paper in this country, and it is entitled to the support of every grower. It will be a pleasure to me to recommend it at every possible opportunity."

Here's a testimonial from a grower, M. J. Dietrich, Arcadia, Mich., which bears out Mr. Moore's statement: "I have no comment to make regarding The Fruit-Grower except this: When once you get a person on your mailing list you will have a life-time subscriber, if he appreciates an up-to-date fruit paper."

Fruit-Grower Is the Best Paper Published.

The Fruit-Grower is the best publication on general fruit culture that has ever come to my notice. Our women folks were intensely interested in the poultry articles and illustrations. One of the best features of The Fruit-Grower is the volume of clean advertising carried. No matter where one lives, needed articles can be supplied near home. F. P. WYLIE.

Jordan, Iowa.

Some people are always talking about the possible over-production of apples. Those same people are always the ones who produce wormy, scabby, badly graded apples. A power sprayer and grading ring will quickly teach them where the over-production bugaboo lives.

Our Classified Advertising Department

For advertisements in this department, of not less than twenty words each, in which no display type is used, we make a special rate of FIVE CENTS PER WORD, EACH INSERTION. If several different advertisements are inserted in the same issue, the charge will be $1.00 for each ad, no matter how small. The first four words of each ad will be set in black type. Every initial and number to count as one word. This department is for the benefit of our subscribers who have anything to sell, including farm lands, fruit farms, dogs, ponies, poultry and eggs, live stock, plants, shrubs, vines, etc. All advertisements for this department must be PAID FOR IN ADVANCE.

Count the number of words you send, and remit at rate of 5 cents per word, stamps, currency or money order. This is considerably less than our display rate, and offers a splendid opportunity to reach our readers at a low figure. Send a trial advertisement with remittance at rate of 5c a word. THE FRUIT-GROWER, St. Joseph, Mo.

POULTRY DEPARTMENT

Anconas

Anconas. American Beauty Strain. Biggest money makers. Real hustlers. World's best layers. Will produce four eggs on same feed Orpingtons require for one. Outweigh Plymouth at 10 weeks. I win at all shows. Send for catalog. C. A. Niebur, Dept. 2, Lindsay, Neb.

Anconas—Both Combs. Large dark birds, evenly mottled, black tails and wings, winners Buffalo, Rochester, Cleveland, Williamsport, Madison Square. World's best. Eggs a specialty. W. A. Ellison, Elkland, Pa.

Anconas—Stock, eggs. Three pens. Show, trapnested egg strain and utility. Reasonable prices on application. Honest complaints made right. M. E. Wells Brewster, Ohio.

Prize Winning Mottled Anconas. Famous winter layers. Eggs, $1.50 to $3.00. Baby chicks $2.50 per dozen up. Write for Circular. W. H. Hardman, Frankfort, Kansas.

Anconas exclusively. Eggs from exhibition matings, $2.00 and $3.00 per 15. Thoroughbred utility matings, $1.00 per 15. Fred Crosby, 3251 Gillum Road, Kansas City, Mo.

Rose's Anconas and Indian Runners. Prize winners and great layers. Eggs, $1.00, $2.00, $3.00 per 15. Write for circular. Mrs. Daisy Rose, Bois D'Arc, Mo.

Ferncliff Farm Anconas are the kind you like. Bred to show and lay. Quality and prices will suit you. Circular free. C. Krichbaum, Youngstown, Ohio.

Get Anconas, the greatest layers known today. Stop last, begin first; lay when others rest. Pure, dark, grand birds, the best. L. Evitts, Falls, Pa.

Bantams

Bantams, Eggs, 34 varieties, Sebrights, Cochins, Games, Polish, Rose Combs, Brahmas, Japanese. Send 2c stamp for circular. A. A. Fenn, Box 10, Delavan, Wisconsin.

Partridge Cochin Bantams with and without score cards. Stock and eggs. Also eggs from fine Single Comb Brown Leghorns. L. Beechler, Springfield, Ill.

Brahmas

Light Brahmas exclusively; high grade, vigorous, good layers, good lookers, good prize winners. Stock and Eggs for sale. Harold E. Davis, Sleepy Eye, Minn.

Buff Brahmas and Light Brahmas. Eggs for hatching $2 a setting. If you want fine winter layers try mine. C. C. Arnold, Millers Falls, Mass.

Light Brahmas, scored to 95½; never been defeated in show room, Felch strain; best layers; $1.50 per 15. J. H. Willis, Jeweler, Norris City, Ill.

Cow Cow de Malines

Drop a postal and Art will tell you about his White and Gray Cow Cow de Malines, Gold and Silver Campines, Rose Comb Reds. Art W. Verbeckmoes, Atkinson, Ills.

Dorkings

Silver Gray Dorkings. Try these grand English fowls for excellence and profit. Hens at $1.25; eggs at $2.00 per setting. D. W. Seibert, Somerset, Pa.

Hamburgs

Silver Spangled Hamburgs, Black Orpingtons scoring to 95½, winners of silver cups and blue ribbons at Blue Island, Chicago, Missouri State, Kansas City. Eggs, $1.50 to $3.00 per 15. D. Van Rennen, 6440 So. May St., Chicago, Ill. Square Deal.

Silver Spangled Hamburgs, real good ones, spangled all over, winners at 18 shows and fairs, guaranteed eggs $2.00 for 15; $3.50, 30. Descriptive circular free. Charley Laughlin, Bloomfield, Ind.

Silver Spangled Hamburgs, bred from egg record and prize winning stock from $1.50 up. Eggs, 15 for $1.00, 50 for $2.50; 100 for $4.50. Henry Bartig, Augusta, Wisconsin.

Houdans

Famous Houdans. Eggs and day-old chicks from our fine large farm raised Houdans. Eggs, $2.00. Catalog with photograph for stamp. Prospect Poultry Farm, Orleans, Ind.

Eggs for sale from pure bred Houdans, $1.50 setting of 15; my birds won first and second at the county fair. Mrs. Clarence J. Bettis, Route 7, Forestville, N.Y.

Langshane—Black and White

Black Langshans; eggs, $1.00 setting; $5.00, 100. Rose Comb Brown Leghorns and Single Comb White Leghorns; eggs, $4.00, 100. Satisfaction guaranteed. Golden Gate Farm, Lafayette, Indiana.

White Langshan, Buff Rocks—Fine color. Eggs, 15 $1.25. M. B. Turkeys, Hadley strain winners, 55-lb. sire eggs. Mrs. Lizzie Mumpower, Chillicothe, Mo.

Black Langshans. Choice stock for sale from prize winners. Eggs booked for delivery from now on. Mrs. W. S. Wood, Route 1, Hunnewell, Mo.

Happy Hollow Black Langshans are as good as grow. They have won more prizes than any flock in Illinois, same number of entries. Eggs, $3.00 for 15. Chas White, Prop., Hillsboro, Ill.

High quality Black Langshans, S. C. Rhode Island Reds and Light Bramhas. Prize winners and good winter layers. Eggs $1.00 and $2.00 per 15. Brock Bros., Mill Shoals, Ill.

Black Langshans. Winners American Royal, Missouri State shows. Farm raised, healthy, vigorous, big layers. Show stock, utility prices. C. M. Stackhouse, Box 567, Parkville, Mo.

Leghorns

Single Comb White, Brown, Buff and Black Leghorn, hatching eggs and baby chicks. Good farm raised stock. Moderate prices. Paul Bechtner, Route 5, Waukesha, Wis.

Leghorns—Brown

Single Comb Brown Leghorns. Phenomenal layers and prize winners, in any size show, regardless of competition. This season they have won high honors at Hagerstown, Maryland, Roanoke, Front Royal and Lynchburg, Va., Charlotte, North Carolina, and Atlanta, Georgia. Eggs only $2 per 15. Mating list mailed upon application. H. C. Adams, Lynchburg, Va.

Rose Comb Brown Leghorns. First prizes at Illinois and Missouri state shows, Indianapolis, etc. Heavy laying strain, best chickens for farmers. Eat least, lay most. Eggs from flock, $5.00 per hundred. Pens, $5.00 per 15. Oscar Wells, Farina, Ill.

Brown Leghorn Eggs, $3.00 per 15. Winners at Chicago, St. Louis, Cleveland, Cincinnati, Indianapolis. Over 400 premiums. Free circular on show record and matings. 25 cockerels at $1.00 each. E. E. Carter, Knoxville, Tenn.

Eggs that will hatch from pure bred farm raised Single Comb Brown Leghorns. Great layers. $1.00 per 15; $4.00 per 100. Day old chicks, 25 for $4.00. Satisfaction guaranteed. Wm. Ellerman, Rt. 1, Versailles, Indiana.

Rose Comb Brown Leghorns from Boston and Madison Square Garden Winners. Eggs $1.00 per 15. Mammoth Pekin Ducks $1.00 per 11. Claudia Betts, Hillsdale, Mich.

Rose Comb Brown Leghorns, hardy Northern birds, good layers; eggs, 20, $1.00; 100, $3.50. Shipped the same day laid. Mrs. Chas. Brown, Cavalier, N. D.

S. C. Brown Leghorns. 4 pens mated. Booking orders now for eggs. Bright's strain, finest in the world. Granite State Poultry Yards, Nashua, N. H.

Single-Comb Brown Leghorns. Champions of the entire West. Over 300 prizes won in 22 years. Circular free C. F. Lang, LaCrosse, Wis. Box F.

R. C. Brown Leghorns of quality. Show birds for big shows. Bred for yeara to lay. Circular free. W. C. Pifer & Son, Keyser, W. Va.

Leghorns—Buff

S. C. Buff Leghorns, Gold Dust strain. I am waiting for your order and will fill it promptly. A few good ones for sale. Eggs from 4 best pens, $2.00 per 15. Write for list and mention Fruit-Grower. J. C. Eisenmsn, Greensburg, Ind.

For Sale—S. C. Buff Leghorns. Some fine show birds. A lot of magnificent cockerels and pullets, all prices. My old birds are select matings from the best breeders in America. Mrs. Anna H. Baldwin, Keswick, Ia.

The Sunshine Flock S. C. Buff Leghorns. Gold on your farm; gold in your pocket. Pen 1, $3.00 per setting of 15; Pen 2, $2.00; Pen 3, $1.00. Range, $5.00 per 100. Mrs. Anna H. Baldwin, Keswick, Iowa.

Hart's Single Comb Buff Leghorns are layers, winners and payers. You can get along without this strain but you can get along better with it. Mating list free. W. D. Hart, Ashland, Mo.

Pure Bred Single Comb Buff Leghorns, winners at two state shows. Bred to lay. Beautiful Golden Buff. Eggs, $1.00 for 15; $5.00, 100. E. L. Aldrich, Keokuk, Iowa.

Rose Comb Buff Leghorns, perpetual layers. Buff Orpingtons, winter egg machines, 15 guaranteed eggs, $1.50. Goldenrod Poultry Farm, Mesa, Colo.

Single Comb Buff Leghorns, the laying kind. Eggs from prize winners. $2.50 and $3.00 per 15. Joseph E. Mattison, Box 377, Paducah, Ky.

15 Eggs, $1.50, from 6 choice pens of Single Comb Buff Leghorns and Rhode Island Reds. Also stock for sale. G. C. Mahle, Washington, Ill.

Merlhews Buff Leghorns. Won five regular and special prizes at the last Madison Square Garden show. Write for mating list. L. E. Merlhew, Marathon, N. Y.

S. C. Buff Leghorn eggs, $1.50 per 15; bred for unusual egg production, exclusively, and they deliver the goods. Edwin M. Larason, Newark, Ohio.

Single Comb Buff Leghorns exclusively. 14 years. Select matings, 15 eggs, $1.50. Utility stock, 15, $1.00, $3.00, 100. Mrs. Frank Carnahan, Route 3, Adrian, Michigan.

Single Comb Buff Leghorns. Cockereis, $1.50. Pen eggs, 15, $2.00. Range, 15, $1.00; 100, $5.00. Baby chicks, 12½ cents each. Mrs. John H. Wood, Solomon, Kansas.

Choice Single-Comb Buff Leghorns, $1.25 each, $3.25 per trio. Indian Runner drakes, $1.25. Eggs in season, from prize winners. Hillcrest Farm, Blackwater, Mo.

Single Comb Buff Leghorn Eggs that hatch winners, $1.00, 15; $4.00, 100. Partly grown baby cbicks a specialty. Mrs. L. Boldig, Tigerton, Wis.

Leghorns—White

Single Comb White Leghorns of Quality. Prolific layers. Large snow white. Free range. Best equipped poultry ranch in Southern Indiana. Stock and eggs for sale. Eggs, $5.00 per hundred. Satisfaction guaranteed. Write, The Maples, Dr. J. D. Horton's Poultry Farm, Paoli, Ind.

Hoyle's Single Comb White Leghorns. Prize winning egg machines. Prices reasonable. Eggs and baby cbicks. Special rates in quantities. White egg strain. Fawn and White Indian Runner duck eggs. The Hoyle Poultry Farm, Whittier, Iowa.

Rose Comb White Leghorns, bred from winuers at Chicago, St. Louis, Minneapolis, Oshkosh and Fond du Lac. Eggs, $1.50; $1.00 per 15; $5.00 per 100. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

Standard Bred S. C. White Leghorns. (D. W. Young's etrain); not one drop of any other blood. Eggs and stock for sale. Mating list free. Now ready. S. F. Shallcross, Box 80, Odessa, Dela.

S. C. White Leghorns exclusively, raised on open range. Strictly healthy eggs for hatching, $1.00 per 15; $5.00 per 100. From prize winning stock. Walnut Grove Poultry Farm, Gallatin, Mo.

Single Comb White Leghorns, Young and Wyckoff strains. Stock for sale. Eggs $1.50 per 15, $2.50 per 30, $7 per 100. Baby chicks $15 per 100. K. I. Miller, Box 53, Lancaster, Mo.

Sunflower Poultry Farm. Single Comb White Leghorns exclusively. Best mating, $3.00 and $5.00 per 15; utility, $1.00 and $5.00 per hundred. Arthur L. Knapp, Branford, Conn.

Brookside famous winter laying strain of Single Comb White Leghorns, the kind that lay and pay. Eggs for hatching a specialty. Catalog free. Brookside Poultry Farm, Bachmanville, Pa.

Bliem's Single Comb White Leghorns. World's famous exhibition and laying strain; stock; eggs; 16 years experience. Circular free. Samuel S. Bliem, R. R. 5, Pottstown, Pa.

S. C. White Leghorns. Breeder of "Bred to Lay," a strain of unsurpassed winter layers. 15 eggs, $1.00; 100 eggs, $5.00. No order too large. R. S. Ketcham, Box 20, Boonville, Ind.

Snow White Leghorns, Single Comb, Young's strain. None better. Eggs and cockerels scored by Heimlich for sale. Circular free. John J. Schmidt, DeSoto, Mo.

171 eggs per hen per year; average of our S. C. White Leghorns. Prize winners. Stock, eggs, chicks; mating list free. Cunningham Bros., Route 5, Lansing, Michigan.

S. C. White Leghorn eggs from prize winners, St. Louis, East St. Louis, Quincy and Belleville. Several splendid cockerels left. Julius W. Weber, Belleville, Illinois.

Single Comb White Leghorns. (Young strain). Prize winners, 92 to 96 pointers. Eggs and baby chicks a specialty. Booklet free. W. H. McCormick, Ransom, Illinois.

Single Comb White Leghorns exclusively, large, stay white kind, heavy layers, and profit payers. Eggs, $4 and $10 per hundred. H. A. Teegarden, Union City, Indiana.

S. C. W. Leghorns, Ingraham strain. Large white birds, prolific layers; none better. Eggs for sale. C. G. Ingraham, Originator of the etrain, Waukegan, Illinois.

Eggs, S. C. W. Leghorns. Pen scores 90 to 95½. 75 cents per 15; $4.00 per 100. S. C. Mottled Anconas, 75 cents per 15. L. J. Hooper, Palmyra, Wis.

Cole's S. C. White Leghorns. Large, vigorous, farm raised birds. Heavy laying strain. Eggs, $1.25 per 15; $5.00 per 100. Cole's Poultry Farm, Quakertown, Pa.

Single Comb White Leghorns. The quality kind. Good winners at Detroit and Indianapolis, 1911; stock and eggs for sale. C. W. Hosmer, Union City, Mich.

Stoughton's Single Comb White Leghorns are a strain of winners, bred to lay; 25 acre range; 15 eggs, $1.50 Circular. Geo. A. Stoughton, Rockbridge, Ohio.

Eggs from fancy Single Comb White Leghorns, prize winning birds, Easling strain; $2.00 per 15; farm eggs, $1.00 per 15. Nat L. Brasfield, Unionville, Mo.

Reiff, the Farmer Fancier breeder of R. and S. C. White Leghorns. Eggs for hatching 10c each, $10 per 100. Joseph Reiff, Route 2, Chambersburg, Pa.

Single Comb White Leghorns, Runner Ducks. Eggs, $1.00 per 15; $4.00 per 100. Rose Comb Black Bantams, $1.50. Phil Ried, Castalia, Ohio.

Get the best laying strain, S. C. White Leghorns. Eggs, $6.00 and $10.00 per 100. R. M. Clark, Sunnyslope Poultry Farm, Quincy, Ohio.

S. C. White Leghorn pens score 93 to 94; $1.00 setting 15. 94 to 95¾, $1.50; scored stock have prize. Wm. C. Dahl, Berger, Mo.

Rose Comb White Leghorns. Chicago winners. Thos. Brogden, Rush Lake, Wis.

Minorcas—Black

Single Comb Black Minorcas exclusively (Northrup strain), unexcelled for laying. Eggs, $1.50 per 15. $5.00 per 100. Ward L. Hammond, Route 2, Oewego, New York.

Single Comb Black Minorca Eggs from strain of National reputation, $3.50, 15; $6.00 per 30. Results guaranteed or your money refunded. Fred Kelm, Seneca, Kan.

I have bred S. C. Black Minorcas ten years, that won first prizes wherever shown. 15 eggs, $1.00; 50 eggs, $2.50. Stock all sold. Alton Finney, Plattsville, Wis.

Single Comb Black Minorcas bred exclusively. Excellent laying strain. Eggs, $2.00 per 15 or $8.00 per 100. Minorca Farm, Sta. L, Route 3, Cincinnati, Ohio.

Rose Comb Black Minorca Eggs for hatching from first prize winners at Chicago and other large shows. Mating list free. Edgar Brooks, Zion City, Ill.

Single Comb Black Minorcas, great egg strain. 237 eggs per hen. Eggs $2 per setting. Black Satin Minorca Yards, 6 Daisy St., Rochester, N. Y.

Rose Comb Black Minorca eggs, $2.00 per 13. From 92 to 96 point birds. Trios and pens for sale. Will Heintz, 819 Vine St., Quincy, Ill.

Minorcas—White

Single Comb White Minorcas. Pens made up from fine selected stock. Scores of satisfied customers. Eggs for hatching at right prices. Write for further information. W. E. Rice, Spartansburg, Pa.

Rose and Single-Comb White Minorcas. Choice, prize winning stock. 15 eggs, $2.00. Booking orders now. Charles M. Palmer, Nassau, N. Y.

Rose Comb White Minorcas, the world's best. Thos. Brogden, Rush Lake, Wis.

Ornamental

Silkies, White Frizzles, Black Frizzles, White Rumpless, Black Rumpless, White Guineas, Pearl Guineas, Gray Call Ducks, English Greyhound pups. (Wanted Peafowls.) Enoch Baily, Albion, Ill.

Orpingtons

Crystal White Orpingtons. Females from Kellerstrass $100.00 pen. Males direct from Kellerstrass. Eggs, $2.00 setting of 15. Rhode Island Reds, Lambke and Justie strain. Both combs. Eggs, $1.00 setting of 15. Orders booked to ship when directed. Roland McKean, Mulberry Grove, Ill.

Orpingtons, Black and White. My famous strain, Ring on Top, are the best by test all over the world, no matter how much you pay, you cannot get any better quality and remember at low prices. Large illustrated catalog free. Wm. A. Heinrichs, Sellersburg, Pennsylvania.

Gee-Whiz Fruit and Poultry Farm Orpington Eggs for hatching. Arkansas bred. Buff, White and Black. Bred right, kept right and sold right. Write for 1912 mating list. Gee-Whiz Fruit and Poultry Farm, Fred P. Phillips, Manager, Rt. I, Gentry, Benton Co., Ark.

Crystal White and Golden Buff Orpingtons. Winning wherever shown. Twenty-five Buff and ten White cockerels, $2.00 up. Sold on approval. Booking orders now for eggs and baby chicks. Stamp brings mating list. Crystal Orpington Farms, Box F, Batavia, Ill.

Orpingtons, White (both combs), Single Comb. Buff, Black. New York, Boston, Hagerstown, Williamsport winners. Eggs, Baby chicks, reasonable. Mating list free. Wm. Seidel, Box G, Washingtonville, Pa.

Orpington Place, where you get the best S. C. Buff and White Orpingtons in the West. Stock and eggs for sale. Send for mating list. Geo. B. Moehrl, Marshalltown, Iowa.

Single Comb Buff, White, Rosecomb White. Prize Winners. Bargains in Breeders. Eggs, $1.50 up. Hens with Baby Chicks, $4 up. Mating List. Doctor Evans, LaGrand, Iowa.

S. C. Black and White Orpingtons. Eggs for hatching from prize stock having best blood lines in existence. Prices, $2.50 to $5.00. Vernon Mathews, Vineyard, N. Y.

Orpingtons—Black

Single Comb Black Orpingtons, prize winners. Winning six firsts, four seconds, three thirds, two fourths, two fifths at three shows. Eggs from two grand pens, $2.00 and $2.50 per 15. John Holscher, Dyersville, Ia.

Schuman Single-Comb Black Orpington. Best of all winter layers. Scoring as high as 94½. Winners wherever they show. Eggs in season. $2.50 for 15. Ed. J. Schuman, Neosho, Wis.

Criterion Black Orpingtons for laying and winning. Standard size type, color, Crystal Palace and American winners. Mated up. Catalog. Lykens Valley Farm, Box G, Sacramento, Pa.

Black Orpingtons exclusively. The low, blocky kind. Winners twice of the American Orpington Club Cups. Stock for sale. Eggs, $5.00 and $3.00 per 15. E. F. Arrington, Milton, Wis.

Black Orpingtons, Cook and Owens strains; prize winners. Also Single Comb Black Leghorns. Great winter layers. F. G. Turner, Box 356, Alleghany, N. Y.

Black Orpingtons. Stock and eggs for sale. High class, score 93 to 95½. Write for prices. Circular free. Satisfaction guaranteed. T. Haynes, Red Bud, Ill.

Buff Orpingtons

S. C. Buff Orpingtons. Eight pens headed by cockerels scoring 93. Raised from imported birds scoring dam 93½, sire 95¼. Eggs from all pens, $2.00 per 15; $10.00 per 100. Satisfaction guaranteed. S. B. Terry & Son, Little Sioux Poultry Yards, Little Sioux, Iowa.

Single Comb Buff Orpingtons exclusively. Eggs from special matings, choice exhibition stock, $3.00 to $5.00 per 15. From utility stock, $1.50 per 15; $6.00 per 100. Send for mating list. Leo. W. McDavitt, Laplata, Mo.

Buff Orpingtons. Our birds are noted for vitality, type, size and utility qualities. Also winning at leading Illinois shows. Mating list free. Eggs, $1.00, $2.00, $3.00 per 15. Tietsort & Stutzman, Box B, Girard, Ill.

Eggs and prize winning S. C. Buff Orpingtons at $1.00 for 15, $2.50 for 50. Eggs from S. C. Black Orpingtons, $1.50 for 15, $3.50 for 50. Satisfaction guaranteed. Carl J. Hedberg, Boxholm, Iowa.

Single Comb Buff Orpingtons, Single Comb White Leghorns, Indian Runner Ducks. Exhibition, heavy laying combined. Eggs, $1.00 per 15. Cedar Hedge Poultry Farm, Box 1101, Savannah, Ohio.

Winter Laying Strain. S. C. Buff Orpingtons. Stock and eggs for sale. All Buff Beauties and bred to lay in winter. Send for catalog and prices. Booking orders now. V. T. Williams, Stanberry, Mo.

Single Comb Buff Orpingtons. Pen headed by 2nd cockerel Kansas State Show, 1910; hens from "Victor," 1st cock, same show. Eggs, $5.00 for 15. Mrs. T. A. Jackson, Yates Center, Kan.

Buff Orpingtons, Owens strain. Won prizes in two good shows. Cock scored 93 by Russel. Stock all sold. 15 eggs, $3.00. Fertility guaranteed. Club member. C. D. Adams, Olathe, Kan.

Single Comb Buff Orpingtons. Ten grand pens of prize winners. Eggs, $1.50, $2.00, $3.00 per 15; $5.00 and $7.00, 100. Over 500 prizes in four years. H. D. Kelley, Reedsburg, Wis.

Eggs for hatching, from best blood lines of S. C. Buff Orpington chickens and standard bred pure white egg strain of Indian Runner Ducks. Prices right. C. C. Dawson, Chrisney, Ind.

S. C. Buff Orpingtons and Anconas. Prize winning stock for sale. Eggs for hatching from free range birds. Price low. Guarantee satisfaction. J. R. Wilcox, Knoxville, Pa.

241 egg strain, Single Comb Buff Orpington eggs for hatching, 75 per cent fertile guaranteed. Cook strain direct. Circular free. Try me first. Walter Bardsley, Neola, Iowa.

Buff Orpingtons. Two great shows, won 4 1st, 2 2d, 2 3d, 2 4th, and 8 specials. Eggs, $1.50 and $5.00 per 15. Write for catalog. B. F., Aug. Peterson, Churdan, Iowa.

Single Comb Buff Orpingtons. High scoring stock. Rich in blood of Madison Square winners. Eggs, $1.50, 15; $2.50, 30. Utility, $5.00, 100. Mrs. Fred Jones, Kane, Ill.

Send a $5.00 money order to W. T. Remlinger, Ottoville, Ohio, for setting Single Comb Buff Orpington eggs and raise some prize winners. Satisfaction guaranteed.

Thorobred Orpingtons — Buffs, pen, $2.00 per 15. Range, $1.00 per 15; $5.00, 100. Whites, Kellerstrass strain, $2.50 per 15. Mrs. S. W. Pfister, Hiawatha, Kansas.

S. C. Buff Orpington Eggs from prize winners at Illinois State Fair, 1911, won 1st cockerel. Write for mating list. Mrs. Ferne Deuterman, Atlanta, Ill.

S. C. Buff Orpingtons and Red Carneaux Pigeons. Quality and price makes business. Eggs and stock for sale. Write me. J. B. Joseph, Sears, Ill.

S. C. Buff Orpington Eggs. Mertz and Owens strain, best winter layers. Big egg record. Golden Buff, $1.50 to $3.00 setting. Thomas Fewtrell, Joliet, Ill.

Single Comb Buff Orpingtons (Cook's strain) direct. Good colors, good size, good shape. Write for mating list. Riddle & Sons, Le Roy, Ill.

Send me an order for 50 S. C. Buff Orpington eggs at $2.50. I can please you. $4.50 per hundred. Mrs. Judson Lyman, Concord, Mich.

Orpingtons—Solid Buffs. Mammoth size, fine quality, farm raised. Eggs, $1.50 per 15, $7 per 100. Herbert Rudd, Forrest, Illinois.

Single Comb Buff Orpington; eggs, $1.50 to $3.00 for fifteen; day old chicks; send for mating list. J. W. Bear, Warrensburg, Mo.

Orpingtons—White

Crystal White Orpingtons are tho most popular chickens in the world today. You can see more of them advertised than any other breed of chickens. Why—because they weigh more and lay more. We were the originators of this famous breed. They were originated right here on our farm. If you want to know more about them and the prices of stock and eggs, send for our large illustrated catalog. Kellerstrass Poultry Farm, 9176 Westport Road, Kansas City, Mo.

Single Comb White Orpingtons. Many prize winners mated this season for eggs. Baby chicks after April 1st. Eggs, $2.00 to $10.00 per 15. Send for mating catalogue. Superior Poultry Farm, A. J. Bullis, Prop., Goodland, Ind.

White Orpingtons, Kellerstrass and Cook strains. Heavy layers; winners at Ft. Madison, Keosauqua, Bonaparte, Keokuk, Ia., Warsaw, Camp Point, Ill. Eggs, $3.00 setting, 30 for $4.00. J. M. Skinner, Keokuk, Iowa.

Our Crystal White Orpingtons and Mani Light Brahmas have been awarded sixty-three regular and eleven special prizes at Iowa shows, 1911-1912. At Des Moines we took 1st cock, 1st and 2d cockerel, 1st and 2d pullet, 2d and 3d hen, 2d pen. Silver cup for best cockerel, silver cup for display Brahmas and Sweepstake cup over all Asiatics. Stock for ssie; eggs, $3.00 and $5.00 per 15. Fairholm Poultry Yards, 307 W. 4th St., Boone, Iowa. W. Oliver, Mgr.

Imported Single Comb White Orpington stock and eggs from first prize cockerel, third prize cockerel, second pen, second and fourth pullets at Illinois State Poultry Show, Springfield, 1911, and winners at many other shows. Write for mating list and prices. Heaps White Orpington Farm, Kewanee, Ill. Dayle S. Blake, manager. Warren T. Heaps, M. D., Proprietor.

Single Comb White Orpingtons, Kellerstrass strain. I furnish you the foundation for top-notchers in cocks, cockerels, hens, pullets, baby chicks or eggs. Send me what you feel you can invest in any of the above, and if I don't please you, you can have your money back (with a smile). Write for mating list. Mrs. W. H. Vreeland, Pattonsburg, Mo.

Buy "Crystal White Orpingtons"—Best for market because they grow faster; best for eggs because they are the "winter egg" machines. I am booking orders now for eggs from prize winners at Lansing and Port Huron, Michigan shows, 1911. Prices, $3.50 and $5.00 per 15. William Purfield, Ann Arbor, Mich.

Kellerstrass Orpingtons—April hatched stock from a $100.00 pen direct from the Kellerstrass farm and selected by him. Choice cockerels and pullets at a bargain. Eggs after April first, $5.00 per setting. Miss Susie M. Fowler, Slater, Mo.

White Orpington Eggs from imported pen, $15.00 per 15. First pen American birds, $10.00 per 15. Several pens, all prize winners, $5.00 per 15. Satisfactory hatch guaranteed or refilled at half price. Wm. Thurman, McMinnville, Tenn.

S. C. White Orpingtons and Salmon Faverolles. Winnere silver cup Zion City and 3 1sts, 2ds and 3rds, and 1st pen at Oconomowoc, Wis. Cockerels for ssie. Mating list. Innes Crystal W. Yards, Chas. Innes, Zion City, Illinois.

We have 40 of Kellerstrass famous breeders, from which he sold eggs at $2 each. We can sell eggs from these identical hens for $3, $4 and $5 per setting. Special rate per 100. Mrs. Little, 36th and Jackson, Kansas City, Mo.

S. C. White Orpingtons. The ideal farmer's fowl; quick growers, big weighers, big layers and acclimate themselves easily. Eggs from utility stock, $1.50 per 15. G. F. Fisher, 122 N. Seitzer St., Crestline, Ohio.

Kellerstrass White Orpingtons. I won nine prizes in class of fifty-three shown by eight exhibitors. Birds score to 95½. Mating list. Fifteen eggs, $3.00. Express prepaid. Edward Buss, Janesville, Wis.

Crystal White Orpingtons. Write us your wants. we have both stock and eggs for sale. Foundation stock a $100.00 pen direct from Kellerstrass Farm. Hardin Poultry Farm, Route 1, Noble, Okla.

S. C. White Orpingtons, Philo and Kellerstrass. Pedigred winter laying and exhibition strains. Matured classy birds. Orders filled in turn. Eggs, 20c each. R. W. Howland, Manchester, Iowa.

White Orpingtons of Quality. Eight grand pens. Eggs shipped anywhere. Catalogue describes each. Noted winners and layers. F. Bullington, Secretary, White Orpington Club, Richmond, Va.

Single and Rose Comb White Orpingtons. Best strains. Single Comb White Cochin Bantams. Eggs after March 1st. Miss Edith Cavanagh, Cavalna Poultry Farm, Orange, Virginia.

Kellerstrass Crystal White Orpingtons, Miles trapnested Single Comb Rhode Island Reds. Baby chicks and eggs for hatching. Forestview Poultry Farm, R. D. 2, Saint Johnsville, N. Y.

S. C. White Orpingtons, two grand pens mated for my especial purposes; a few eggs at reasonable prices; also McAvoy's Houdans. Send for mating list. Dr. F. E. Barnes, Charleston, Ill.

Orpington Eggs, $3.00 per 15; $12.00 per 100. Birds from $50.00 and $100.00 Kellerstrass trios. My birds have been laying all winter. Cockerels, $2.00. Roy Bowman, Albany, Wis.

White Orpingtons of quality. Kellerstrass strain direct. Blue-ribbon winners. Utility eggs, 15 $1, 100 $6. Circular free. Satisfaction guaranteed. J. H. Keefer, Millersburg, Pa.

Eggs for Hatching. Kellerstrass strain (direct). I have eggs from this famous strain of Single Comb White Orpingtons at reasonable prices. Thos. H. Kean, Nantucket, Mass.

White Orpingtons. My Orpingtons pay because they are bred to lay, have the size and "Sta-White" color. Eggs reasonable. Satisfaction guaranteed. H. A. Snyder, Tampico, Ill.

From $1,000 Madison Square, N. Y., and Crystal Palace, England winners, 5 pullets and cockerel, $10. Eggs very best, $1 to $5 per 15. A. M. Sinsabaugh, Wyalusing, Pa.

Royal Strain White Orpingtons. Snow white, ideal layers. Baby chicks, $6.00 for 12. Eggs, $2.50 for 15. Buy the best. Royal Yards, J. H. Irons, Elmira, N. Y.

Orpingtons—All single-comb varieties. Won 120 prizes at three state shows. Special bargains in pens, trios and cockerels. Boomgaarns Farms, Box F, Humboldt, Nebraska.

High Class White Orpingtons. Eggs, $1.50 per setting. Here's your chance to get good stock or new blood cheap. Book your order early. Will H. Melzor, Effingham, Ill.

Single Comb White Orpingtons, Kellerstrass strains. Stock for sale, eggs $2 per 15, $5 per 45, $10 per 100, express paid. Chicks 30c each. K. I. Miller, Box 2, Lancaster, Mo.

Buy Crysial White Orpington eggs, ten to fifty cents each, of a specialist who is deep in the show business. Winners at the largest shows in Iowa. C. Hummer, Keswick, Iowa.

Single Comb White Orpingtons, Kellerstrass strain. Have won at Altoona, Williamsport, Scranton. Eggs, $2.00, $3.00, $5.00 per 15. D. A. Strayer, Box D, Coalport, Pa.

Kellerstrass White Orpington eggs and baby chicks from prize winners, for sale. Greatest winter layers. Most popular breed of today. Dr. Walter Turman, Marshall, Ill.

Kellersirass Crystal White Orpingtons. I have some fine pens, farm-reared stock. Eggs in season. Prices right. Satisfaction guaranteed. Frank F. Peck, Balnbridge, N. Y.

S. C. White Orpingtons, blue ribbon winners. If you need any eggs be sure and drop me a card before you buy. I guaranteo satisfaction. O. F. Stark, Boxholm, Iowa.

Kellerstrass Strain Crystal White Orpingtons from his $30.00 matings. "We have the goods." Write for prices. M. A. Clark & Son, 25 Myrtie St., Redlands, California.

Kellerstrass Crystal White Orpingtons at live and let live prices. Eggs and chicks. Literature free. Orpington Club member. S. L. Hurley, Box G, Elmira, New York.

Kellerstrass Crystal White Orpingtons. Eggs, $3.00 per setting; two settings, $5.00, from Pen 1. All others $2.00 per setting. James L. Robinsou, Route 1, Smithville, Mo.

Kellerstrass Orpingtons. Eggs, $1.50 per 15. Fishel White Wyandottes; eggs, $1.00 per 15. Satisfaction guaranteed. Safe delivery. Walter Steldinger, Forrest, Illinois.

Crystal White Orpingtons. Oescendants of a Kellerstrass $500.00 pen. Extra layers, grand type and size. Farm raised. Eggs, 10c each. A. E. Starr, Andover, N. Y.

A $100 White Orpington Pen. Eggs from $30.00 matings direct from Kellerstrass; circular; eggs, 8c each and $5.00 per 15. Orpington Farm, Niobe, N. Y.

Kellerstrass White Orpingtons. Pullets and yearling hens, $2.00 each. Also mate pens and trios. Eggs at $10.00 per 100. Mrs. Ad Hanna, Big Rock, Ill.

For Sale. S. C. White Orpington hatching eggs, $3.00, 15; birds score 95 points. Utility, $1.25. W. H. Harbison, 338 S. Douglas Ave., Springfield, Ill.

Best pen of White Orplngtons in Texas. Winners at our largest shows. Imported. Eggs, $12.00 for 13. Texas Orpington Farm, Box FG, Flatonia, Texas.

Crystal White Orpingtons, eggs $5, $3 and $2 per 15. Incubator lots from utility stock a specialty, $7.00 per hundred. Mrs. Jess Burford, Waveland, Indiana.

Crystal White Orpingtons. My foundation stock is from a $100.00 trio, and Kellerstrass eggs. Eggs, 10c, $8.00 per 100. Mrs. Ethel Cook, Andover, N. Y.

Why Snyder's Kellerstrass Orpingtons? My booklets tell. Eggs from stock scoring 92 to 96¼ at $2, $4.50 and $7.50 per 15. W. C. Snyder, Bunceton, Mo.

Single-Comb White Orpingtons of the better sort. Won first honors at the great Illinois state fair three years in succession. Troy Medaris, Bement, Ill.

Kellerstrass Crystal White Orpingtons. Eggs $2 per 15 up. I have stock from eggs bought of Kellerstrass at $2 each. F. R. Brill, Hampshire, Ill. Box 70.

Extra fine S. C. White Orpingtons. We are booking eggs for early delivery. Write your wants. Granite State Poultry Yards, Box 52, Nashua, N. H.

S. C. White Orpingtons. Selected eggs, from pens of beauties, $2.00 per 15. $10.00 per 100. Packed to hatch. T. H. Burke, No. Bennington, Vt.

Single Comb White Orpingtons exclusively. Eggs, $1 50 and $2.00 per 15; $8.00 per 100. Gilbert W. Schnably, McKeesport, Pa.

Kellerstrass Strain White Orpingtons. Eggs, $1.50 per 15; $7.00 per 100. Ed Leclere, Central City, Iowa.

Crystal White Orpingtons, scoring to 95½. Thos. Brogden, Rush Lake, Wis.

Partridge Rocks

Partridge Rock eggs at $2.00 per 15; order direct from this ad or write for description of our stock. Ells Poultry Farm, Charlotte, Mich.

Plymouth Rocks—Barrod

Brooks Pedigreed Barred Plymouth Rocks are today leading their class in both the International Egg-Laying Contest now being held in Missouri and Connecticut. Why? Because they have been trap-nested for several generations solely to increase their egg production and they are showing the development of this quality. High grade pedigreed cockerels for sale from $10.00 up. Eggs for hatching in season. Satisfaction guaranteed. Brooks Sanitary Hennery, Morgan Park, Illinois.

Pilgrim Strain Barred Rocks are great layers and prize winners. This means profit and pleasure. Chicks, eggs and stock sold. Catalogne shows photo of prize winners. Every customer mentioning The Fruit-Grower gets free two eggs from prize winners. Rhodaround Farm, Fairfield, Conn.

Barred Plymouth Rocks. Eggs, yard A, $4 per 15; yard B, $2.50 per 15. White Mammoth Turkeys, largest in country, weighing 51 lbs., eggs 25c each. Write for stock prices. Geo. W. Wingo & Son, Route 9, Mayfield, Ky.

Barred Rocks—Latham's pullet line—prize winners in three states, 52 eggs prepaid to you $5.00, 100 eggs $7.50. Satisfaction guaranteed. Oscar Smith, Plainfield, Iowa.

Barred Rocks, Ist cock, 1st cockerel, 3d hen at two leading shows, 1912. Shipments subject to approval. Special mating. Eggs, 15, $2.00; 30, $3.00. Cockerels, $2.00. Standard Bred Poultry Farm, Pimento, Ind.

Ostrich Plume Barred Rocks, best blood lines of the world, show record unexcelled. Cockerel and pullet mating eggs, $3 for 15; $5 for 30. Mating list free. J. A. Ayers, La Plata, Mo.

Barred Plymouth Rock Eggs, 15, $1.00; $5.00 per 100. Our customers are not disappointed when chicks are grown. 16 years breeding. Catalogue free. S. V. Lateham, Woodward, Iowa.

Ringlet Barred Rocks. Won silver cup for best Barred Rocks, Championship medal for best hen; all breeds competing. Eggs, $1.00 and $2.00 per 15. H. S. Brendle, Rohesonia, Pa.

Barred Rock Eggs for hatching from choice high scoring stock. Deep clear barring. Large and vigorous. $1.00 per 15; $2.50 per 45; $5.00 per 100. M. D. Porter, Vandalia, Mo.

Challenge Laying Strain of Barred Rocks and White Leghorns. They lay the year round. Breeders for sale. Valuable circular free. Mrs. E. M. Hart, Route 32, Irondequoit, N. Y.

Ringlet Barred Plymouth Rocks, hatching eggs (both matings). Day-old chicks. Mating list free; infertile eggs replaced. A. W. Kopfstein, 1068 E. 79 St., Cleveland, Ohio.

Barred Rock Eggs for hatching from pens containing choice show and breeding birds. Cockerels or pullet matings. $3.00 for 15 eggs. Henry Ames, Russell, Ill.

Blue Ribbon Barred Rocks. Cockerels for sale; big fellows; no better laying strain. Eggs from prize winners, $2.00 per 16. Sunny Slope Nursery, Hannibal, Missouri.

Page's Barred Rocks noted for utility and prize winners, best pens $10.00. Farmers pens, 30 eggs, $2.50. Mating list ready. S. H. Page, Waverly, Iowa.

Barred Plymouth Rocks. Thompson's cockercl mating and Wales pullet mating, distinct. Stock for sale. Eggs, $2.00 per 15. W. P. Ruark, Kramer, Ind.

Choice Barred Rock Cockerels, $1.50 to $2.00 each; eggs, $1.00 per 15 or $5.00 per 100; farm raised. Bred to lay. Dradie Dunbar, Columbus, Kansas.

Barred Rocks, flock headed by Park's best pen cockerels. Good females, good layers. Eggs average 08% fertile. Splendid hatchers. Mrs. Fred Mooro, Altoona, Kansas.

Barred Plymouth Rocks, five pens mated; eggs, $2.00, 15; $8.00, 100; 25 cockerels and a few females for sale. H. Loutzenhiser, Route 2, Danville, Ill.

Barred Plymouth Rocks. Buy of me, get the benefit of my years experience in the breeding and judging of them. W. S. Russell, Ottumwa, Iowa.

Ringlet Barred Rock eggs, bred from E. B. Thompsons direct; 13, $1; 26, $1.75; 50, $3; 100 lots, $5. E. H. Barden, North East, Pa.

Plymouth Rocks—Columbians

Allen's Columbian Rocks. World's champions. Empire strain. Clean sweep at Madison Square Garden; winners at Philadelphia, Boston, Buffalo, New York. Mating list out. S. C. Allen, Mgr. Valley View Farms, Orchard Park, N. Y.

Columbian Plymouth Rocks, best of layers, large size and good color. Eggs $3 per 15, $5 per 30. George Pinta, Ft. Atkinson, Wis.

Plymouth Rocks—Buff

Buff Rocks—Progeny of "Poley's World's Best." Bred for utility as well as fancy. Unequaled winter layers. Eggs, $1.50 and $2.00 a setting. Satisfaction guaranteed. M. H. Davidson, Fishkill-on-Hudson, N.Y.

Buff Rocks. Salyards Celebrated. Winner Kansas City, St. Louis, Des Moines. Bargains in hens. Eggs for hatching, very choice matings. Catalog. R. S. Salyards, Iowa Vice-Pres, Box M, Lamoni, Iowa.

Eggs from prize winning Buff Rocks, $2.00 the 15; 1st cockerel, 1st, 2d, 3d, 4th pulict, Jeffersonvillo. 1st cockerel, 2d pullet, 1st pen, Piqua, Ohio shows. Tho Buff Rock Poultry Farm, Jeffersonville, Ohio.

Buff Rocks and Rose Comb Buff Leghorns. Eggs now ready for hatching. Four blue ribbon winners. Henry Hazotte, 12th and Palm Poultry Yarde, Paducah, Ky.

Buff Rocks exclusively. 50 selected cockerels, $2.00 to $3.00 each. Stamp for descriptive colored calendar. Branch Valley Poultry Yards, Route 2, Telford, Pa.

Buff Rocks, Eggs and Chicks. Best results at reasonable prices. Safe delivery guaranteed. Send for mating list. E. A. Meyers, Route 9, Mt. Sterling, Ill.

North's Buff Rocks, winners at Buffalo, Rochester and Waverly. Stock for sale. Eggs, $1.50 and $3.00. Write for circular. D. P. North, Waverly, N. Y.

Notice—They win the blue. Just a card and let me tell you how I mated my winter laying Buff Rocks. Write today. N. E. Swedburg, Hildreth, Neb.

Buff Plymouth Rock Eggs for sale. The kind that will pay you because they pay me. Prices friendly. Write me. William A. Hess, Humboldt, Kan.

Buff Rock Eggs for sale, from vigorous, heavy laying strain. 75 cents per setting or $3.50 per 100. Future orders taken. Frank Ware, Butler, Ill.

Golden Buff Plymouth Rocks. Fifteen years a breeder Northern grown and farmed raised. Circular free. L. B. Hanna, Austin, Minn.

Plymouth Rocks—White

High class White Rocks. Fishel strain. Direct. Eggs from wonderful layers. $1.00 per 15; $3.00 per 50; $5.00 per 100; $9.50, 200. Also Fishel White Indian Runner Duck eggs. Henry Heitkamp, New Bremen, Ohio.

White Plymouth Rocks—Won 23 blue ribbons the past season. 300 birds for sale, $1.50 up. My April pullets laid in September. Special discount on egg and baby chicks for early orders. Write H. H. Haskin, Box Y, Robinson, Ill.

U Want a White Plymouth Rock. Blue ribbon winners at St. Louis, Mo. State Fair, etc. To introduce same will sell one setting from selected matings at $2.00. Catalog free. Otto M. Roth, Box C, Kirkwood, Missouri.

White Rocks (Fishel), pens, trios, pairs; cockerels, three to fifteen dollars. Pullets 1st and 2nd; cockerel 1st. Binghamton Exposition. Eggs, $3.00 setting. Dr. J. H. Martin, Binghamton, N. Y.

High Class White Rocks, Fishel strain. 15 eggs, $1.00; 100 eggs, $5.00. Also pure White Indian Runner Ducks, eggs for sale in season. George Lehmkuhl, Rox 33, New Bremen, Ohio.

White Rocks; eggs, $2.50 per 15. Choice cockerels, $2.50 to $5.00. Every bird bred from Rochester, Buffalo, Boston, Chicago winners. Roseland Poultry Yards, Branchport, N. Y.

White Plymouth Rocks. Try our eggs, $1.00 and $2.00 per 15. They will please. Breeders and young stock for sale. Rose Lawn Poultry Yards, 238 East Main St., Middletown, N. Y.

Wilson's White Plymouth Rocks, winning at Minneapolis again, demonstrated their quality. Start right. Book now. $1.50 per 15. $6.00 per 100. Wheatland Farm, Owatonna, Minn.

White Plymouth Rocks. Eggs at $1.50 per 15; $6.00 per hundred. Young and old stock scoring 90 to 94 at $2.00 and $5.00 each. Benj. Overbeck, Box F, Edwardsville, Ill.

White Plymouth Rocks of highest quality. Eggs and stock for sale, at reasonable prices. Orders booked for spring delivery. Mrs. O. V. Sherpy, Northfield, Minnesota.

White Plymouth Rock Eggs for hatching, from large, heavy laying, pure white hens; pens headed by Fishel cockerels. $2.00 per 15. J. LeFevre, Valhalla, N. Y.

Halbach White Plymouth Rocks. Eggs for hatching from winners at State Poultry Show, St. Joseph, Mo.; $2.00 per 15. Robt. G. Knipple, South St. Joseph, Mo.

The L. A. Doolittle White Plymouth Rocks. Before you buy, write for prices on baby chicks and eggs for setting. L. A. Doolittle, Route 2, Waukegan, Ill.

White Plymouth Rocks. Fine large birds, good shape, color and head points. Eggs, $1.50; $1.00 per 15. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

White Rocks; males, $3.00, two $5.00; females, $2.00, six $10.00. White Holland Turkeys. D. E. Gray, Specialist, Route 5, Groveland Sta., N. Y.

White Plymouth Rock Eggs, $2.00 for 15, from pen which took all prizes in class at Windom and Madelia shows. Will Curtis, St. James, Minn.

Pure Bred White Plymouth Rock eggs, $1.00 per 15; $3.50 per 100. Baby chicks, $10.00 per 100. Miss Louie B. Galt, Appleton City, Mo.

Polish—Black

White Crested Black Polish, Snowball strain. Handsome mating list free. Booking orders now. Snowball Poultry Yards, 908 Rivermeet Ave., Ft. Wayne, Ind.

Rhode Island Reds

Your Chance. Single Comb Reds bred to lay and win for years. Hens, pullets with fine color and type mated with exhibition males, kept for reserve. $1.00 per 15 eggs. Four best exhibition matings, $5.00 per 15. Cockerels for sale. Rev. F. Schoenbohm, Denver, Iowa.

Rose Comb Rhode Island Reds. American Beauty strain. My birds have made great gains in show rooms this season. If you want large deep colored birds with extra laying qualities, send for mating list now ready. Eggs, $1.00 to $7.50 per 15. A. V. Davis, Ridgefield, Conn.

Rose Comb R. I. Reds, grand color, shape and size. All scored stock. Two choice pens headed by Kansas State Poultry Show winners. Eggs, $1.00 to $3.00 per 15; pure bred farm range, every bird choice, $4.50 per 100. Mrs. Clyde Myers, Fredonia, Kan.

S. C. Rhode Island Reds, ours lay in winter. Tomkins strain, 27 prizes on 30 entries. Trenton, Mt. Holly, Red Bank. Farm raised, great size, type, color. Eggs that hatch $2.00 per 15. Reneville Poultry Yards, Box 3941, Keyport, N. J.

R. C. R. I. Reds. Now booking orders for eggs from choicest mating, $5.00 per 15. From very select mating, $3.00 per 15. From utility stock, $1.50 per 15; $6.00 per 100. D. E. Hail, life member A. P. C., Route 2, California, Mo.

S. C. R. I. Reds, eggs, farm range, choice laying strain $1.00 per 15, $5.00 per 100; pen No. 1, prize winners, $3.00 per 15. Special mating pen, $2.00 per 15. Indian Runner Ducks, eggs, $1.00 per 12. W. C. Farley, Emington, Ill.

Michigan Royal Red strain Single Comb Reds that are red. Ninth year. Heavy winter layers. 15 eggs, $1.50 and $3.00. C. W. Soutbworth, Dowagiac, Mich.

Rhode Island Reds. At Missouri State Show at St. Joseph, won ten premiums on ten entries, four firsts, three seconds, one third, two fourths. Eggs after June 1, 1912, at half price. Mrs. W. S. Hamilton, Clarksville, Mo.

Sprague's Reds, Rose Comb exclusively. The best money and experience can produce. Eggs for hatching, one third what others charge for same quality. Circular free. Poultry Sprague, Maywood (near) Chicago, Illinois.

You will need the new Rhodo Island Red Journal, devoted to the Reds exclusively. Contains a wealth of practical hints about poultry raising on the farm. Send 25c for one year's subscription. Red Journal, Readlyn, Iowa.

America's Heaviest Laying Rods. Large, vigorous, pedigreed breeders. Records from 200 to 284, in single, and 291 in rose-comb. Extras to cover infertility. Charles Sweet, Route 4, Swanton, Maryland.

Bailey's Single Comb Rhode Island Reds (Tompkins-Seaman strain). From Madison Square and Boston winners. Eggs, $3, $2, $1 for 15. Circular free. B. M. Bailey, 51 Maple Ave., Napanoch, N. Y.

Thoroughbred Rose and Single-Comb Rhodo Island Red cockerels and pullets. Bred from 93 to 94 point males, and hens trap-nested for superior egg production. D. J. Bliss, Carthago, Mo.

Our 200-egg strain Rose Comb Reds, brilliant red color, no slate or white. Good comb and wing, long bodies, blood red eyes. Win wherever shown. John Mierley, Ottumwa, Iowa.

Reds, both combs, yards headed by Owen Farms males, females from winners at Missouri State, Kansas City, St. Joseph, Omaha. Mating list. John Skillman, Platte City, Mo.

Watson's celebrated strain. Rose-Comb Reds. Golden Princese laid 291 eggs in year; 50 hens averaged 240 in year. Cockercls and eggs. Book free. Ira Watson, Box C, Fredonia, N. Y.

Rose Comb Reds—Kaufman and Windhelm strains. Write for matings and winnings. Satisfactory hatch guaranteed. Eggs, $1.50 and $3.00 per 15. Forrest Roberts, Salem, Mich.

Rose Comb R. I. Reds. Eggs from high scoring birds, two dollars per setting. Fawn and White Indian Runner Ducks, white eggs, dime each. J. A. Alleshouse, Trenton, Mo.

Rose Comb Rhode Island Reds. Good breeding cockerels, two to five dollars. Eggs for hatching, one to five dollars. Winning stock. Catalog free. Orr & Dick, Arcadia, Ind.

Rose Comb Reds bred for exhibition and utility. Winners head best pens. Eggs and baby chicks a specialty. Also White Leghorns. Franklin Fox, Pipersville, Pa.

Rose Comb Rhode Island Reds. My hens are bred to lay. Good size and color. Eggs at reasonable prices. Dr. M. B. Reed, Cromwell, Iowa.

S. C. R. I. Reds. My first prize cock bird has never been beaten. Eggs, $1.00, $3.00 and $5.00. Frank S. Culp, Box 99, Butler, Ohio.

Single Comb Rhode Island Reds. If you want more show birds and better layers, introduce our strain. Send for circular. Forecastle Farm, Burnt Hills, N. Y.

Single and Rose-Comb Reds and Barred Plymouth Rocks. Pullets and cockerels for sale. Eggs, $3-15. Prices and quality right. Crosby Bros., Momence, Ill.

Eggs from high scoring S. C. R. I. Reds, score 92 to 94½ by Judge Tood. Eggs, $3.00 per 15. Satisfactory hatch guaranteed. H. M. Lange, Grafton, Iowa.

Single Comb Rhode Island Reds. Best high bred utility stock from world's leading strains. Eggs only, per setting, $1.50 to $2.00. Burt Roberts, Milan, Mo.

Rhode Island Rede, both combs. (Sibley strain), large size, red to the skin. Good shape, good layers. Write for mating list. Riddle & Sons, Le Roy, Ill.

Webb's Single Comb Reds. Ten years experience. Layers and winners of state cup, etc. Free circular will explain. E. M. Webb & Son, Waukesha, Wis.

R. C. R. I. Reds. Shape and color specials, won wherever shown. Bred to lay. Eggs $1.00 to $5.00 for 15. Edgedale Poultry Plant, Wheeling, W. Va.

Thoroughbred Rose-Comb Rhode Island Reds. Good laying strain. Eggs from scored pen, 15 for $3; utility, $1.75. C. C. Mason, Route 8, St. Joseph, Mo.

Custer's Single Comb Reds won 23 prizes on 29 entries at four different shows this winter. Settings, $1.00, $2.00 and $3.00. Oliver Custer, Xenia, Ohio.

Reds, both combs. You can pay more, but you get no better blood. Circular for chicks and eggs. J. C. Hamilton, Route 2, Box 110, New Castle, Pa.

R. C. Rhode Island Reds, prize winners for 6 years. Egg orders filled promptly. Send for mating list and prices. H. G. Poehling, LaCrosse, Wis.

R. C. Reds, high in quality. Write for prices on stock and for mating list. Guarantee satisfaction. W. J. Cocklin & Son, Rising City, Neb.

Get the best—Dark Red Rose Comb Reds—winners of 50 premiums, eggs $2.00 and $3.00 per 15; infertiles replaced. O. T. Grimes, Hunter, Okla.

Single Comb Rhode Island Reds—Eggs for hatching from choice matings, $1.50 per 15; $2.50 per 30. O. W. Graves, Goreville, Illinois.

Wyandottes

Black and White Wyandoites—Stock and eggs for sale. Black Wyandottes won first and second Hen and Grand Champion Male at Springfield, Ill., state show. Eggs $3 per 15. G. D. Duncan, Alton, Ills.

Wyandottes—Buff

Best for farmer or fancier. Eggs from prize winning, special winter laying beauties, $2.00 per 15; $10.00 per 100. L. D. Van Rensselaer, Kent, Ohio.

Wyandottes—Golden

Golden Wyandotte breeder, 12 years. Have two large range pens. Good laced blocky birds. Eggs, $2.00, 30; $3.00, 60. Gerhard F. Heliman, West Point, Iowa.

Wyandottes—Partridge

Partridge Wyandottes with a national reputation won most all prizes Kansas State Show two years. I have the right color, shape and size, so they cannot help but win. A dandy flock in a five acre orchard. Eggs, $1.50 for 15; $2.50 for 30. C. A. Page, Salina, Kan.

Elm Grove Poultry Farm. Mahogany strain Partridge Wyandottes. Matings scoring to 94½. Satisfaction guaranteed. Eggs, $3.00 per 15. F. E. Carpenter, Cedar, Iowa.

Wyandottes—Silver Laced

Silver Wyandottes; won first cockerel first pen; first, second, third pullets at Woodhull; birds scoring 94. 15 eggs, $2.00, $3.00; 30, $3.50, $4.50; 50, $5.00, $6.00. Jas. Roberts, New Windsor, Ill.

Silver Wyandottes—The great egg and table fowl; the breed for fruit growers. Cocks and cockereis, $2 up. Eggs by the sitting or hundred. Circular. Glenoak Poultry Yards, Kinmundy, Ill.

Wyandottes—White

White Wyandottes. Eggs from show winners exclusively, which several scored to 96; never defeated, won 53 premiums, 3 shows, 19 1st and 2d. Eggs, $1.00 and $2.00 per 15. Write for photos in mating list. You'll buy sure if you do. J. H. Willis, Jeweler, Norris City, Illinois.

At recent Utica, N. Y. show in hot competition with 110 White Wyandottes, seven out of nine birds I exhibited won. Will give better value than anyone. Try me. Send for mating list. Stock for sale. A. H. White, Glenwood Ave., Syracuse, N. Y.

Penfield's Prize-taking White Wyandottes. Big winners at such shows as Minneapolis and state fairs. Lay in the coldest weather. Eggs for hatching from free range. Standard bred stock. Write us. H. J. Penfield, Box A 324, Hudson, Wis.

White Wyandottes. Prize winners at the great Williamsport show. Nothing nicer than a flock of pure white birds. Plump, quick maturing, and great layers. Eggs, $1.50 per 15. Write me your wants. Jno J. Hafner, Box J, Woolrich, Pa.

White Wyandotte cockerels for sale. The typical Wyandotte sort, broad, deep body, short, stout shanks, 9 to 10 pounds each. Winners in shows this year. Only a few left. Price reasonable. Hiram Long, Edgerton, Ohio.

White Wyandottes. For winter layers and quality there are none better. Write us if you want stock. Eggs or day old chicks. Absolute satisfaction guaranteed. Cederdabi Poultry Farm, Owatonna, Minn.

White Wyandottes, Oustons. Lino bred for 10 years, fit to win anywhere. Heavy layers. Buff Cochin Bantoms. Solid buff, correct shape and size. Eggs, $3.00 per 15. Edwin A. Bennett, 103 Remsen St., Astoria, L. I., N. Y.

Excelsier White Wyandottes won ten ribbons Grand Rapids 1911 show, four at Holland, December, 1911. Winners whenever shown. Good cockorels. Eggs for hatching. John M. Hoogerhydo, Bates St., Grand Rapids, Mich.

Stay White Wyandottes that carry blood of 200 to 272 egg ancestry, fine combs, yellow legs, red eyes and lobes; eggs, 15, $1 50; 30, $2.50; 50, $3.75; 100, $6.00. Satisfaction guaranteed. Calvin Norman, Route 2 F, Dexter, Mo.

White Wyandottes. Fine line-bred Dustin stock. Winners St. Louis, Portland, Moncle. Fifteen eggs, $2.00; thirty, $3.50. Utility, fifteen, $1.00; hundred, $5.00; circular free. Herbert Smith, R. F. D., Bluffton, Ind.

White Wyandottes. Eggs and choice stock. 1909 to 1912 at Kansas state poultry show. Won 18 prizes. Eggs, $4.00 per 100. Send for show record and prices. Theo. B. Young, Route 1, Box 86, Wichita, Kan.

Peterson's Superb White Wyandoites. Great silver cup winners, fine layers. Winners Chicago, St. Louis, Galesburg and other shows. Send for catalogue. Wm. A. Peterson, Box F. G., Galesburg, Ill.

White Wyandottes that win the blue. Missouri and Illinois winners. Alton pullet, scored 96. Staunton pullet, scored 96½. Exhibition eggs, $3.00; Utility, $1.50. B. Pavey, Bunker Hill, Ill.

White Wyandottes. Cup winners and great egg producers. Nine firsts at two shows. Line bred for 12 years. Mating list free. Alden Rehm, Orrville, Ohio.

White Wyandottes, Superb strain. Winners at Altoona and Greenburg, Pa. Large, pure white, heavy laying birds. Send for mating list. James A. Bender, Box C, Coalport, Pa.

Rowland's Invincible White and Columbian Wyandottes are royal winners. Stock and eggs for sale. A satisfied customer or money refunded. Frank Rowland, New London, Ohio.

White Wyandottes thai have won at all the leading shows and will win for you. Eggs from prize winning matings, $3.00 and $5.00 per 15. R. S. La Rue, Bellfontain, Ohio.

Thoroughbred White Wyandotte Eggs, $1.50 and $3.00 per setting 15. Baby chicks. Show and heavy egg type combined. A square deal. Robert Fetrow, Etters, Pennsylvania.

White Wyandottes, prolific laying strain. Tested eggs from vigorous stock will secure good hatch, $1.50 per 13, $8.00 per 100. Wm. F. Schaffner, Lansdowne, Pennsylvania.

White Wyandottes. Been breeding them continuously since 1895. The kind that weighs, lays and pays. Send for circular. A. Franklin Smith, Route 9, Ann Arbor, Mich.

White Wyandottes—Choice cockerels from blue-ribbon winners; they will please you. Eggs from choice matings after February 1st. Harley R. Stick, Ridgeville, Ind.

Utility White Wyandottes, laying during zero weather. Won 1st hen, 2nd cockerel, 2nd pullet, 2nd pen. A. W. Gluesenkamp & Son, Box 58, Batesville, Ind.

White Wyandottes, prize winners, heavy laying strain. Special mated pens. Eggs, $2.00 for 15. White Cochin Bantams. I. A. LeMaster, Bushnell, Ill.

All Breeds

90 Varieties Poultry, Eggs, Pigeons, Dogs, Hares, Parrots, etc. List free. Colored descriptive 60-page book, 10c. J. A. Bergey, Box 60, Telford, Pa.

Miscellaneous Poultry

World's Best Rhode Island Reds and Imported White Indian Runner Ducks. My 1st championship pen of Reds this season is headed by 2nd Madison Square, New York, cock, and contains 1st Madison Square pullet, December, 1910, valued at $10,000.00; also 1st, 2nd, 3rd, 4th and 5th Madison Square pullets, January, 1910. The greatest pen of "Reds" ever put together. Write for free catalog. Southern Poultry Farm, Wade Hampton, Prop., Rogersville, Tenn.

Eggs from Turkeys, Toulouse and White Embden Geese. Rouen, Pekin, Muscovay and Runner Ducks. Rhode Island Reds. White and Brown Leghorns. Spangled Hamburgs. Barred, White and Buff Plymouth Rocks. Black Langshans, Wyandottes, Houdans. Pearl and White Guineas. Bantams. Rabbits, fancy Pigeons. Write for circular. D. L. Bruen, Platte Center, Neb.

Empire Poultry Yards, Fort Plain, N. Y., breeds Single Comb White, Brown and Buff Leghorns; also Houdans, Rumpless fowls, Indian Runner Ducks, Pearl Guineas, Buff Cochins, Light Brahmas. In Bantams, Black, Reds, Red Pyle, Buff Cochins and Goldon Sebrights. Winners, famous for shape, color and egg production. Eggs, $2.00 setting. Mention Fruit-Grower.

Poultry Photo Post Card, mating list and catalogue free. Stamp appreciated. Eggs for hatching from "Trio Purpose" White Wyandottes, best for show room, egg basket and market. Mammoth "Rainbow" Bronze Turkeys. "Standard" Indian Runner Ducks. Joseph Shaw, Desk B, Ostrander, Minn.

Eggs for haiching from bigh scoring prize winners. Barred and White Rocks, Buff, Brown and White Leghorns, White and Silver Laced Wyandottes, Black Minorcas, White and Buff Orpingtons, S. C. Rhode Island Reds. Write for prices. Lebanon Poultry Yards, Lebanon, Neb.

Young's Strain Single Comb White Leghorns, Single Comb Rhode Island Reds, Buff Rocks and Duck Wing Games. Bantams, $1.00 and $1.50 per 15 eggs; $5.00 and $7.00 per 100. Bred for eggs and show room. Your satisfaction is our success. E. G. Yocum, Souderton, Pa.

White Wyandottes, Rose Comb Rbode Island Reds, Barred Plymouth Rocks. For type, color and quality I can please you. Blue ribbon winners. Located here 36 years. High scoring pen eggs for hatching, $3 per 15. Satisfaction guaranteed. Wm. Feakes, Grand Junction, Iowa.

Single Comb White Leghorns, Young's and Wyckoff's strains direct. 15 eggs, $1.00; 100, $5.00. Crystal White Orpingtons, Kellerstrass strain; 15 eggs, $2.00; 100, $9.00. White Indian Runner Eggs, 12, $4.00. White Feather Farm, New Bremen, Ohio.

Beautiful swans, fancy pheasants, peafowl and other ornamental stock. Also partridges, pheasants, quail, deer, rabbits, etc., for stocking purposes. Send 4c for illustrated descriptive circulars. Wenz & Mackensen, Pheasantry & Game Park, Yardley, Pa.

Six Single Comb Breeds. Kellerstrass White Orpingtons, Buff Orpingtons, Rhode Island Reds, Barred Rocks, Partridge Rocks, Black Minorcas. Cockerels, $1 to $3. 15 eggs, 1st pen $1.50; 2d, $1. N. P. Cronk, Montour, Iowa.

Crystal White Orpingtons, Kellerstrass; R. C. White Orpingtons, White Langshans, S. C. White Leghorns, White Wyandottes, Black Minorcas, $1.50 to $2.00 per setting. Silver Spangled Hamburgs, cockerels $3.00. Selma Shanander, Pilot Mound, Iowa.

Mack's Poultry Farm—Breedere of America's best Buff Langshans and Black Orpingtons. Winning all we competed for at the big Toledo show. Eggs, $3.50 for 15. Mack's Poultry Farm, 1817 Navarre Avenue, Toledo, Ohio.

Rose Comb Brown Leghorn, Single Comb Buff Orpington, 15 eggs $1.00; 30, $1.75. Indian Runner Ducks, 13 eggs, $1.00; 26, $1.75. White African Guineas, 15 eggs, $1.25; 30, $2.00. Honey Creek Poultry Farm, Kahoka, Mo.

High Class Black Langshans. Pekin Ducks, Mammoth Bronze Turkeys. Winners, Madison Square Garden. Prices reasonable. Satisfaction guaranteed. Circular. Lorenz & Co., Springvalley Farm, Perryville, Missouri.

Buff Leghorns and Kellerstrass White Orpingtons. Prize winners at Altoona, Williamsport, Du Bois, Greensburg and Ohio State Fair. Eggs from these grand prize winners, $2.00 per 15. R. E. Giles, Coalport, Pa.

White and Brown Leghorns, White and Barred Rocks, Rhode Island Reds, several first prizes. Eggs, 75c, 13; $3.50, 100. Mary Dowell, Granada, Prowers Co., Colo.

Kellerstrass White Orpingtons, Fishel White Plymouth Rocks, that are prize winners and money makers. Eggs, $2.00 per 15; baby chicks, $25.00 per 100. Satisfaction guaranteed. John McKibbin, Goshen, Ind.

Langshans, Reds, Wyandottes, Orpingtons and Leghorns at farmers' prices. Good quality, some prize winners. Young stock for sale. Eggs, $1.00 and $2 00 per 15. Ideal Poultry Farm, Indien Springs, Ind.

Choice eggs for hatching from 52 varieties of chickens, ducks, geese, turkeys, 130 premiums at one exhibit. Largest poultry farm in northern Iowa. Stamps for catalog. E. & J. W. Trettin, Grafton, Iowe.

Buff Orpingtons, Single Comb White and Brown Leghorns, Rose-Comb Brown Leghorns, White Wyandottes, R. C. Reds. Big layers. Big payers. Write us today. A. Carrol Shaw, Box 603, Las Animas, Colo.

Single and Rose-Comb Black Minorcas. Single and Rose-Comb Reds. Eggs, stock and baby chicks, from Quincy and Campoint, Ill., show winners. South Side Poultry Yards, 601 Jackson St., Quincy, Ill.

White Wyandotte and Pekin Duck eggs, 15, $1.00; 30 or more, 6c each; best 2 pens headed by males we refused $100.00 each, 15, $3.00; 30, $5.00; quality, not quantity. Mrs. Doom, Ashland, Neb.

Eggs, $1.00 per 15; $2 00 per 40; from thoroughbred Brahmas, Rocks, Wyandottes, Reds, Minorcas, Leghorns, Hamburgs, 19 varieties. Catalog. 29 years experience. S. K. Mohr. Coopersburg, Pa.

Rocks, Wyandottes, Leghorns, Hamburgs, Toulouse, Emden, China geese; Pekin, Muscovey ducks; white turkeys, guineas; prize-winning stock. Send for catalogue. B. F. Kahler, Hughesville, Pa.

Seiple Poultry Yard. Eggs for hatching from S. C. White Leghorns, Barred Plymouth Rocks and Rhode Island Reds. $5.00 for a set of 13 eggs; $9.00 for 26 eggs. Monroe Seiple, Bethlehem. Pa.

Kellerstrass White Orpingtons, Buff Orpingtons, Black Minorcas, Columbia Wyandottes, Rhode Island Reds. Choice cockerels for sale. Eggs in season. W. S. Chalker & Sons, Waters, Mich.

Rose Comb Buff Orpingtons, Golden Wyandottes. My famous line bred strains of winter layers and show winners. Eggs, $3.00 and $5.00. Circular. Dr. R. O. Woodruff, Box A, Waterford, Pa.

Ever Best Strain. Rose and Single Comb Buff, Single Comb Black and White Orpingtons, Black Minorcas, Rhode Island Reds. Eggs for hatching. George W. Ellerman, Box 95, Piqua, Ohio.

50,000 Single-Comb White, Buff and Brown Leghorns, Minorcas, Rocks; baby chicks, eggs; Belgian hares, Collie dogs. Catalogue, stamps. Failing Poultry Farm, La Fargeville, N Y.

Single Comb Buff Orpingtons, Buff Leghorns and White Leghorns. Eggs for hatching, $1 00 per setting of 15. Also some good cockerels for sale at $2.00. Henry Y. Shirk, LaPaz, Ind.

Eggs for hatching. Exhibition pen. B. P. Rocks, $3 per 15. Utility flock $5 per 100. Toulouse geese eggs, 25c each. White guineas, $1 per 15. Mrs. I. B. Geiger, Route 2, Ida Grove, Iowa.

White Rock eggs, $3.00 per 100. Farm range White Holland Turkey eggs, $3.00 for 12. Brown Leghorn eggs (from separate farm), $3.00 per 100. Mrs. Henry Hanman, Browning, Mo.

Eggs, Hatching. Imported White Orpingtons. Exhibition Single Comb Rhode Island Reds. Utility Reds. Fawn and White. Indian Runner Ducks. Write E. L. Andrews, Maryville, Mo.

Barred Rocks. Buff and Black Orpingtons. The kind that will please anybody. Eggs and stock for sale. Write for convincible catalog. Watertown Poultry Farm, Watertown, Ill.

Silver-Spangled Hamburgs, Partridge Plymouth Rocks, Houdans, Light Brahmas, highest quality, lowest prices. Winners and breeders for sale. Eggs in season. Will Clark, Sullivan, Ohio.

Partridge Wyandottes and Mammoth Bronze turkeys. Prize-winning strains. Stock for sale. Reasonable prices. Egg orders booked now. Write Mrs. M. F. Oldfield, Buffalo, Mo.

Thirty breeds, geese, ducks and chickens. Send 3 cents for a large catalogue. Minkel & Co., Mapleton, Minn.

Rose Comb Rhode Island Reds, Columbian Wyandottes, winners wherever exhibited; heavy layers. Eggs, $1.00 to $5.00 per 15. Mating list free. A. D. Williems, Minneola, Kan.

Eggs for hatching from line bred trap nested Anconas and S. C. Brown and White Leghorns. Bred for egg production, at reasonable prices. Write to M. L. Miller, Johnston, Pa.

Pure Bred Turkeys, White Embden Geese, Guineas, Plymouth Rocks, Single Comb Brown Leghorns. Prize winners. Eggs for hatching; quality; right prices. John Garbee, Billings, Mo.

White-Crested Black Polish, White Wyandottes, White Orpingtons. Breeding pens of the best. Eggs, $5 to $10 per 15. Stock in season. Edward F. Waldron, Dighton, Mass.

White Leghorns, Rhode Island Reds; best registered Berkshires, Hogs and Pigs, Chickens and Eggs cheap. Write quick. E. A. Rogers, Meadowbrook Farm, Box F, Hixson, Tenn.

Eggs—White Runner ducks, Partridge Rocks, White and Fawn Runner ducks, Single Comb Brown Leghorns. All winning stock. Write J. E. Gault, Chippena Lake, Ohio.

Sixty Eggs, $3.00; 15, $1.00; two medicated nest eggs with each order. 26 varieties; poor hatches duplicated at half price. Circular free. Whitney & Son, Triangle, N. Y.

Barred Rocks, Brown Leghorne, Silver Laced Wyandottes and Reds. Eggs from pens, $1.50 for 15. Write for free catalog. Address Sunnyside Poultry Farm, Owensville, Mo.

Golden Wyandottes and Single Comb Buff Orpingtons. Fine winter layers, prize winning stock. Eggs, $1.25 and $2.00 per 15. Circular free. John Tuttle, Princeton, Mo.

Trapnested White Wyandottes and Kellerstrass White Orpingtons. 227 egg strain, bred from Chicago and Pittsburg winners. Eggs, $3.00 per 15. K. J. Heabler, Attica, Ohio.

Black, Buff, White Orpingtons. S. C. White Leghorns. Write for prices. Buckel Poultry Yards, West Allis, Wis.

Pearl Guinea Eggs, 25 for $3, 50 for $5, 100 for $10. Valley View Farms, Orchard Park, N. Y., Rural Box 22.

Buff Orpingtons, White Plymouth Rocks. Frank Meek, breeder and exhibitor. Winners in the great Little Rock Show. Eggs, $3.00 and $5.00 per 15. Argenta, Ark.

Stock, eggs, baby chicks. From winners at Springfield, Jacksonville, Pittsfield, Illinois, 1911. Write for circular. Southern Slope Poultry Farm, Box A, Jacksonville, Ill.

Rhode Island Whites, unequaled as layers. Also Rhode Island Reds, Rose Combs, Poland China hogs. Eggs and stock for sale. W. A. Elam, Mulberry Grove, Ill.

White Crested Black Polish, S. C. Black Minorcas and Buff Wyandottes. Stock for sale. Eggs, $2.00 per 15. Satisfaction guaranteed. Henry Yaggy, Woodburn, Ind.

Buff Orpingtons and Barred Rocks. Winners Missouri State and other large shows. Eggs, $2.50 to $5.00 per 15. Satisfaction guaranteed. J. L. Gailatin, Amsterdam, Mo.

Orpingtons, Single Comb, Buff, Black and White. Cockereis, $2 00 to $5.00. Pens, $10.00 to $15.00. Eggs, $2.50 for 15. Elk Ridge Poultry Yards, Sheller, Illinois.

Eggs, setting or hundred lots. Barred Rock, Buff Orpingtons, Reds, Indian Runner Ducks. Also Pheasant eggs. Stock for sale. Julia E. Wise, New Market, Iowa.

Rhode Island Reds, White Orpingtons (Kellerstrass), Houdans. Winter layers. Stock; eggs for hatching; trios. Write wants. D. S. Brenneman, Council Bluffs, Iowa.

Good bargains in Barred Rock pullets, Buff Orpington and Rhode Island Red cockerels. Indian Runner Ducks and fancy pigeons. Julia E. Wise, New Market, Iowa.

Infertile eggs replaced without cost. Fishel's White Rocks, $1.50 per 15; Wyckoffs S. C. White Leghorns, $1.00 per 15. Arthur Bear, Route 10, York, Pa.

If you want Orpingtons, Reds, Leghorns, Wyandottes, Rocks; males or females; we can save you money. Write us anyway. Lee Harris, College View, Neb.

Ribbons to burn, winners every show. S. and R. Comb Reds, S. C. White and Black Orpingtons. $2.50 per 15. Dr. W. H. Craft, Coalport, Pa.

Barred Rock, Single Comb Brown Leghorn eggs from fine stock, 15, $1 00; 100, $5.00; 26 years a breeder. Ed. B. Murphy, Box 9, Carmel, Ind.

Rhode Island Whites, S. C. Reds, White Cornish, Rose Comb White Leghorns. The kind that win, lay and pay. C. W. Knox, Pulaski, Pa.

Bargain Prices. All leading varieties land and water fowl. Large picture in colors and price list mailed for 10c. P. G. Shelly, Florin, Pa.

Chicks

Baby chicks, 10c to 20c; stock, $1.25 to $5; eggs, $5 per 100 up. Rhode Island Reds, both combs. White and Columbian Wyandottes, White and Buff Orpingtons, Pekin, Rouen and Indian Runner ducks, Toulouse geese, Bourbon Red turkeys. Catalogue free. G. A. Mitchell, Dept. B, Ridott, Ill.

Baby Chicks, standard bred. S. C. Rhode Island Reds, Buff Orpingtons, White Wyandottes, Barred Rocks; $2.00 dozen; 25 chicks, $3.75; 50 chicks, $7.50; 100 chicks, $15.00. Guarantee safe arrival 2,000 miles. 15 eggs, $1.00; 30 eggs, $1.50; 60 eggs, $3.00; 100 eggs, $5.00. Martin Michelson, 232 Fifth St., Aurora, Ill.

Chicks, 10c; ducklings, 15c; eggs reasonable. Don't delay booking orders. White Leghorns, Parks Barred Rocks, Pekin and Indian Runner ducks. Both light fawn and pencilled. White eggs. Circular. Premium Poultry Farm, Box 62, La Harpe, Ill.

Baby chicks, Wyckoff strain. Single-Comb White Leghorns, mated with cockerels direct from Young. $12 100, prepaid. Eggs, $4.00 per 100; baby chicks, $9.00 per 100, prepaid. Prepay on chicks only. Ohio Valley Hatchery, Ramsey, Ind.

Day old and four weeks old chicks from Crystal White and Buff Orpingtons and Barred and White Rocks. Chicks cheaper if ordered early. Free circulnr. Fred Brown, 764 W. Broadway, Winona, Minn.

100 Baby Chicks, $10.00; 100 eggs, $4.00. Illustrated folder telling all about my 600 heavy laying Single Comb White Leghorns. Ellsworth Shaw, Grand Junction, Mich.

Baby chicks of quality, White Wyandottes, White Rocks and Black Orpingtons from fancy stock. Write for circular. Burnett & Doolittle Hatchery Co., Waukegan, Ill.

Baby chicks of quality. Safe arrival guaranteed. We prepay expressage. Catalog free; 9 varieties. South Kenton Poultry Farm, Kenton, Ohio.

Ducks and Geese

Carlile's White Indian Runner Ducks, best in the West, as demonstrated at the great Los Angeles Show. I have owned practically all the original stock in America and now have the largest and finest flock on the Coast. Eggs, $5.00 per 15; $12 per 50; $20 per 100. First prize matings, $16 per 12. Satisfaction guaranteed. Book orders now and avoid disappointments. J. C. Carlile, Route 4, Box 249, Los Angeles, Calif.

Blue Swedish Ducks. Large, profitable, beautiful. Excellent layers. 38 firsts from 41 entries in 1911-12, including Madison Square and Cleveland. Fawn and White Runners. True color, racy type, record layers. Show quality. Runner eggs, $1.50 per setting, $6.00 per bundred. Catalog. Hill Crest Duck Farm, Bellville, Ohio, Box D.

Yoder's Indian Runner Oucks. First and special at Allentown show. My book on Runners 75c, 11 eggs $2.50, 30 eggs $5.00. Yoder's Partridge Rocks and Partridge Wyandottes are prize winners, 15 eggs $2.00, 30 eggs $3.50. Prices and winnings 2 stamps, Box 50, Levi D. Yoder, Dublin, Bucks County, Pa.

Indian Runner Oucks. Light Fawn and White. "Blue Ribbon Winners," in every state and territory. Heavy layers of "snow white" eggs. Shipping more than 1,000 every week for hatching. Booking orders. Don't delay. Catalog free. Mrs. Wm. Harshbarger, Waveland, Ind.

Outlay Hens. Indian Runner Ducks. Brooks-Walton white egg strain. Buff Orpington Ducks. Finest obtainable from originator. Drake imported from England. Great layers. White Orpington fowls. Eggs reasonable. Muskoday Farm, Weedsport, N. Y.

Indian Runner Ducks. Fawn and White. White egg strain. And Single Comb Reds. For size and color they have no superior. Eggs per setting or by hundred. Write for prices. Mrs. Z. T. Biggerstaff, Edgerton, Mo.

Pure White Egg Strain. Light Fawn and White Indian Runner Ducks. Ringlet Barred Plymouth Rocks, and Single Comb Buff Leghorn eggs. Correspondence solicited. J. W. Van Cleave, New Market, Ind.

Mammoth Pekin Ducks, winners at Chicago, Minneapolis, Wisconsin State Show and Fond du Lac. Eggs, $1.50; $1.00 per 12; $3.00 per 50; $5.00 per 100. Circular free. Jos. H. Kitchen, Eldorado, Wis.

Runners—English-American-White. Prize winners. Perpetual motion white egg machines, outlaying hens. Eye-opener circulars. Write your wants. Special, Reds, Partridge Rocks. J. Newell, Girard, Ill.

Fishel Strain White Runners, Walton Strain English, American Fawn and White Standard Bred and for pure white eggs none better. Thirteen eggs, $1.00 up. Wooldridge & Grape, Englewood, Ill.

White Indian Runner Ducks. Ideal shape and carriage. Prolific layers of large white eggs. Easy to raise. Stock and eggs for sale the year round. Jas. R. Snyder, Box S, Frazer, Mo.

Indian Runner Oucks, tested layers, moneymakers. Rhode Island Reds, big boned, red eyed, rich even glossy reds. Barred Rocks. Zebra barring. Reinharts Farms, Ottumwa, Iowa.

Toulouse & Embden Geese, Indian Runner Ducks, that lay white eggs. That win, too. Stock, eggs, drakes. Instructive circular for stamp. Burt McConnell, Ligonier, Ind.

Pearl White Eggs from light Fawn and White Indian Runner Ducks. Also Single Comb Rhode Island Red eggs. De Graff strain. Mrs. Ivan Jacobs, Sellersburg, Indiana.

Bred from winners. Rouen, Colored and White Muscovy, $4.00 per pair; drakes, $2.00. Toulouse gander, $5.00. White Guineas, $2.00 per pair. Ralph Wilson, Bloomville, Ohio.

Mammoth Pekin and Indian Runner Ducks. The birds for the fruit grower. Eggs, $1.50 for 12; $3.00 for 30, $4.50 per 50. Paul & Gordon Griffith, Fredericktown, Mo.

Indian Runner Ducks—Fawn and White, stock for sale. Eggs $2 per 15, $5 per 45, $10 per 100, express paid. Ducklings 30c each. K. I. Miller, Box 2, Lancaster, Mo.

Indian Runner Ducks, wonderful layers of pure white eggs; also Giant Bronze Turkeys. Prize winners. Write for prices on eggs. B. F. Morgan, Independence, Ind.

White Indian Runner and Buff Orpington Duck Eggs. Get one of these new breeds. They are mortgage lifters. Instructive circular. French & Hepp, 4358 Umatilla, Denver, Colo.

White Indian Runners, eggs $1.00 per 12. Fawn and White and English, $1.00 per 13; $5.00 per 100. Also Single Comb Rhode Island Reds. Mrs. J. W. Myers, Marion, Ohio.

Indian Runner Oucks, Light Fawn and White, S. C. B. Leghorns. Eggs for sale. Strictly fresh eggs sent out, guaranteed safe arrival. Mrs. Mary Ryan, Bloomfield, Iowa.

Buff Orpington Ducks. Great layers. Very beautiful. Booking orders. Eggs, $1.50, $2.50. 12. Indian Runner eggs, $1.00, 13. Stock for sale. J. W. Yates, Frankfort, Ind.

Indian Runners, Fawn and White. Pleased customers everywhere. Eggs, $5.00 per 100. A few drakes for sale. Very reasonable. Herman C. Volrol, Woodburn, Indiana.

Fawn and White Runners. White egg strain, $3.00, $2.00, $1.25 per 15. Valuable instructions free to customers. Write, mating list. D. L. Sheldon, Scranton, Iowa.

Genuine English Penciled White Egg Indian Runner Ducks. Catalog free; $3.00 setting. Parks bred to lay Rocks, $2.00 setting. C. K. Vanderbilt, Lyons, N. Y.

Indian Runner Oucks—American Standard—Light Fawn, White. Perpetual egg machines, white eggs; $1.50 per 15, $4.50 per 50. Mrs Clyde Myers, Fredonia, Kan.

Eggs, Eggs, Eggs. White Indian Runner Ducks (Fishel's), $6 per 12; Rhode Island Whites, best utility, fancy breed, $3 per 15. Fred Foster, Seville, Ohio.

Indian Runner Oucks, Fawn and White. Eggs $1.00 per 15. J. W. Fretz, Bosworth, Mo.

White Indian Runner Ducks. The kind that win and lay pure white eggs. Eggs, $5.00 per 15. Write for mating list. C. E. Densmore, Springwater, N. Y.

Eggs for sale from extra heavy, high scoring Pekin Ducks and White China Geese. Farm raised stock, fertile eggs. Write W. H. Sheka, Grafton, Iowa

A fine lot of pure bred White Muscovy Ducks for sale. Prices on pairs, $3.50. Eggs for sale in season; dozen, $1.50. Mary Ramsey, Manchester, Minn.

White Indian Runner Ducks. Silver Wyandottes. 1st cockerel, 1st and 4th pullet at Springfield, 1912. Write for prices on eggs. L. J. Ferrill, Farine, Ill.

Indian Runner Ducks—The kind that lay all winter. 150 breeders; eggs, $1 per 15, $5 per 100. Stock prices low. Bernard Reed, McConnelsville, Ohio.

White Indian Runner Oucks, Fishel strains, trio, $25.00. Eggs, $4.00 per 12; $7.50 per 24. Henry Schowe, Jr., New Bremen, Ohio.

Mammoth Pekin Ducks. Big winners. Best for market and easiest raised. Eggs, $5 00 per 100. Oscar Wells, Farina, Ill.

Turkeys—White Holland

Large White Holland Turkeys; 32 pound toms; 19 pound hens; 16 pound pullets. Eggs, 13, $2.50; 50, $7.50; 100, $15.00. Circular free. J. C. Hodges, Waterloo, Ind.

Turkeys, White Holland cockerels and pullets, extra fine, from prize winning stock. Eggs, five dollars per setting of ten. Fertility guaranteed. R. Barrie, Bethel, Kan.

Turkeys—Bourbon Red

Bourbon Red Turkey Eggs. Two-year-old breeders. Big frame, grond color, domestic as chickens. Fertile eggs, $3.50 per 11. Mrs. Clyde Myers, Fredonia, Kans.

Turkeys—Mammoth Bronze

Mammoth Bronze Turkeys, Missouri State first tom last year. Fine size and markings. Eggs 40-60c. Poults $1.00. Stock reasonable. Mammoth White Holland eggs for neighbor, Jas. Gladish, Pres. Leahy Mfg. Co., Higginsville, Mo.

Wild and Bronze turkeys and chickens. Eggs for hatching. Catalogue, 2c stamp, showing wild gobbler from the mountains. Valley View Poultry Farm, Belleville, Pa.

For Sale—M. Bronze Turkeys, prize winners at Minneapolis, St. Paul and Winnipeg. Write for photo and prices. C. J. Kapphahn, Route 8, Alexandria, Minn.

For Sale Large Bronze Turkeys. Prize winning stock. Toms, $7.00, eggs 30c each. Miss Irrissa Bartlett, West Milford, W. Va.

Mammoth Bronze Turkeys, the big kind eggs, $4.00 per 11. J. W. Fretz, Bosworth, Mo.

Pigeons

White, Black, Red and Blue Maltese hens. Yellow and Red Carneaux. Breeders and youngsters. I breed them. None better. Price reasonable. Lafreniere, Vineland, N. J.

Guaranteed Mated Pairs. Homers, $1.00; Carneaux, $3.00. Maltese, $3.00. 2 illustrated catalogs, 10. Pigeon Dept. Hillhurst Farm, R. F. D. Box No. 22, Orchard Park, N. Y.

Pigeons—Three pairs guaranteed extra homers, $5.00. Leg Bands, ten cents dozen. Cleaning tools, dollar a set. Kirkbride, 102 East Park Ave., Haddonfield, N. J.

POULTRY SUPPLIES

Use Wyandot White Oil. The oil that's right, for incubators and brooders. As good in the home this season as for poultry purposes. Stands inspection everywhere. Order direct from us and we will help with the freight charges. Write and we will quote you. The Wyandot Refinerlers Company, Crawford, O.

Free advice on poultry problems: Housing, feeding, management, how to treat diseases. Letters welcome. New 80-page poultry book free if you send 4c postage. The G. E. Conkey Co., Dept. No. 86, Cleveland, Ohio.

Save the chicks. Give them Bob White Diarrhoea Remedy and avoid losses. Large box 50c, post paid. Send today. Bob White Co., Ames Sta., Omaha, Nebr., Box 7.

Poultry Supplies. Send one dollar for Roup Cure recipe. Make your own Roup Cure. Sure cure. Money back if dissatisfied. C. G. Omen. Council Bluffs, Ia.

Profit and Health in Poultry. Hundreds have paid me five dollars for this instruction. Now in book for half dollar. Dr. Nathan Sanborn. Holden. Mass.

FARM LANOS FOR SALE

Arizona

Free Homesteads in the Artesian Belt. Finest fruit land. Good climate, good water, good markets, on railroad. Address Secy. Commercial Club, San Simon, Arizona.

Arkansas

Ozark Fruit and Poultry Farm

40 acres 1½ miles from Hiwasse, Benton Co., Ark. 15 acres of Ben Davis 8 years old, 8 acres 5 years old; Jonathan, Mammoth Black Twig, Maiden Blush, and 7 acres Elberta peaches 1 year old. Pears, cherries and plums for home use. No buildings. Lies level and practically clear of rock. Prospect splendid for big crop on this orchard. Price $1,600.00. $400 cash, balance in annual payments covering 5 years. Other properties. Write S. B Banks, Owner, Hiwasse, Ark.

Pike County, Arkansas where Elberta peaches make fortunes—and where genuine diamonds are being found. 150 acres—two miles from county seat fine road, fair improvements, running water, timber. Muliato soil with clay subsoil; raises corn, cotton, alfalfa. Grow as much as northern land; $20 acre cash. H. T. Buie. Murfreesboro, Arkansas.

200 Acres Elberta Peach Land adjoining the big orchards at Highland, Pike County, Arkansas. Price, $30.00 per acre cash. Green & Millwee, Prescott, Ark.

California

Best Markets, Biggest Profits are enjoyed by the Loomis grower. Seven competing shipping companies are anxious to buy his products. He can sell or ship—the world is his market. Earliest and best fruits of all varieties. 1,000 cars shipped annually. Land $60 and up. Cheapest in California. Rowell Fruit Company, Loomis, Cal.

Come to Shasta County. We have choice sediment land on Sacramento River, under irrigation ditch at $100.00 per acre, near Anderson on main line of Southern Pacific. Shasta Land Co., Anderson, Calif.

California Irrigated Lands—Famous Gridley colonies; tracts to suit; easy terms; improved farms; best homeseeker's proposition in California. Write for particulars. Gridley Land Co., Gridley, Calif.

Colorado

If you want a part of one of the very choicest tracts of fruit land on earth, where conditions are ideal for growing fruits and for a home, then send for copy of a beautiful booklet describing Morrisania Ranch, Grand Valley, Colo. This is not cheap land—it sells for $300 per acre, including perpetual water right, but it is worth the money. It may be that some member of your family needs the benefit of Colorado's climate for some form of lung trouble. Get a tract of this land and establish your home there before it is too late. The ranch contains 880 acres, and only part of it is for sale, for we will develop the remainder for our own use. Shall we send you the booklet which describes the place? Write me if interested. James M. Irvine, Editor The Fruit-Grower, St. Joseph, Mo.

Oouble Your Dollars. Buy Apple and Potato lands in Western Colorado. Government irrigation. Profit producing prices. Best climate. Reliable information. Crop statistics given under oath. Olinger & Knapp, 1712 Champa St., Denver, Colo.

700 Oenver Suburban Lots, $1.00 down, $1.00 a month. Extraordinary 45 day offer. Near city limits, city water on boulevard. Transit. Sure advance. Write immediately. Bank reference. Agents wanted. Loretto Realty Company, 1639 Champa St., Denver, Colorado. Charles F. Leimer, Manager.

We sell land in San Lula Valley, Colorado. We want live representatives in every locality. Get our proposition. Monte Vista Realty Company, Monte Vista, Colo.

Cuba

Rich soil, ideal climate. Abundant rainfall, best transportation; 20 acres, $600, $10 monthly. Map and literature free. S. O. Sanderson, 184 Palace Bldg., Minneapolis, Minn.

Florida

Homes in Healthy West Florida, $20 per acre. Part pay in crops. "Facts About Florida" free. W. S. Reeve, Pensacola, Fla.

Idaho

A fine commercial apple orchard in the Palouse country, 6 miles from Moscow, Idaho. Orchard nearly all bearing; house, barn, fruit house, tools. Will return 25 per cent on investment yearly. Address L. F. Henderson, Moscow, Idaho.

For sale or exchange—Canyon Co., Idaho, orchard. Ten acres set to apples; Jonathens, Winesaps and Rome Beauty. Address C. W. Renshaw, Rock Valley, Iowa.

Mississippi

I am offering for sale 1,840 acres of farm land in Grenada County, Miss. 200 acres in cultivation, all good fruit land or would make good stock farm; price $10.00 per acre. J. S. Houston, 737 Marquette Bldg., Chicago, Ill.

Missouri

120 Acres Christian County Land, about 600 bearing fruit trees, plastered house, log house barn; 2 fine springs. Price $1,600. Cash. C. H. Fitzgerald, 3666 Finney Ave., St. Louis, Mo.

We have for sale some first-class corn, clover and bluegrass farms in Cass County, Mo. Can please you in a home. Jot M. Wilson & Son, Harrisonville, Mo.

New Mexico

Famous Farmington Fruit District, in San Juan Co. Sixty acres commercial apple orchard set out one year ago, upon investigation this orchard will be found a big bargain. Land, cash, $5,400. Water right, about $40 per acre; in irrigation district; 20 years' time at 6 per cent. C. A. Ransom (owner), Aztec, New Mexico.

North Carolina

Come South. Mountain section, altitude 2,250 feet. Mild winters, cool summers. Dairying, fruit growing, diversified farming. Cheap lands. Information Bureau, Hendersonville. N. C.

Oregon

Rogue River Valley. Best Medium climate on earth. Coldest this winter, 21 degrees above. Get away from your winter blizzards and extreme heat of summer. The very best pear, apple, grape, alfalfa, dairying and poultry land, at reasonable prices. Elegant fishing and hunting. Write. A. N. Parsons, Grant's Pass, Oregon. No. 354. Bank references.

Wasco County, Oregon. Fruit and grain lands cannot be excelled anywhere in the Northwest. Climatic conditions ideal, insuring abundant crops annually. Transportation facilities unsurpassed. R. H Weber, The Dalles, Ore.

For Real Estate and Investment, farms, stock ranches, fruit farms, dairying, timber tracts, in an excellent climate, write W. J. Moore, Brownsville. Linn Co., Ore.

We claim that the Umpqua Valley is "The Best in the West." Let us tell you why it is the best for you. Roseburg Commercial Club, Roseburg, Oregon.

Texas

Texas Gulf Coast Fig or Orange Orchard pays for itself in four years. Ideal climate and place to live. Best social advantages. Fine combination with poultry. Good markets. In order to get just what I wanted for myself and some friends, had to take a larger piece than we need, therefore want a few good neighbors to come in with us. Postal will bring you full particulars. J. Hart Welch, Box F, Douglaston, Long Island, N. Y.

Utah

Alvin, Texas, chnice orange, fig, strawberry, truck and general farming lands. The best of soil, climate, markets and social advantages. Sea breezes. Send for free booklet. E. C. & J. F. Webster, Alvin, Texas.

Fruit Farm for Sale—10,000 trees, 470 acres all under hog proof wire fence, 3 miles from city, with good schools and roads. Address L. B., No. 54, Texarkana, Texas.

Virginia

Look ahead five years—What's in store for you? Would a nice, cosy home, and a $3,000 income per year in this beautiful valley for life look good? A ten-acre apple orchard tract planted to 500 red-apple trees—which will cost you a few dollars now and a few dollars each month—will insure your future home, income and happiness. Write us and get "Free Booklet," with facts. Shenandoah Valley Appie Lands Co., Waynesboro, Virginia.

For Sale—A bearing Albermarle Pippin and Peach orchard, in Albermarle Co., Va., the best fruit section of the U. S. Five consecutive crops and very promising for this year. The Albemarle Pippin is the late Queen Victoria's favorite of all apples and is the highest in quality. A beautiful land in the most beautiful belt of the U. S. A chance. Write Sam'l B. Woods, Charlottesville, Va.

Washington

Be independent and own your own home in the Walla Walla Valley. Unequalled opportunities for the small tract farmer, abundance of water, rich soil and ideal climatic conditions. The home of the Northwestern apple. Write for information and beautiful free illustrated booklet "C." The Commercial Club, Walla Walla, Washington.

REAL ESTATE AGENTS

Cash for your farm or business. I bring buyers and seller together. No matter where located, if you want to buy, sell or exchange any kind of property, anywhere, address Frank P. Cleveland, 994 Adams Express Building, Chicago, Ill.

Sell your property quickly for cash, no matter where located. Don't pay big commissions. Particulars free. Real Estate Salesman Co., Dept. 28, Lincoln, Neb.

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace Bldg., Minneapolis, Minn.

NURSERY STOCK

Pedigreed Nursery Stock—If you want to plant trees that are sure to bring big returns in the future, write for our great new book, "Pedigreed Horticulture," the handsomest catalog of the year, giving complete information regarding pedigreed trees. We propagate all nursery stock from individual trees which have a record of bringing in big profits from the orchard. Do not fail to investigate. Write today. Our book is free. Winfield Nurseries, Winfield, Kan.

American Everblooming Hydrangea, the best hardy flowering shrub ever introduced. Hardy in Canada. Strong plants that will bloom the first year, 25 cents each; larger plants, 35 cents each, 3 for $1.00, prepaid. Send for our "Choice Little List" of ornamentals. It's free. E. Y. Teas & Son, East Plum St., Centerville, Ind.

If you are interested in Cherry trees, the kind that produce results, buy Western New York trees, direct from the grower. No scale. Write for prices; other nursery stock. C. W. McNair Nurseries, 300 acres, Dansville, N. Y.

Gibraltar—Canada's New Black Raspberry. Large and hardy. Greatest yielder at experimental farm; six strong plants, 50c; fifteen, $1.00, postpaid. Send for circular. N. E. Mallory, Blenheim, Ont., Canada.

Oahlias, named kinds, $1.25 per 100. Gladiolus, good mixture, same price. 1-yr. Cherry, Montmorency and Early Richmond, 3 ft. up, 10c each, F. O. B. C. W. Hoffman, Route 13, Dayton, Ohio.

Grow $3,000 in your back yard as a side line, while you work—while you sleep. Raise Golden Seal. Sure crop. No hazard. Rising market. Information for stamp. Chas. G. Dodge, Albany, Wis.

Raise Ginseng, $1 per square ft. of ground, $25,000 on one-half acre; grows anywhere; one-half city lot a bonanza. Sheboygan Ginseng Gardens, Sheboygon, Wisconsin.

You should have our catalogue just from press. All kinds fruit trees and plants cheap. Stock guaranteed. None better. Sunshine Nurseries, Corydon, Indiana.

Plant good trees. We have a lot of fine trees for sale at prices that will please all that need trees. Louisiana Star Nursery, Plain Dealing, La.

Allen Peach (New) big yellow freestone, free catalog of all kinds of nursery stock. W. A. Allen & Sons, Geneva, Ohio.

BULBS

Gladioli—"Peace," the most beautiful white in existence. Many other varieties of exceptionally high quality. Write for illustrated catalog. Arthur Cowee, Box 25, Berlin, N. Y.

FRUIT PACKAGES

Wright's Fruit Package Co. Berry boxes, crates, apple boxes, fruit packages. Ewald's folding berry boxes beat them all. West Minneapolis, Minn.

SEEDS, PLANTS, ETC.

Special to gardeners and truckers—We are making extensive preparations for the coming plant season, spring, 1912, and will have a fine list of the following to offer: Lettuce, in five varieties; cabbage, all the leading kinds; peppers and eggplants, pot grown and otherwise transplanted; cauliflower, celery. Special attention is given the growing of celery plants of golden self-blanching French stock. Tomatoes, all the leading varieties, transplanted and pot-grown plants. These are money-makers and we shall be pleased to receive inquiries and give best possible prices to large buyers. We have extensive green houses and hotbeds and truck 200 acres. Fox-Hall Farm, R. F. D. No. 2, Norfolk, Virginia.

Pure unwashed seed of Halbert Honey and new shipping watermelon, Rubber Rind, direct from the originator. Write for prices. H. A. Halbert, Originator, Coleman, Texas.

Early cabbage plants; fine; mail, 60 cents 100. Express, $2.50 1000. Firmest shipping strawberry grown. Dozen, 50 cents. Mark T. Thompson, Richmond, Va., originator.

Want Asparagus Plants? We offer the best to be found at prices that will interest you. Perry Nursery Co., Perry, Iowa.

Seed Corn. Reid's Yellow Dent and Boone County White, per bu., $2.00. New Kherson Seed Oats per bu., 80c. F. M. Riebel, Arbela, Mo.

AGENTS WANTED

Local representative wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L420, Marden Building, Washington, D. C.

POSITIONS WANTED

Wanted—Position as orchard manager by agricultural college graduate; three years government expert, ten years' orchard experience. Address S. S., care of The Fruit-Grower.

HELP WANTED

Wanted—A man or woman to act as our information reporter. All or spare time. No experience necessary. $50 to $300 per month. Nothing to sell. Send stamp for particulars. Sales Association, 790 Association Building, Indianapolis, Indiana.

Wanted—A good homeless woman or cook to keep house. Must know how to cook. German preferred. Fred Huecker, Route 1, Bunceton, Mo.

FOR SALE

Sacrifice Sale on second hand automobiles, trucks, tires, etc. Write us for particulars; new four cylinder touring cars below manufacturer's cost. Box 275, Burlington, Wis.

For Sale—Niagara gas sprayer, 200 gallons, nearly new; $75. Sunny Slope Fruit Farm, Ludington, Mich.

LIVE STOCK

O. I. C. Swine. Pigs 8 to 10 weeks old a specialty. Prices right, 30 years experience. The great book, "Raising Hogs for Profit," 140 pages, price $2.00 only. Order this book today, if you don't like it return it and get your money. M. L. Bowersox Co., Route 4, Box 9, Bradford, Ohio.

Red Polled Cattle. Bulls of serviceable age. From good milking stock. Young calves and cows. Barred Rock chickens. Clyde M. Worley, Route 2, Mercer, Pa.

Milch Goats—Swiss and Spanish breeds. G. H. Wickersham, 1244 St. Francis Ave., Wichita, Kansas.

DOGS AND PET STOCK

Scotch Collie Puppies. Pedigreed stock. $5.00 and up. Dog, Hare and Poultry catalogue. Belgian book, 5 stamps. Failing Poultry Farm, La Fargeville, N. Y.

Shetland Ponies or any of the leading breeds. Cattle, sheep, hogs or dogs. Send 4c for illustrated catalog. J. D. Stodghill, Shelbyville, Ky.

Collies for farmers. Pedigreed stock, pups $7.50 to $10.00; grown dogs, $15.00 up. Several bred females. W. D. Weaver, Harrisonburg, Va.

PATENTS

Patents Procured and Sold. All countries; inventions make fortunes; manufacturers seek my clients' patents; send sketch of your invention today; book free. H. J. Sanders, 360 Crilly Building, Chicago, Ill.

Valuable Free Book on Patents, telling how to protect and turn your ideas into gold, sent free. Fitz Gerald & Co., 821 F St., Washington, D. C.

Send For Free Booklet—All About Patents and Their Cost. Shepherd & Campbell, 500M Victor Bldg., Washington, D. C.

MISCELLANEOUS

Free—"Investing for Profit" magazine. Send you name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine. It is worth $10 a copy to any man who intends to invest $5 or more per month. Tells you how $1,000 can grow to $22,000. How to judge different classes of investments, the real power of your money. This magazine six months free, if you write today. H. L. Barber, publisher, R434, 20 W. Jackson Boulevard, Chicago.

Sulphur—We can supply your requirements promptly at the lowest prices, in barrels and sacks. Our sulphur is the best and cheapest that can be gotten, for making lime and sulphur solution. Write for prices. Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

Want Information?

If you want information of any kind, any place, if you want to buy anything of any kind, write us. National Information & Buyers Agency, 1426 East 22nd Ave., Denver, Colorado.

Kodak Films Developed 10c per roll, any size. Prompt attention given mail orders. Prints 2¼x3¼ to 3¼x4¼, 3c; 4x5 to 3¼x5½, 4c. J. M. Manning, 1062 Third Avenue, New York City, Box M.

Have you read "How to Succeed?" It is the greatest satire ever written on the get-rich-quick craze, 15c postpaid. A. Ruhnau, Dept. 10, 280 Columbus Ave., New York, N. Y.

Paper Pots will give you beans, melons, corn and cucumbers three weeks earlier and they are fine for strawberry plants. Crosby & Son, Catonsville, Md.

Peach Blossom Lotion, whitens complexion, preserves youthful coloring, prevents premature lines. Not oily. 25 cents. J. Cox & Co., New Milford, Conn.

Lime and Sulphur Solution five dollars per bbl. F. O. B. cars Haseltine Station. Address Lincoln Haseltine, Springfield, Missouri.

For Boys *and* Girls

There's an offer of special interest in an advertisement on page 12 of this issue of The Fruit-Grower.

READ IT NOW

RUSTING OF ASPARAGUS

Disease Appears in Early Summer Causing the Stalks to Shrivel and Die Early in Fall

The fungus which causes the rusting of asparagus stalks came to America from Europe. It has been known there for more than a century, but had caused little trouble. With its appearance in this country less than twenty years ago, the changed conditions caused it to assume vast importance and is now the most troublesome disease of asparagus.

The disease appears upon the stalks early in the summer, appearing first as long yellowish lines, either side of which is bordered by fragments of the thin skin that covers the stalk. A little later these thin lines will change to small patches, and perhaps well marked lines that are a little deeper brown in color. Towards fall the spots increase in number and change in color to a blackish brown. While these spots are developing and going through their changes, the stalks shrivel around the diseased areas, and where the attack has been severe the stalks will shrivel and die several weeks before they should mature.

ASPARAGUS RUST.

The canes on the left were stunted and killed by rust. The cane on the right was free from the disease. —Photo from Missouri Experiment Station.

These patches which appear on the stalks are masses of spores which are capable of reproducing the disease on other stalks. They are very easily shattered out of the patch in which they are formed, and are carried by the air for some distance. The yellow and orange colored patches develop spores which germinate immediately, but the black spores which form late in the summer, are for the purpose of tiding the fungus over winter, and will remain dormant until the following season.

Some varieties of asparagus, such as Palmetto and Argenteuille are considered as being more resistant to attacks of rust than is such a variety as Conover's Colossal. Yet none of the varieties that are now being grown on a commercial scale are as resistant to attacks of rust as could be desired. From the work which is being done by the experiment stations it is to be expected that we shall shortly have a variety of asparagus that is practically rust proof.

But in the absence of such a variety means must be adopted to protect asparagus, in so far as possible from injury by this fungus. Bordeaux mixture is the most effective means so far discovered for controlling this rust, but on account of the glaucous condition of the asparagus stems it will not stick well, unless containing some material that makes the solution more adhesive. This is obtained by adding to each forty gallons of bordeaux a mixture made especially for this purpose. This consists of resin, 5 lbs.; potash lye, 1 lb.; fish oil, 1 pint; water, 5 gallons. Heat this mixture over a slow fire until dissolved, and stir until well mixed. Add two gallons of this to ten gallons of water; mix well and add to the bordeaux.

In the western states, particularly in California, it has been found that spraying the plants with sulphur, either in the form of a dust or liquid, is very efficient in preventing rust. In the California fields a circulation of air around the plants, by having the rows wide apart is regarded as an important aid in preventing rust. This combined with thorough cultivation and fertilization to keep the plants in a vigorous condition enables them to better withstand the attacks of rust. The Missouri Experiment Station found that the maintainence of the plants in a thrifty condition was the most effective means of preventing rust. This was done by manuring and irrigating. The rows which were heavily manured in the spring, and then watered during the dry portion of the summer remained entirely free from any trace of the rust, but adjoining rows left unirrigated were destroyed early in the season by the disease.

Canning and Canned Foods.

A visit to the grocery store impresses one with the fact that canned foods form one of the chief means by which we mortal men are given strength and nourishment to perform feats that could not be attained were it not for the much abused tin can. The shelves in every grocery store are piled high with containers holding all varieties of vegetables, fruit, fish and meat, all arranged in a tasteful manner, wrapped in labels that represent the highest art of the lithographers and printers.

Did the thought ever occur to you of the magnitude and immense proportions the canning industry has grown to be? At the breaking out of the Civil war a few men were engaged in a desultory way trying to gain a foothold in the canning business. To find a market for these goods was a hard proposition, but the war gave the business an impetus in creating a demand in a limited way for canned foods, but this was sufficient encouragement to establish the business on a firm footing.

In the fifty years since the war the business of putting food products into cans has become one of the greatest industries of the country.

We encircle the globe with cans containing corn, tomatoes, peas, and forty or more delicious fruits, vegetables, and other condiments. Every vessel leaving our ports carries tons of vegetables to feed the passengers in transit. Railroad trains are rumbling across the country loaded with canned foods. The armies of the whole world are being fed on the contents of tin cans. Heinze's 57 varieties and Van Camp's Pork and Beans are familiar objects in every country inhabited by mortal man.

The successful pursuit of Peary and Amundson could never have been attained were it not for the American canned foods. The rugged miners searching Alaska for the precious metal were sustained in their work by the products of the American farm placed in cans and made a part of the diet of these venturesome wanderers.

Seven hundred and twenty million cans of tomatoes, sweet corn and peas were filled and consumed in this country during the past year, thereby imparting health, vigor and usefulness to the partakers of these food products.

No adulteration or deleterious substances are allowed to be used in any canned food offered for sale to the American consumer in these days, thanks to the watchful care of Dr. Wiley, who has recently resigned his office as chief of the Bureau of Chemistry of the Agricultural Department at Washington, D. C.

"Canning in the Home," however, has not always been as successfully carried on as it has among the commercial factories. The chief reason for this has been from the lack of proper equipment to thoroughly sterilize the fruit or vegetable being cooked. Certain vegetables are very impervious to the heat; that is, it takes a long time for the proper degree of heat to penetrate the center of the article being sterilized. We know by past experience it is for the lack of sufficient heat that moulds form in canned articles. The spores are alive and are at work, which must cause the food to spoil.

Cooking canned foods in tanks or wash boilers one can only obtain 212 degrees of heat. This is not sufficient to kill the germs that permeate everything we take into our bodies.

Most all the vegetables, some varieties of fruit and all kinds of meat require a much higher degree of heat than that at which water boils at the sea shore, this being 212 degrees. The only way to obtain this heat for sterilization purposes is by steam under pressure.

Secure a steel boiler with a cover that can be made steam-tight. With this in your possession you have the necessary equipment to safely put in cans food products which may be kept if so desired for months or even years.

These results can not be obtained in any other way. The only secret of the canning business, as conducted at the present time, is sufficient heat to thoroughly sterilize anything you may wish to place in cans.

Monroe, Mich. H. J. N.

Tomatoes for the Cannery.

Several subscribers have asked for information about the growing of tomatoes for the canning factory. Several good articles have been published along this line, but new ideas, experience and suggestions are coming up all of the time.

We want to hear from those of our readers who have had experience along this line as to the yield of tomatoes, manner of cultivation and how the fruit is gathered and hauled to the cannery, together with the gross and net profits from such a crop.

Many have tried growing tomatoes and other vegetable and fruit crops for home canning. What has been your experience? Will a home canner actually help in saving what might be otherwise a waste and change a loss into a profit? Tell us about your experience, and we will pay liberally for your article when published.

In speaking of dishonest packing, J. H. Hale says: "Just understand it now and forever, you get paid for the inferior fruit and you give the buyer the good fruit all the time. You can't fool the public. They buy the inferior fruits in the package, and the only one you fool is yourself."

When anthracnose appears in the bean patch, it is better policy to make the planting the next year on some other plot. The disease lives in the soil and is transmitted to the plants the next year. Rotation is an aid in control.

Ask your neighbors to subscribe for The Fruit-Grower. They'll thank you.

The Poultry Raiser's Opportunity.

The old-fashioned winter which was experienced through the Middle West during 1911-12 has put a severe crimp in the chicken industry and those who have studied the situation assert that poultry and eggs will be higher this year than they have been for twenty years.

This is bad news for the unfortunate city dweller who has to buy his chickens and eggs at the restaurant or grocery store, but if proper action is taken it means a wonderful money making opportunity for the chicken raiser.

More people will go into chicken raising this year than ever before or we miss our guess. They will enter this industry in order to secure the big profits which the unusual conditions have created. From time immemorial it has been the history of commerce that an unusual demand has created an unusual supply. This keeps supply and demand within speaking distance of each other and prevents prices from going so high that no one can afford to pay them. But there is always a golden harvest for those who get in first when there is a greater demand than can be supplied, as is the case with poultry and eggs at the present time.

The winter has been so cold that the hens did not lay and the storage houses did not put in their usual supply. When the eggs which they stored in previous years being to run short, the public will be up against a raise in prices. The supply of spring chickens will be short this season, too, because the late spring has kept the hens from brooding.

All things considered, as a straight business proposition, the merits of a good incubator deserve serious consideration this year. The incubator is not affected by seasons, it "broods" whenever you light the lamp and put some eggs in the tray. Many good poultrymen consider the incubator superior to the hen hatching at any season, but this year, when the hens are on a strike, it is especially worth a good honest trial.

The incubator is no longer the hazardous instrument it once was. Experts have been working on this problem of artificial hatching for some years. As a result there are now on the market several good incubators which will hatch a sufficient percentage of the eggs to make incubator hatching profitable. With a machine hatching 90 per cent of all fertile eggs the owner of an incubator can make enough in two hatches to pay for his machine and have a liberal profit besides.

This is true at any time, but this year by reason of the scarcity of poultry and eggs, two hatches will show a clear profit on an even smaller hatch, besides paying for the incubator.

This year's poultry and egg famine will have accomplished an important result if it teaches the farmer the commercial importance of the hen and the value of an incubator on the farm. The sale of poultry and eggs amounts to several million dollars annually, yet farmers have persisted in regarding chickens as a side issue, scarcely worth a busy man's time.

Farmers have spent large sums of money in the purchase of labor and time saving machinery for their farms but have given no consideration to a machine which will enable them to hatch chickens at any time of the year with less trouble than hens would require and at the same time keep their hens laying. One 100-egg incubator will hatch as many chicks as ten hens and requires only one-tenth as much attention. Larger machines will do even better in proportion. Besides you keep those ten hens busy laying and this means at least six eggs a day, or ten dozen for the three weeks that it requires to hatch a setting of eggs. Ten dozen eggs at 28 cents a dozen is $2.80 that you would not have had if you had allowed the hens to do the hatching. This egg profit is over and above what you make from the chicks hatched in the incubator.

This reads like a pretty strong boost for the incubator manufacturers, but we want to assure you that we have no interest in any incubator. There are a number of machines on the market which will produce results warranting their purchase and this paper has no interest in directing your choice other than it would have you select an incubator made by a reliable manufacturer so that you may not be disappointed in the results.

But as a publication interested in furthering the prosperity of the farmer, we are anxious to have you get some incubator. These machines are no longer in the experimental stage. The incubator principle has been tried out and has been found efficient. Many machines are producing good hatches and some manufacturers are guaranteeing the hatching ability of their respective incubators.

Under these circumstances, and especially in view of the famine this year, every farmer who does not already own all the incubators he can attend to, should look into this question. Any incubator manufacturer will be glad to send a catalogue and complete information if you ask him, either in a letter or on a postcard.

Indian Runners.

We became interested in Indian Runner Ducks and decided to get a flock and test their laying qualities from a farmer's standpoint, as compared to good leghorns. We wanted to be sure to get a strain that laid white eggs, so we bought our eggs for setting from English bred birds. These eggs were the best to be obtained in this country, and of genuine English bred, white egg laying strain. Our object in getting this variety was to avoid green eggs.

From our first settings we reared forty females in the summer of 1910. They were hatched during the middle of June and given the same care we gave our leghorns. They had free range and free access to drinking water. These birds grew three times faster than the chickens, and we were surprised on Thanksgiving to get the first egg.

The birds were put in a shed for winter and given an egg producing ration, fed wet. Eggs began to come, and kept coming until spring, when the birds were turned out on a piece of land not fit for crops, and where they had free range. These forty birds laid on an average of twenty-five eggs each per month for six months, and as there is a strong demand for their eggs for breeding, we sold all the eggs they laid. After paying the expenses, we cleared over $10 per head from the forty birds in six months.

For several weeks during the summer these birds got their living by picking up the shelled grain in the oat field and wheat fields. Bushels of grain was shelled out by the harvesting machinery, and when these ducks found it there was nothing would stop them until no more grain was to be found.

How they would pull up the worms in the alfalfa field after a rain! The hens would run for shelter when a rain began, but the ducks delighted in being in the rain, and they would work like beavers, always going home with a full crop and contented. They were kept shut up until nine o'clock each day so their eggs could be gathered.

Brooding was done by Plymouth Rock hens, confined in little coops made out of berry crates, over the top and three sides of which tarred felt paper was tacked; with one side left open and a few lath nailed across to confine the hen. Each hen was given 15 ducklings. The coops were placed on the lawn and moved frequently. It was less bother than is usually the case with chickens.

C. K. VANDERBILT.

New York.

Fowl Cholera.

The symptoms usually noted are as follows: The bird begins to mope, remains on the roost with feathers ruffled, head down, and wings more or less droopy; the bird presents a "ball" appearance. The bird is weak, and diarrhoea is present. The discharge is of a greenish-yellow color. The bird usually lives from three days to a week.

We have studied this disease and conducted experiments with it in chickens, turkeys and ducks.

When the abdominal cavity is opened, the liver will be noted to be much larger than normal, and darker. The spleen may be enlarged. The intestines are congested and may appear inflamed.

As to treatment: The henhouse

Protect Your Poultry

from all kinds of weather—rain and snow, heat and cold. To do so, you need a roofing for your poultry buildings that is rain-proof, snow-proof, heat-proof, cold-proof, time-proof and fire-resisting. RU-BER-OID is all of these. It lasts longer than metal or shingles, is easier to apply and costs less.

RU-BER-OID

(Accent on the "RU" and always spelled with one "B")

is the cheapest roofing known, considered from the standpoint of 10 or 20 years' service. It is the original smooth surface, ready-to-lay roofing. It is made of wool fabric, saturated and coated with RU-BER-OID Gum.

When buying roofing always demand RU-BER-OID and remember, unless the RU-BER-OID Man is shown on the outside wrapper, the roofing is not the genuine RU-BER-OID. The RU-BER-OID Man is your protection. Look for him.

KA-LOR-OID (Colored Ruberoid) is the only permanently colored prepared roofing—THREE COLORS: RED, GREEN, BROWN.

Trade Mark Reg.

We want every reader of this excellent publication to send at once for book, "Around the World," containing illustrations from every nook and corner of the globe, and FREE samples.

THE STANDARD PAINT CO.

100 WILLIAM STREET NEW YORK

Branches: Boston, Philadelphia, Chicago, Kansas City, St. Paul, Denver

LICE PROOF NESTS

GALVANIZED STEEL KNUDSON PATENT

Get Rid of Lice and Mites by equipping your Poultry Houses with these wonderful sanitary nests. They cannot get out of order and will last a lifetime. You really pay for Knudson Nests whether you buy them or not; if you don't buy them the lice and mites will take the price of them out of your profits in a short time. Regular price $3.90 per set of 6 nests. Special Price, $3.50 per set, 3 sets (18 nests) for $10.00. Send for free catalog of Galvanized Steel Brood Coops with Runs, Chickfeeders, etc. Address

KNUDSON MANUFACTURING COMPANY, Box 304 St. Joseph, Mo.

The Safe Investment of Your Money

A company that has withstood the test of time for fifteen years, growing stronger each year through prosperity and panics, is a safe place for your funds. Our record is one of uninterrupted success for a long period under one management, with increasing strength and security assured. Our

7% Gold Bonds

provide an absolutely safe investment with a fixed income. Interest is payable semi-annually. These bonds are in the denomination of $100 and have coupon attached. They are secured by first mortgage on our real estate and all other property, including The Fruit-Grower.

If you are considering the investment of funds, the security of principal is the first requirement and we can satisfy you, as we have many other readers of The Fruit-Grower, who are now drawing interest on our bonds. Send check for the amount you have to invest and we will forward the bonds by registered mail or express; or we will send the bonds to your banker and you may give him the money for them. Write today for some of these bonds. We refer you by permission to the First National Bank of St. Joseph. Address

THE FRUIT-GROWER, St. Joseph, Mo.

PREVENTION

White Diarrhoea Can Be Prevented and Cured

After years of experiments we have discovered a sure cure—or money back

25c Package 6 Packages, $1.00

Prevention is not a cure-all. It only prevents and cures White Diarrhoea in baby chicks and Cholera in older fowls. One ounce of prevention is worth tons of cure. In tablet form.

PREVENTION CO.

Box 1127 Atlantic City, N. J.

Agents Wanted

REFUND YOUR MONEY IF IT FAILS

HACKETT'S GAPE CURE

KILLS THE WORM AS WELL AS THE GERM

It's a powder. The chicks inhale it. Whole brood treated in 5 minutes. Ask your dealer for it or send 35c for full sized package, postpaid. Address Hackett's Gape Cure Co., Hillsboro, Md., Dept. F.

PERFECTION SANITARY CIRCULAR METAL BROOD COOP

made entirely of galvanized iron which will last a life time. They are properly ventilated, and are Rat, Mink, Weasel and Skunk proof. Just the coop you are looking for. Write for circular & special introductory prices.

Perfection Metal Brood Coop Co., Warsaw, Ill.

PFILE'S 65 Varieties

LAND and Water Fowls. Farm-raised stock, with eggs in season. Send 2c for my valuable illustrated descriptive Poultry Book for 1912. Write Henry Pfile, Box 617 Freeport, Ill.

Crown Aluminum Leg Band

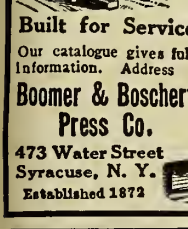
fits any chicken or turkey leg. 50 for 35c, 100 for 60c. Pigeon bands or rings 50 for 35c, 100 for 60c. Each band or ring is stamped with number and one letter. Prices postpaid.

A. TORGE, 1251 35th Street. Milwaukee, Wisconsin

Warranted to Give Satisfaction.
Gombault's
Caustic Balsam

Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address
The Lawrence-Williams Co., Cleveland, O.

ABSORBINE
Will reduce inflamed, strained, swollen Tendons, Ligaments, Muscles or Bruises, Cure the Lameness and stop pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone. Horse can be used. $2 a bottle delivered. Describe your case for special instructions and Book 2 E free.
ABSORBINE, JR., the liniment for mankind. Reduces strained, torn ligaments, enlarged glands, veins or muscles—heals ulcers—allays pain. Price $1.00 a bottle at dealers or delivered.
W.F.YOUNG, P.D.F., 34 Temple St., Springfield, Mass.



CIDER PRESSES
and other machinery for
CUSTOM CIDER MILLS
Built for Service
Our catalogue gives full information. Address
Boomer & Boschert Press Co.
473 Water Street
Syracuse, N. Y.
Established 1872

CIDER PRESSES
THE ORIGINAL MT. GILEAD HYDRAULIC PRESS produces more cider from less apples than any other and is a
BIG MONEY MAKER
Sizes 10 to 400 barrels daily, hand or power. Presses for all purposes, also cider evaporators, apple-butter cookers, vinegar generators, etc. Catalog free. We are manufacturers, not jobbers.
HYDRAULIC PRESS MFG. CO.,
(Oldest and largest manufacturers of cider presses in the world.)
51 Lincoln Avenue, Mount Gilead, Ohio

MONARCH CIDER HYDRAULIC PRESS
Proved capacity, great strength, all sizes. Write for FREE catalog today.
Also Gasoline and Steam Engines, Threshers, Saw Mills. Get our prices.
MONARCH MCHY. CO., 642 Hudson Terminal, New York

MAKE BIG PAY DRILLING WATER WELLS

Our Free Drillers' Book with catalog of Keystone Drills, tells how. Many sizes; traction and portable. Easy terms. These machines make good anywhere.
Keystone Well Works
Beaver Falls, Pa.

Make $25 to $50 Weekly
selling the Automatic Combination Tool in your home county. A Fence Builder's Tool, Post Puller, Lifting Jack, Vice, Wrench, etc. Used by Farmers, Teamsters, in Factories, Mills, Mines, etc. Weight 24 lbs. Capacity 3 tons. No experience necessary. Free instruction. Write for special offer to live agents. Send no money. Name county where you live.
AUTOMATIC JACK COMPANY
Box 99 Bloomfield, Ind.

Don't Wear a Truss
FREE
STUART'S PLAS-TR-PADS are different from the truss, being medicine applicators made self-adhesive purposely to hold the parts securely in place. No straps, buckles or springs—cannot slip, so cannot chafe or compress against the public bone. The most obstinate cases cured. Thousands have successfully treated themselves at home without hindrance from work. Soft as velvet—easy to apply—inexpensive. Awarded Gold Medal. Process of recovery is natural, so no further use for truss. We prove what we say by sending you Trial of Plapao absolutely FREE. Write TODAY.
STUART'S ADHESIVE PLAS-TR-PAD
PATENTED SEPT. 12 1908
TRIAL OF PLAPAO
Address—PLAPAO LABORATORIES, Block 220 St. Louis, Mo.

and yards should be cleaned thoroughly. The house, and so far as possible, the yard, should be sprayed once a day with a five per cent solution of carbolic acid, zenoleum or creolin. Birds should be watered from drinking fountains. These should be cleaned and disinfected once a day, using disinfecting solution the same strength as for house and yards. The feed should be given in troughs which are so constructed as not to allow stepping into them. These should be cleaned and disinfected once or twice a day. As the germs escape from the sick birds from the discharge, the birds, as soon as noticed to be ailing, should be destroyed and burned, or at least separated so as to prevent further distribution of the germs.

As treatment sulphocarbolate tablets containing the sulpho-carbolate of calcium, sodium and zinc, have given us the best results in our experimental work. Vaccination has also been successfully carried on.

B. F. KAUPP.

Colorado Agricultural College.

Getting Started With Indian Runner Ducks.

The February number of The Fruit-Grower contained a short article which I wrote concerning my success with Indian Runner ducks. Since then I have received many letters from people who wanted to know various things about these ducks, their care, feeding, etc., and especially how to get started raising them. I had no idea that so many members of The Fruit-Grower family were interested in ducks nor did I realize that the family was so widely scattered, until I heard from fourteen different states and one foreign country. In this article I wish to discuss a few of the points on which information is most often sought.

Many want to know which is best to start with, eggs or stock. For the beginner of moderate means, the cheapest and most satisfactory way is to buy a few good eggs and set them under hens. If you buy a pair or trio of stock, you can only set a few eggs at a time and will have a number of different sizes of youngsters. The number of coops and yards—and in consequence the amount of work—is thus greatly increased.

If you insist on getting stock, better wait until toward fall and buy some young stock. You can get them for about half what mature birds will cost now and you will be all ready for business next spring. Just now good breeding stock is hard to get, as these are the poultryman's harvest days and he doesn't care to part with any good layers.

Another good way to begin is by the purchase of baby ducks. A great many have asked about this branch of the business. The usual questions are: "How old are the ducks when shipped?" and "Will they live to travel any great distance?" The ducklings are shipped as soon as they are dry after hatching. They will travel a number of days and arrive in good condition. I know one breeder in Maine who guarantees safe delivery anywhere east of the Rocky Mountains.

To some it may seem cruel to start the little fellows on a long journey without feeding them, but it is misplaced and sometimes fatal kindness to feed them. Nature has provided them sufficient food stored in their bodies to last two or three days after hatching, and under no circumstances should they be fed until at least 36 hours old. If you decide to purchase eggs for hatching, they should be unpacked as soon as received and placed where the temperature will be from 40 to 60 degrees Fahrenheit. Turn them every day and keep covered with a cloth. They should be allowed to stand about 24 hours before being placed under hens, but should not be kept longer, if possible to avoid it.

Duck eggs require a great deal of moisture for successful hatching. It it a good plan to place a pailful of earth in the bottom of the nest box and sprinkle it well before the straw is put in. Early in the season the eggs should be sprinkled three or four times during the fourth week with water at about 110 degrees. In very hot and dry weather sprinkle daily from the seventeenth day until the eggs commence to hatch. Change the straw at the end of the second week and remove any rotten or broken eggs as soon as discovered. Be sure to dust the hen liberally with insect powder before placing her on the nest, and once or twice a week while she is sitting.

As I said before, ducklings should not be fed until 36 hours old. When removed from the nest, allow them to drink all the tepid water they want, then shut them in their coop so the hen will hover them until time to feed. For the first four or five days the feed should consist of stale bread moistened with sweet milk and lightly peppered with very fine clean sand. First two days feed every two hours, after that gradually increase the length of time between feeds. On the fifth day begin to add a little of the following mash. Enough should be mixed dry to last several days: Wheat bran, 3 parts; corn meal, 1 part; wheat shorts, 1 part. Add about 3 per cent each of bone meal, beef scrap and fine sand. After three or four days the bread can be left out. See that they always have plenty of drinking water. Have it in some sort of a fountain so the little ducks cannot wet themselves. The above ratio is all right to feed until they are full grown.

Pennsylvania. E. E. HOPKINS.

Fancy Sweet Corn.

I have been making a specialty the last few years of supplying sweet corn to regular customers at retail. This of course requires care, but it pays well, as prices can be maintained above the regular market prices. I generally sell at about five cents per dozen ears above the retail store price and intend to make it worth the difference to the customer. As a matter of fact, my patrons tell me that they cannot get corn that is as sweet anywhere else. I use the yellow variety only, as it is certainly better than any white sweet corn is in existence. I use my own seed, which I have selected and saved for years. Starting with Golden Bantam, I have crossed in some of the best sweet varieties to be found today, so I have a yellow corn of good size, with twelve rows of kernels, big enough to handle conveniently at the table.

To have the very best sweet corn, we must first have the best seed. We plant some very early, as soon as can be safely done in the spring, say early May. Then keep sowing at intervals of ten days to a fortnight, so as to keep a continuous succession until frost, as we have to keep our customers supplied regularly throughout the season. Great care is to be taken to pick the ears at just the right stage, neither too young nor too old. It is impossible to tell just when an ear is in just this stage without stripping down the husk a little so as to see just the development of the kernels.

Great care must be exercised in making the pickings to get the corn at the very best stage, since an ear is only at its best for a single day or two, and either earlier or later than this brief period is far less delicious. Then furthermore the corn must be picked only a short time before it is to be eaten. On no account pick it the day or night before the day it is to be delivered to the customer, for it will lose half its goodness and sweetness over night. It must be really and truly fresh, not merely called fresh. This is one great trouble with all store corn. There is too much of an interval between the time it leaves the producer and reaches the consumer. Too much emphasis cannot be placed on this point. It is all important. There is certainly a great moral as well as pecuniary satisfaction in producing an article for sale that is better than the ordinary, and such satisfaction is eminently the possession of whoever grows truly fancy sweet corn and sells directly to the consumer.

M. SUMNER PERKINS.

Massachusetts.

Kill Gophers and Squirrels Before THEY Kill Your TREES

Protect your trees and shrubs by *killing* the gophers, squirrels and other pests! Only 75c or $1.25 is all you need spend for this *sure* and *absolute* protection, even if you have 160 acres. Get a box of Mickelson's Kill-Em-Quick! It is *easy* to *use, cheap* and *effective*. *I guarantee* it to kill all pests for less than 1 cent per acre. Money back if it fails.

Kill-Em-Quick Gopher Poison

Is so *attractive* to the taste and smell of these pests that they simply can't resist it. They eat it before they know what it is and it kills them before they can wink an eye. One poisoned grain is enough to kill.

You can increase your crops and profits immensely if you will use Kill-Em-Quick Gopher Poison right *now*. It is sold under an absolute guarantee of satisfaction or money back. If druggist cannot, or refuses to supply you, I will ship direct, express prepaid. Kill-Em-Quick sells for 50c, 75c and $1.25 per box.

Anton Mickelson, President
Mickelson Kill-Em-Quick Co.
1431 Washington Ave. North,
Minneapolis, Minn.

In writing advertisers please mention The Fruit-Grower.

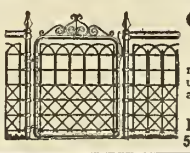
HOTEL CUMBERLAND
NEW YORK
Broadway at 54th Street

Near 50th Street Subway Station and 53rd Street Elevated.
Broadway cars from Grand Central Terminal and cars from new Pennsylvania station pass the door.
New and Fireproof
Best Hotel accommodations in New York at reasonable rates
$2.50 with Bath, and up
Ten minutes' walk to thirty Theaters. Excellent Restaurant. Prices moderate.
Send for Booklet
HARRY P. STIMSON
Formerly with Hotel Imperial

BROWN FENCE
FREE SAMPLE — WE PAY THE FREIGHT
STOUT STRONG — DURABLE CHEAP
BROWN FENCES will outlast any other because of heavier wires and thicker galvanizing. 160 styles for all purposes. Also Lawn Fences and Gates.
Bargain Prices, 13c Per Rod Up
delivered at your railway station. Send today for catalog and free sample for test.
The Brown Fence & Wire Company
Dept. 14 Cleveland, Ohio

Cheap as Wood.

We manufacture Lawn and Farm Fence. Sell direct shipping to users only, at manufacturers' prices. No agents. Our catalog is Free. Write for it today.
UP-TO-DATE MFG. CO. 976 10th St., Terre Haute, Ind.



ORNAMENTAL FENCE
25 Designs—All Steel
Handsome, cost less than wood, more durable. Don't buy a fence until you get our Free Catalogue and Special Prices.
We can save you money.
Kokomo Fence Machine Co.
501 North St., Kokomo, Ind.

LAWN FENCE
Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Churches and Cemeteries.
Coiled Spring Fence Co.
Box 413 Winchester, Ind.

11½ CENTS A ROD
For 18 inch Hog Fence, 14½c for 24-in. 26c for 48-in. Poultry. 78 styles. Bottom prices. Catalog Free.
OTTAWA MFG CO. 608 KING ST. OTTAWA, KANS.

4 BUGGY WHEELS STEEL TIRES PAID **$8.75**
With Rubber Tires, $18.45. Your Wheels Rerubbered, $10.30. I make wheels ¾ to 4 in. tread. Tops, $6.50. Shafts, $2.10; Repair Wheels, $5.95; Axles $2.25; Wagon Umbrella free. Buy direct. Ask for Catalog Q
SPLIT HICKORY WHEEL CO., 530 F St., Cincinnati, Ohio.

CULTIVATING ORCHARD

A System of Growing Crops Between Trees to Hasten Growth and Increase Fertility

As in all lines of agricultural work conditions vary much with the section, or with different parts of the farm upon which you are located. It is the successful fruit grower or farmer that is able to meet these widely different conditions with a proper solution, and promptly. He must have a familiar knowledge of the underlying principles of the work he is to undertake.

First of all let it be understood that I always have a definite object in view in cultivating my young orchard from year to year. My object is to get the maximum amount of growth on the young trees each year, to secure the greatest returns for my labor of cultivation from the crops grown in the orchard, and at the same time leave the land more fertile, and in better condition than when I began with it. The following is an account of how I attained all three objects sought in the young growing orchard.

My trees are five years old, and every other year during late winter or early spring a light mulch of stable manure is put around each tree, out for three to four feet from the base of the tree, according to it size.

As early as possible the land is plowed with two-horse breaking plows. A cover crop had been sown the previous fall, of either crimson clover or vetch and rye. This adds materially to the fertility of the land and has prevented erosion or leaching during the winter. The first year I plow around the whole orchard, the next year a back-furrow is started in the finishing furrow of the previous year, turning all the land towards the middle. With this system the land is kept level much more easily than would be possible if the land were thrown to or from the trees each year. With a shovel and mattock one man levels the dirt around each tree, and when this is done the whole orchard is as level as when we began. The plows are set to go very shallow close to the tree, the farther away from the tree we get the deeper they are run, until at a distance of four to five feet from the trees the plows are set to run at a depth of eight inches, always taking a narrow furrow, so as to edge the furrow slice instead of turning it clear over as would be the case if a wide furrow were taken.

At this time, as at all others, great care is taken to prevent the trees being scarred or broken in any way, and as a precaution the outside traces and ends of single trees are well wrapped with pieces of old fertilizer bags. This requires very little extra time, and always pays for itself many times over. This is done at all times when working in the orchard.

As soon as possible after plowing is done a double cut-away disc harrow set at a good angle, and with three horses hitched to it, is run over the ground in the direction the plows have gone. This settles the subsoil, filling in all cavities under the furrows, and leaves the land well leveled. Again in a day or so the disc harrow is run crossways in two different directions. After this very little more cultivation is needed to get an ideal seed bed. On one part of my orchard the land is gravelly, and on this the disc harrow will not do good work, so the plank drag and spring tooth harrow are relied upon to get this in condition for planting.

Potatoes Followed by Vetch.

Potatoes are my favorite orchard crop, as they respond very readily to heavy applications of commercial fertilizers, and can be gotten out of the land early enough in the fall to make a leguminous cover crop possible. One thousand pounds of commercial fertilizer per acre is applied, of a 3-10-8 mixture. Five hundred pounds is sown broadcast in a grain drill, and the remaining 500 pounds is put in the rows with a potato planter. The rows are run as close to the tree rows as possible, but in planting the row nearest the tree row the planter is raised out of the ground when it gets within five feet of the tree, then is run past the tree and again started to planting when it has gotten five feet beyond the tree. No potato plants are allowed to be closer than five feet from the trees, as they would take much of the moisture and fertilizer that should go to the trees. As often as possible, about once every week, the field is gone over with riding cultivators, but never when the potato vines are wet with dew or rain. It is always necessary to do some spading around each tree with a spading fork two or three times during the season.

The potatoes are dug about the first of September, and as soon after as possible, the land is well disced up and sown to hairy vetch and a small amount of rye, no fertilizer being needed. With only a fair season, both the vetch and rye will catch and make a good growth before winter sets in.

The following spring the land is left as long as possible so that the vetch and rye will make a good growth, and then the land is again plowed, this time starting with a back-furrow in the finishing furrow of the year before. It is again disced as often as is necessary to insure a good seed bed, then an early maturing variety of ensilage corn is planted in rows forty inches apart and twelve inches apart in the rows. The rows are run in opposite direction of the potato rows of the previous year. Two hundred pounds of steamed bone meal is sown through the planter. Cultivation is started as soon after planting as possible with riding cultivators going astride the tracks made by the corn planter and going deep; after this, it is gone over once or twice with a weeder or smoothing harrow. By this time the corn is large enough to start working again with the riding cultivators. A stalk is not allowed to stand closer than five feet from a tree. I have often seen people allow a corn stalk to grow right up beside a one- or two-year-old tree, with the result that the tree put on very little growth if any and was lucky if it got through the season alive, the corn stalk taking up all the moisture and available fertility with in a radius of sixteen or seventeen inches. I never hesitate to cut down a stalk if I think it is close enough to a tree to do it any damage in the least. If no manure has been put around the trees the previous winter a little bone meal, about one to two pounds, is put around each tree after growth is well started, and spaded in. Later on the trees are spaded around twice. At the last cultivation of the corn, about the middle of July, red and crimson clover are sown broadcast at the rate of fifteen pounds per acre of each. If the season is dry and for any reason I do not get a good stand of clover, rye is sown after the corn is cut, at the rate of five pecks per acre, after the corn stubble has been well disced up.

Harvesting the Peas.

The next spring the trees are again given a light mulch of stable manure, the clover or rye is given a chance to make considerable growth, and is then plowed under. The land is again well worked up with the disc harrow as in previous years. From 1,000 to 1,500 pounds of ashes is sown per acre. These are gotten from a tannery five miles away, at a cost of $2.00 per ton. I then sow cow peas or soy beans in a drill with every other spout closed up, this places the rows sixteen inches apart. The land is then run over with a smoothing harrow or weeder, and after the peas come through the ground well they are given two or three cultivations with the riding cultivators, but never when any dew is on them, and are intended for seed. One half the acreage is planted, and in ten days to two weeks the remaining piece is planted. This gives me more time to harvest them properly, as at harvest time other work is generally pressing, or the weather may

Two Practical Booklets FREE

These booklets should be in ebery farmer's library

Practical Suggestions for the Fruit Grower, by Prof. J. C. Whitten, Department of Horticulture, Missouri State University, and **Corn and Alfalfa,** by Dr. S. M. Jordan, of the Board of Agriculture, Missouri State University.

Issued by the
Immigration Department

Missouri Pacific Iron Mountain

"Only the man who has succeeded is competent to tell others how to succeed." These booklets have been prepared by men who are experts in their line and are practical in their treatment of the subjects mentioned.

Write today—a postal will do—and both booklets will be sent you by return mail.

J. N. ANDERSON
Immigration Agent
ST. LOUIS
MO.

MISSOURI PACIFIC IRON MOUNTAIN

$1 Worth for 25c

We have a few hundreds of the Brother Jonathan series of fruit booklets, of which we sold thousands a few years ago, and want to close them out quickly. These books originally sold at 25c each, and Fruit-Grower readers took thousands of them at that price.

We Now Offer Four of These Books, postpaid, for 25c

Select the numbers you want, and send your order today, for there are only a few of several numbers. Orders will be filled as they are received, and if any number you select cannot be furnished, we reserve the right to send another number instead. Here is the list of those we can furnish now:

No. 2—A Treatise on Spraying. Tells all about how to fight insects and diseases which attack apples and strawberries.

No. 3—Strawberries and How to Grow Them. A dandy little book telling how to grow this most valuable fruit.

No. 4—Gardening. A practical little booklet which discusses all phases of gardening, including making and management of hotbeds.

No. 5—Packing and Marketing of Fruits. This book takes up the problem of packing and marketing in a common-sense manner.

No. 6—Bush Fruits. A booklet which discusses the culture of raspberries, blackberries, gooseberries, etc.

No. 7—Grapes. This booklet discusses planting and care of vineyards, and illustrates the famous Munson system of training the vines. Only 75 copies of this number are available.

No. 8—Pruning Booklet. Discusses the whys and wherefores of pruning fruit trees and shrubbery. Only 50 copies available.

No. 10—Stone Fruits. Discussing the culture of cherries, plums, peaches, etc., with notes as to varieties.

No. 12—The Corn Book. A little book containing valuable information on corn culture, including chapters on seed selection.

Order These Books at the Rate of Four for 25 Cents

Send us list of the numbers you want, and act quickly, so that you will be sure of getting the numbers you want. Here's a real bargain, for thousands of these booklets were sold at 25c each, and every purchaser received his money's worth. Send order today to

THE FRUIT-GROWER, Book Dept., ST. JOSEPH, MISSOURI

not be suitable to harvest them all at once. As in the case with other crops, the peas are not allowed to stand closer than five feet from the trees, If the peas or beans are of good quality and the pods are well filled, the greater part of the crop will be threshed out, otherwise they are used for hay. The best machine for cutting peas is a self rake dropper. It does not shatter the beans out of the pods, gathers them in bunches regulated by the operator, and drops them off. With one turning, these piles will be cured out sufficiently to haul and store in a mow. The land is then disced two or three times and sown to vetch and rye or crimson clover. I have had success with both in favorable seasons, and failures with both when the season was dry. The next season the land is again planted to potatoes as three years before.

This rotation has worked uniformly well in my ease, it has given entire satisfaction when the season was anything like favorable. The trees have put on unusually good growth every year, and it has been profitable, as average yields of 185 bushels of potatoes, 16 tons of ensilage, 14 bushels of soy bean seed, and one and one-half tons

MISS MARGARET BEINHART, KENNEWICK, WASH., AND A DELICIOUS APPLE TREE.

Miss Margaret says: "This is a picture of me and a tree I got from you as a premium with your paper. It came through the mail and was a very small tree when I got it. It was set out in May, 1910. In 1911 it grew from where I am holding the stick."

of cow pea hay have been made, and the land is more fertile by far than when I began with it. Of course this system will have to be materially changed as the trees come into bearing, then I shall expect the crops to get returns for the annual cultivation and fertilizers they receive, and not have to grow money crops in it for this purpose.

I am well aware that the system of cultivation as I have practiced and outlined above would not be advisable nor practical in many orchards, owing to steepness of land or character of soil. Personally I would not care to grow an orchard on land too steep to cultivate with horses, and get around on easily with a spray wagon.

Only recently I visited an orchard in Bedford County, Virginia. The orchard was located back in a deep mountain cove, such as is common to this section. All of it was unbelieveably steep. Fortunately the rows of trees had been planted with the contour of the land. Between every other two rows a road had been made running full length of the tree rows, by running the ends of two roads together, one up and the other down, it was made possible to get from one road to another, otherwise this would have been impossible with a spray tank or wagon.

A Remarkable Orchard.

A packing house was located at the bottom of the cove. The top row of the orchard was some 250 yards above it. In order to get from the packing house to the topmost row in the orchard with a wagon it was necessary to grade around some three and a quarter miles! The owner of this orchard says that this all to his advantage when it comes to growing good apples. The soil is known as a "Hagerstown Pippin Loam," and is very loose, deep and fertile. I saw no trace of washing while I was in this orchard. It readily takes up all the rain that falls on it. I saw this orchard in January and it had a perfect mat of dead clover all over it, and upon inquiry I found it had been seeded to a mixture of red, sapling, and sweet clover, some seven or eight years before. The seeding was done in February, with no cultivation and got a perfect stand owing to the honey-combed condition of the soil at time of planting caused by alternate freezing and thawing, and was followed by a favorable season. Since then it has been allowed to grow up and die down, reseeding itself each year, care being taken to keep it away from close around the tree trunks. On this land other than hand cultivation would be impossible and unnecessary. Spading around each tree had been annually practiced until a few years before when it was discontinued, not being thought necessary. The trees are fifteen years old, and being in this very rich loose soil were remarkably well grown and healthy. Late frosts are practically unknown in this orchard, owing to its altitude above the surrounding country, and the owner has harvested very creditable annual crops. As he expressed it "the trees just bear themselves to death every year." They gave ample proof of this by the many broken limbs in evidence.

On this land that had been bought for $2.25 per acre the owner had been able to grow, with very little expense, uniformly large crops, with color and quality that cannot be surpassed in all America.

On the other hand I have seen orchards set in all kinds of land and soil that were absolute failures, and more from the lack of a sane system of cultivation than anything else. In many cases the rotation practiced by its owner is: Corn, wheat, wheat, hay, hay, and is then pastured with cattle, horses, sheep or hogs as long as any grass will grow on it. Then the same thing over again beginning with corn. The owner does not seem to take into consideration that land in which an orchard is planted should be treated any differently than any other land on his farm, even for his own profit. In many of these cases the owner will have the trees trimmed and sprayed for a series of years, lured by the present prevailing high price of strictly No. 1 apples, but the same old system of cultivation prevails, all the while getting very few good apples of marketable size. As the trees increase in size he finds it unprofitable in the extreme to try to get a crop from the land in which the orchard is planted, so he lets it go into pasture once and for all. Probably in a few years he will be again siezed by a spasmodic desire to grow some good apples, but with each attempt generally gets more scabby and wormy apples than anything else.

Apple growing is an art that we have to study, and put gray matter into it continuously. We have to like the business well enough to stick to it in years of over-production, with glutted markets, and corresponding low returns, so as to be able to be present with a good crop in years of small crops and proportionately high prices. The markets will never be glutted with high quality apples put up in attractive packages.

RICHARD H. CLEMMER.
Virginia.

We need to be more careful about the water supply on the farm. It goes without saying that the supply for the house needs to come from a pure supply, and is far better if supplied to the house under pressure through a pneumatic tank. But the supply for the dairy and for the vegetable washing tank needs to be equally pure, and is far more convenient when supplied under pressure.

Save Money *and* Save Bother at the Same Time

THE way to do this is to send $2 for three years' subscription to The Fruit-Grower. By so doing you will save $1, you will have the matter out of the way—and, besides, you will get a copy of The Fruit-Growers Guide-Book absolutely free as a premium.

Now is the time to get the greatest good from The Fruit-Grower. You can find in every issue reminders of work needed to be done, with reference to articles which tell just how to do this work. During the winter you plan work for the summer months, but The Fruit-Growers' calendar of work to be done comes just at the right time, the facts are presented in just the right way.

Send $2.00 for Three Years' Subscription

You are going to renew, anyway. Why not send $2 and have your name in good standing on our subscription list for three years? By sending your renewal now you will get your copy of The Fruit-Growers Guide-Book at once, and it will be of great help during the coming season.

The editor of Country Life in America says this is a real business book, one to be carried in the hip pocket of your overalls, with your pruning shears, so that it will be available for reference when you are out in the orchard or field. That's just what the book is for: To be of real, practical service to fruit growers and gardeners.

Don't put it off. Send your $2 now and get this great book free with your renewal. You can't lose, but will be saving money and trouble.

The Fruit-Grower
Subscription Dept. ST. JOSEPH, MO.

Labels for Fruit Packages

The kind which go hand in hand with fancy packs and indicate quality at first sight.

You cannot afford to misrepresent your fruit by using a cheap looking label.

Take up this matter at once with our printing department, before the harvest is on, so that you will have time and also afford us ample opportunity to get up just what you want. We have one, two, three and four-color cuts of many varieties of choice fruits, and also are prepared to make to your order, on short notice, special designs, giving distinction and individuality to your particular brand. Let's work out this label proposition now. Write today.

The Fruit-Grower Printing Dept. St. Joseph, Missouri

4,000 Carloads Wanted

Up to this writing, orders have come to us for over 4,000 carloads of Reo the Fifths. Six cities want trainload lots

By R. E. Olds, Designer

My Greatest Success

In all the 25 years I have spent building cars I never saw a demand like that for Reo the Fifth.

It is the season's sensation.

Six cities ask for shipments in trainload lots—trains of forty carloads. These are New York, Boston, San Francisco, Los Angeles, Portland and Kansas City

About 1,000 dealers, in a thousand towns, have already ordered these cars.

After 25 Years

This comes after men, for a quarter century, have driven cars I built.

I told these men that Reo the Fifth embodies the best I know.

I said that it marks my limit, after a lifetime's experience.

And the first announcement brought 12,000 orders from men who have faith in me.

No Undue Haste

In the stress of this demand no undue haste is permitted. I stand here and insist that every car shall be a credit to my reputation.

The parts of each car are ground over and over, until we get utter exactness.

Each car in the making must pass a thousand inspections. Countless parts are discarded because of slight imperfections.

Each lot of steel is analyzed. Engines are tested for 48 hours. Completed cars are submitted to long and radical tests.

The bodies are finished with 17 coats. Not a detail is being slighted.

We could increase our sales $1,000,000 this spring by a little less care in production. But we shall not omit that care.

Not for a Season

Reo the Fifth is not built for one season. We count on each car selling 20 cars in the future.

For this car comes close to finality. Men will never be able to greatly improve on it. This factory can never say, "Here is a new model, much better than Reo the Fifth."

With this car I lay down the arduous cares of designing. I end 25 years of ceaseless improvement. I am perfectly content to be judged by this car, whatever may come in the future.

That's why I am watching every car that goes out. We can never claim to better our best, after all this experience. So the future of the Reo depends on this car's performance.

New Center Control

The Year's Greatest Improvement

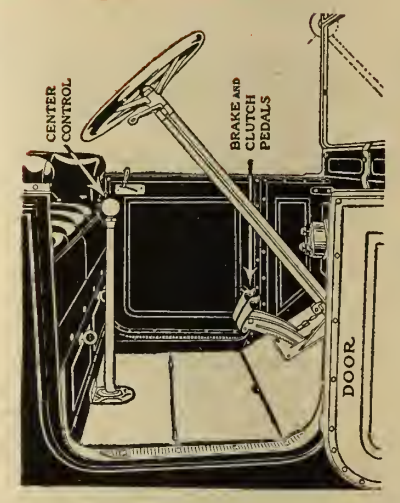
The new center control in Reo the Fifth marks the greatest step of the year in designing. It solves the last great problem in motor car engineering.

There are no side levers to block one of the front doors. There is no reaching for the brake or the gear lever.

All the gear shifting is done by this center cane-handle. It is done with the right hand, and done by moving this handle only three inches in each of four directions.

Both brakes are operated by foot pedals. One pedal also operates the clutch. There was never a control so handy, so simple.

This arrangement permits of the left side drive, heretofore possible in electric cars only. The driver sits, as he should sit, close to passing cars, and on the up side of the road.



Price Still $1,055

The initial price of this car is still being continued, though subject to instant advance.

This is one feature, I fear, which must be changed before long. Any advance in materials must be added to the price, and that advance is imminent, I think.

I repeat this to avoid any misunderstanding. We shall not advance our price because of overdemand, though that would be easily possible. This car would be cheap at $1,250—cheaper than any rival.

Added price, when it comes, will be solely due to added cost of production. Our margin is now at the minimum.

1,000 Dealers

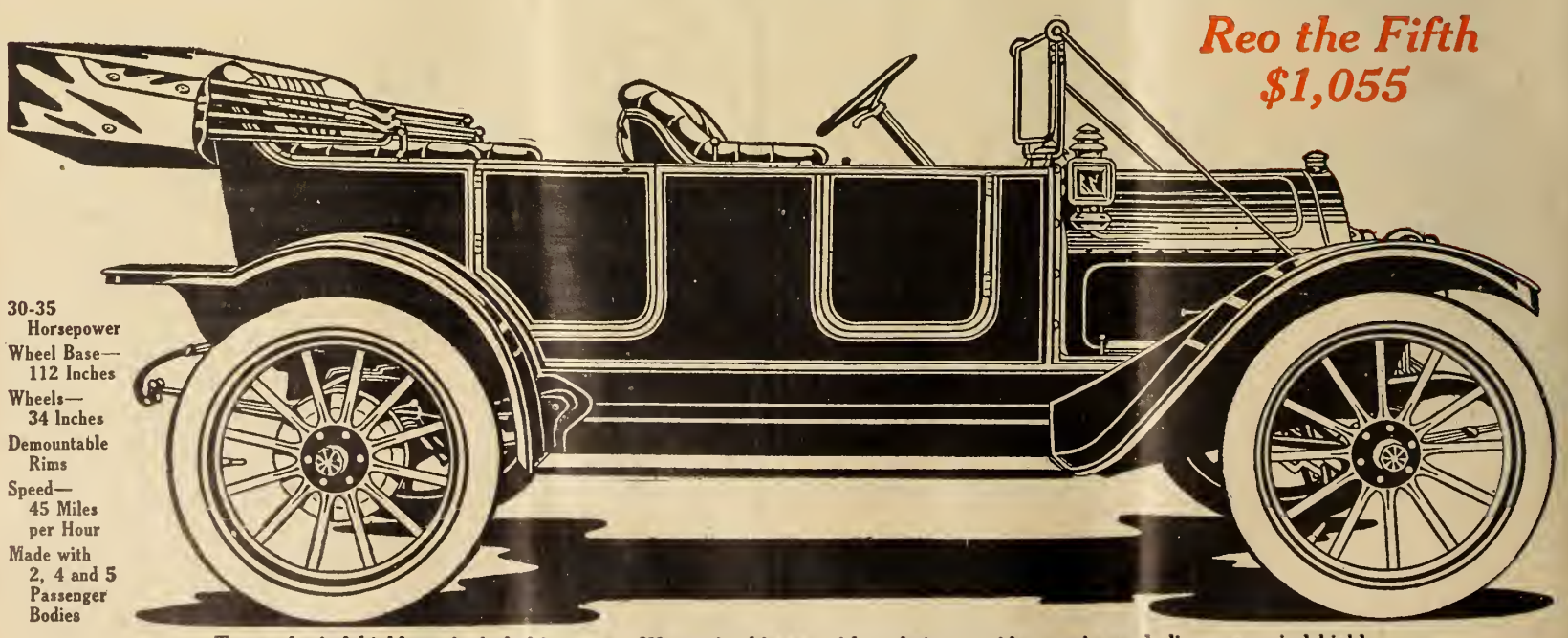
Wherever you are, some dealer nearby you has Reo the Fifth on exhibit.

Write us for our catalog showing all body designs and we will tell you the nearest dealer. Write us today. Address

R. M. Owen & Co. General Sales Agents for **Reo Motor Car Co., Lansing, Mich.**

Canadian Factory, St. Catharines, Ont.

Reo the Fifth $1,055



30-35 Horsepower
Wheel Base—112 Inches
Wheels—34 Inches
Demountable Rims
Speed—45 Miles per Hour
Made with 2, 4 and 5 Passenger Bodies

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip cover, windshield, gas tank and speedometer—all for $100 extra. Self-starter, if wanted, $20 extra.

(82)

Volume 23 JUNE, 1912 Number 6

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

"The National Farm Magazine"

Copyrighted, 1912, by The Fruit-Grower, St. Joseph, Mo.
Title Registered in U. S. Patent Office.

Ten Cents a Copy
One Dollar a Year

10,000 Cars at $1,055

To Introduce Reo the Fifth

By R. E. Olds, Designer

To the Thousands Who are Buying

I am not writing this to sell more cars. The present demand taxes our utmost capacity. And the cars in use will sell our future output better than words of mine.

In all my experience of 25 years I have never seen a success like that of Reo the Fifth. I have never seen a car so popular.

What I have to say now is to you who are buying, largely through faith in me.

I want you to know that, despite this rush, there are hundreds of us watching every car. We are giving more than we promised.

And you who took my word—who are buying first—are getting an underprice.

Just the Start

Reo the Fifth is not built for a season. The present demand is just the beginning.

This car, remember, is the final result of 25 years spent in car building. It marks my limit—the very best I can do. And no car of the future can greatly improve on it.

The cars we sell now are sent out to sell others—to create reputation for My Farewell Car. And you may be sure that not a car goes out until we know it is utterly perfect.

Our Costly Care

We analyze the steel that goes into this car. Every part is inspected over and over. Every part with a flaw is rejected.

Every important part is put to radical test before it goes into the car.

The engines are tested for 48 hours. The finished cars are given more severe try-outs than in any other factory I know.

Parts are ground over and over to get utter exactness. Absolute silence in every part is demanded.

Each body is finished in 17 coats. The upholstering is perfect. To every part we give the final touch, regardless of time or cost.

For each of these cars is a salesman. Each will tell to hundreds of people the story of Reo the Fifth. And all our success in the future depends on the tale they tell.

The Underprice

There was never a car so underpriced as Reo the Fifth at $1,055. Every man knows this who makes any comparison.

This price is ridiculous. It is too low to endure. The coming advance in the cost of materials is bound to send it soaring.

But we are content to sell 10,000 cars without regard to profit. So the present price will doubtless continue during the spring demand.

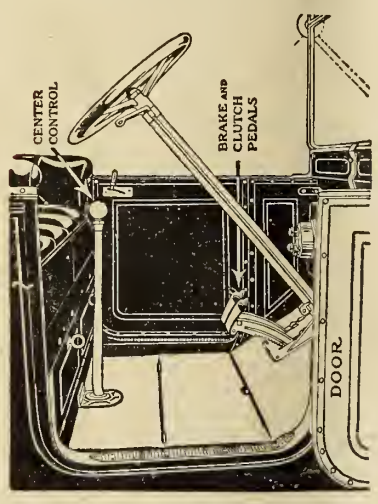
It goes to original buyers—to the men who first come to this car. And they will create our future market. Their cars will be our future advertisements.

You early buyers are getting an inside price, and I am glad to know it. But men who expect the present price to continue are bound to be disappointed.

The Center Control

This Year's Best Innovation

The success of Reo the Fifth is largely due to our new center control. Here, for the first time, we



get rid of all side levers. Both doors in front are clear.

All the gear shifting is done by moving this center lever less than three inches, in each of four directions. It is done with the right hand.

Both brakes are operated by foot pedals, one of which also operates the clutch.

This arrangement permits of the left side drive, heretofore possible in electric cars only. The driver sits, as he should sit, close to the cars he passes and on the up side of the road.

The old side drive will appear very awkward when you once see this.

1,000 Dealers

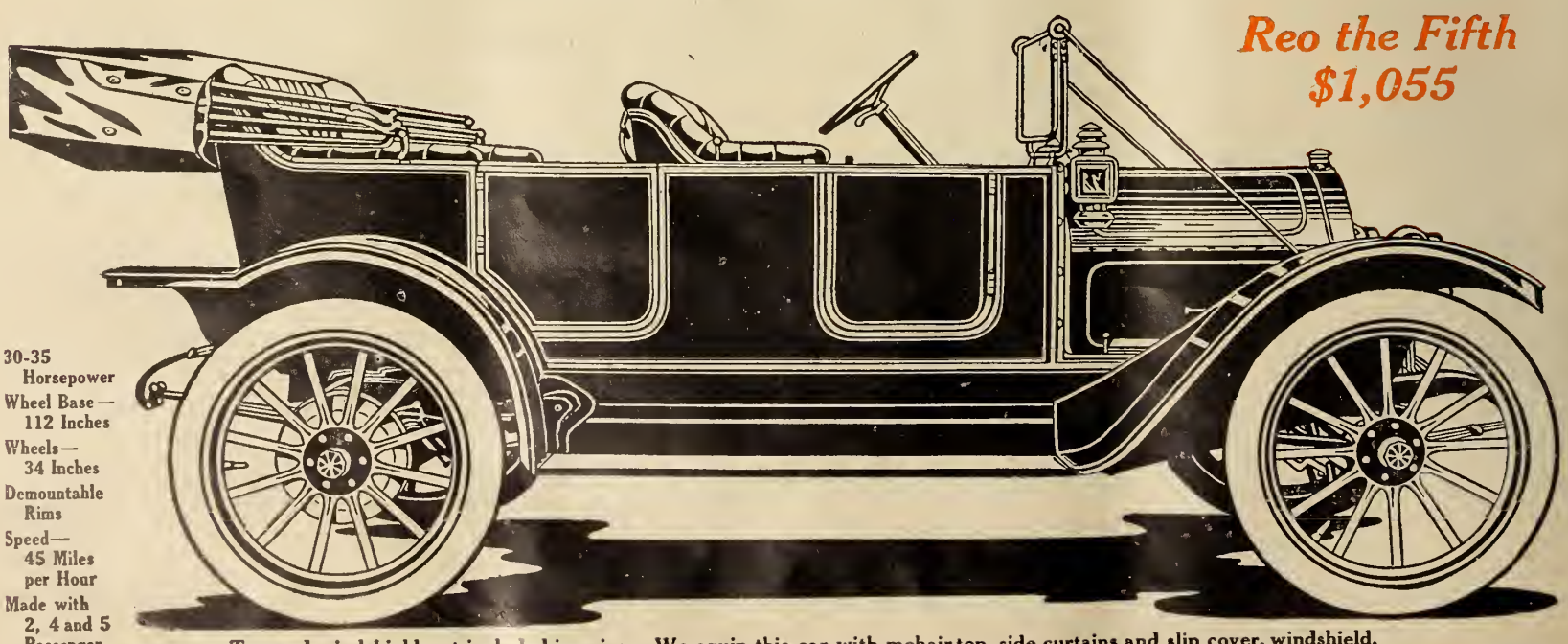
Reo the Fifth is sold by dealers in a thousand towns, so everyone can easily see it.

Our catalog shows the various bodies and gives every detail. Ask us to mail it to you. Address

R. M. Owen & Co. General Sales Agents for Reo Motor Car Co., Lansing, Mich.

Canadian Factory, St. Catharines, Ont.

Reo the Fifth
$1,055



30-35 Horsepower
Wheel Base—112 Inches
Wheels—34 Inches
Demountable Rims
Speed—45 Miles per Hour
Made with 2, 4 and 5 Passenger Bodies

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip cover, windshield, gas tank and speedometer—all for $100 extra. Self-starter, if wanted, $20 extra.

THE FRUIT-GROWER

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Volume 23 ST. JOSEPH, MISSOURI, JUNE, 1912 Number 6

JUDSONIA, ARK., BERRIES

Twenty-four Carloads of Strawberries Shipped in One Day, Valued at Over $19,000

Nineteen thousand dollars a day paid into a community for strawberries is enough to indicate that there is not only a quantity of berries produced in that community, but that the berries are bringing a good price. The association at Judsonia, Ark., received above that amount, or to be exact, $19,564.30, for their berries on Monday, May 13th, and paid to the growers $18,977.16. This amount represented a little over twenty-four carloads, or 11,702 cases, with prices ranging from $2.50 per crate for the fancy berries to 82c per crate for the lowest grade. This vast sum was paid in cash, and the check covering the berries produced by each grower shipping on that day was ready a few hours after the berries were loaded on the cars. Quick sale and prompt settlement, together with good prices is the result of their co-operative association, which has made the country around Judsonia one of the greatest strawberry sections in eastern Arkansas.

This place is located 292 miles south of St. Louis, on the St. Louis, Iron Mountain and Southern Railway, and fifty-four miles northwest of Little Rock, the capital of the state. Berries constitute the principal crop of the community, ranging in importance, far ahead of cotton, the great staple of most of the Southern farmers. In fact every one for miles around Judsonia grows a few berries, while the largest plantation covers barely forty acres.

Located as it is, just below the southern border of the Ozarks and just far enough west to be above the lowlands of the Mississippi, it has the advantage of soil that is light and sandy, without the stones that characterizes most of the Ozark districts and better drained than land a few miles to the east. But on account of the sandy nature of the soil heavy fertilization is resorted to, the fertilizers being mostly rich in potash and phosphorus, while nitrogen is secured by the aid of cowpeas. The rotation practiced by the best growers of the community is cowpeas, potatoes or oats and strawberries. The cowpeas are plowed under to add humus and nitrogen, the oats or potatoes to aid in getting the soil in condition and produce feed or cash returns, while the strawberries constitute the main crop and occupy the land for a period of three or four years.

Strict adherance to a systematic plan of rotating the crops is the secret of the success made by the better growers of the district. Some of the land has been producing strawberries for almost a generation, rotating the fields of course with cowpeas, potatoes, cotton, oats or other crops. But many of the most productive of the berry plantations are growing among the stumps where the virgin timber has been removed. The country is covered with a heavy stand of hardwood timber, oaks, gums and ash. In many of the fields which I saw, the best of the trees had been cut and made into lumber; the largest of what were left had been deadened, the brush had been grubbed out and the berries planted between the stumps and the standing, deadened trees. While this may not be the ideal practice of many good farmers, it answers its purpose well and the berry grower is able to harvest from such fields crops of strawberries which run to a hundred dollars or more per acre in value.

What has made it possible for these growers to sell their berry crops with as much ease as they do? The answer is "co-operation." These growers have a thorough understanding of co-operation, as their selling association has been organized for a period of more than thirty years. The present association was organized in 1898, and incorporated three years ago as the Judsonia Fruit and Vegetable Growers' Association. On this account the growers understand the working principles of a co-operative organization and are in position to take advantage of all of its possibilities.

The president of the association, Mr. A. M. Kittler, also acts as sales manager, and this season has been selling most of the berries on track at Judsonia, although some have been consigned. When the berries are sold on the track as most have been this year, the growers receive their pay on the next day. Delivery is made at the association's loading shed, where the crates are inspected, counted and entered on the tally book, according to the grade. Four grades are recognized by the association, they being known as "Fancy," "Klondike," "A" and "B." After the days sales have been closed, the amount due to each grower is prorated according to the number of crates of each grade. The sales manager then fills out a sheet with the total receipts for the day according to grade, the total amount received for the day, and the amount of commission. Below this is entered the number of crates, grades and varieties the individual grower delivered on that day, and the amount due. Attached to the bottom of this sheet is the check in payment for the berries.

The association is a stock company, in which all of the stock is owned by the growers. There are 340 of these stockholders, and the rules of the association limit the growers to but one share each, at a par value of $25. The association charges a commission of 3 per cent on the sales, and last year did a business which amounted to over $300,000 gross.

While berries represent the important and practically the only fruit which is handled by this association, considerable truck is produced later in the season and closes the business of the association in the way of selling the produce of its members. But I was greatly interested in another phase of the berry business at Judsonia, and that is in the production of berry plants. This is a highly specialized business, which is being conducted by J. A. Bauer, and it was my good fortune to spend a day visiting this successful berry grower. Mr. Bauer has grown up in the strawberry business, following in the footsteps of his father, who located at Judsonia and began growing berries in 1880.

RESIDENCE OF J. A. BAUER.

His farm consists of 240 acres of land, forty of which is in berries. On account of conducting a nursery for strawberry plants, Mr. Bauer has a much larger variety of strawberries than those who grow the berries only for the fruit. But among his list he has confined himself to only the standard commercial sorts, and even then has about thirty-five varieties in his collection. The principal varieties of the locality which are grown for fruit are Excelsior, Klondike, Aroma and Bubach. Gandy, while a good berry in that locality, is but little grown, as it ripens too late in the season to escape the competition with early berries from more northern points. The growers show their co-operative spirit in confining the bulk of their berry acreage to the same varieties, as they are in that way better enabled to ship the fruit to advantage and get better prices.

The fields of Mr. Bauer are largely in virgin soil, and while many of the fields in the district suffered greatly from the dry weather last summer, Mr. Bauer has a perfect stand and a heavy crop. The reason for it being that he kept the soil in his berry field thoroughly cultivated all of last summer, holding the soil moisture and enabling his plants to grow while in other fields they were burning up with the drouth. But this continuous cultivation through the dry weather last year was not so much to keep the berry plants alive and enabled to make fruit buds for the crop this year, as it was to enable them to make an abundance of runners. These were wanted and needed to fill orders for plants, as this phase of the business is of more importance to Mr. Bauer than the fruit. Approximately five million berry plants left the Bauer farm this spring and became the mother plants in new fields. One customer alone took 600,000 of these new plants.

Mr. Bauer is the most progressive berry grower in his community, and not only that, he is one of the young men who is working most ardently for the upbuilding of the agricultural practices in Arkansas. His berry fields are the models of the region, and on account of having a lifetime experience as a strawberry grower, he is recognized as the highest authority on cultural problems. On this account I took occasion to make a few observations of his fields, both new and old. He sets the plants with a trowel. Each of his planters is given a chip basket full of plants, and with the trowel makes an opening in the row, sets in the plant to the proper depth and with a thrust of the trowel shoves the soil against the roots of the plant. The plants are set eight inches apart in the rows, and allowed to make all the runners they will during the summer. Planting is done at any time after October until late spring, whenever the soil is in condition to work, and are cultivated thoroughly during the summer. The best of these runners are dug for new plantings, and after the field has produced its first crop, men go through with hoes and chop out the old plants and enough others to leave the remainder eight inches apart. A small plow is then run along both sides of each row, leaving the rows about six or eight inches wide. Cultivators follow the plow and work the soil back to the row and put it in good tilth for the summer cultivations. This makes practically a new plantation, and the same process is repeated until after the field has produced three crops of berries. It is then plowed up

SOMETIMES TWO HUNDRED OR MORE WAGONS ARE IN LINE AT THE ASSOCIATION LOADING SHED, WAITING TO DELIVER THEIR BERRIES.

nd planted to cowpeas, followed by otatoes or oats, perhaps a second rop of cowpeas and then into straw-erries again.

Berry harvest at the Bauer farm is busy time, not only on account of the immense number of plants that are shipped each year, but because the fruit harvest gives employment to many men, women, boys and girls. Whole families are camped there during the harvest and every one picks berries. Each picker is provided with a tray holding six quart boxes. The berries are picked directly into the boxes, and when the tray is full it is carried to the packing shed for inspection. Here the picker is given a check for the tray and can cash these checks at the rate of 2 cents per box. The inspectors at the packing shed look to see that the berries are in good condition in each box; not too ripe, not too green and that the box is well filled.

PICKERS DELIVERING THEIR TRAYS AT ONE OF MR. BAUER'S PACKING SHEDS.

The boxes are then packed in twenty-four-quart crates, the lids nailed on and they are ready to go to the car.

The berries are mostly delivered at the railroad in the late afternoon and early evening. These are the rush hours on the loading platform, and "rush" they are indeed. Sometimes as many as 200 wagons are in line waiting to unload, and as much of the work must be done after dark, the loading platform is provided with gas light. Even with the speed at which these wagons are unloaded, it is frequently near midnight before the last wagon is emptied. As many as twenty-four cars have been packed in one evening.

More About the Himalaya Berry.

The comments which have appeared in recent issues of The Fruit-Grower about the Himalaya berry have brought a great many replies from persons who have experimented with this berry. The experiences of these are widely variable, some speaking of the berry in terms of great praise, while others are equally strong in condemning the berry. It seems that there is a place for the fruit, but that the limits under which it may be cultivated and the conditions most suitable for the perfection of its fruit needs further experimenting, before we shall know positively those localities under which it may be grown with commercial success.

Among these letters, F. L. Ludwig of Washington says his vines are "planted in rich soil and made a wonderful growth. The main stock or cane is one and one-fourth inches in diameter and only two years old. Am somewhat disappointed with the fruit, it being quite sour unless left on the vine until dead ripe, in which condition it is too soft for shipping."

Everyone who has written from sections where the winters are severe says that there is more or less freezing back, one correspondent who planted 1,800 of the vines in the Farmington Valley, New Mexico, saying they froze back each spring, but Henry T. Williams, of Texas, says that the vines need age to reach hardiness. "The young growth needs protection. The older wood stands all kinds of weather safely. The habit of the plant is that of both vine and tree. It roots deep and stands extremes of all kinds, yet feels cold winds on the new growth pretty severely. Good hardened parts of the vine do not care for any kind of weather. For the Northern and Eastern states it is best to cover up all young new growth securely by either mulch or straw, or else the good fortune of a blanket of snow all winter.

"The berry is a grand one in some characteristics not so much in size as keeping and good eating quality. It is better than many blackberries that have a sub-bitter taste and is as mild as the sttrawberry. It is the best of all berries for keeping; it has been kept fourteen days without failing. Its quality is sweet and refreshing. A buyer will buy again as long as he can get them, and never tire of them.

"The vine is a wonder in vigor and extreme luxuriance, it never seems to come to a stop in growing. But it takes nearly three years to get to the proper age for fruitfulness. Then it makes up for lost time and covers itself with its glory. It keeps bearing for months, making new blooms and fruits, and a picker can go over his ground a dozen times and not exhaust his mine for picking.

"The size of the berry is over one-half of an inch, probably more still, as it gets under good chances for moisture. If it fails of fruiting in dry sections, it is because of lack of moisture, or lack of pruning, it will endure considerable pruning. After it is two years old, it will bear in spite of everything if previously pruned some."

Let us have more reports about this new berry.

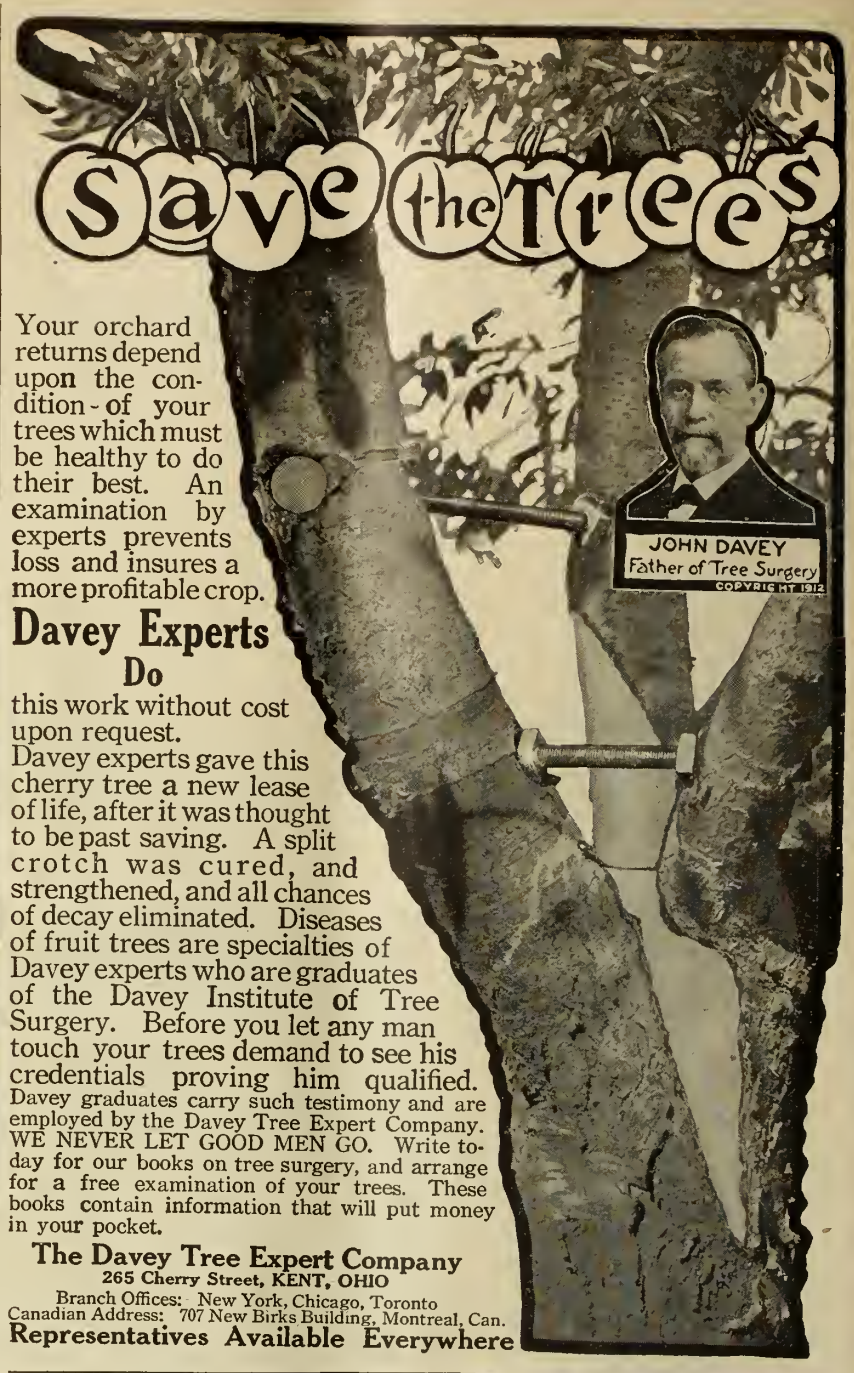
Our June Cover, "The Fisher Boy."

Our title page this month isn't a photograph of anybody—it is simply a composite picture of thousands of American boys of today and of previous generations who have considered the month of June as the one time of all the year to go fishing. The boy's hat brim may be a trifle wider than the one you used to wear, and maybe he hasn't quite as many freckles on his nose; perhaps you wore home-made suspenders—"galluses," we called them—and it is likely that your fishing tackle did not have a painted cork. But in most respects this boy is very much like all who have gone before him, and all who are yet to follow the same road—for every boy has a right to an experience like this.

Pyrox fills the barrel with the apples that used to go on top. Write Bowker Insecticide Co., Boston, for book.

Analyses of Fertilizers Given in New Bulletin.

The analyses of 36 brands of fertilizers made by 13 different manufacturers, and offered for sale in Wisconsin during the current year, are given in a circular of information, No. 33, just issued by the College of Agriculture of the University of Wisconsin. A concise explanation of the various constituents of the fertilizers is given in the bulletin.



Your orchard returns depend upon the condition of your trees which must be healthy to do their best. An examination by experts prevents loss and insures a more profitable crop.

Davey Experts Do

this work without cost upon request. Davey experts gave this cherry tree a new lease of life, after it was thought to be past saving. A split crotch was cured, and strengthened, and all chances of decay eliminated. Diseases of fruit trees are specialties of Davey experts who are graduates of the Davey Institute of Tree Surgery. Before you let any man touch your trees demand to see his credentials proving him qualified. Davey graduates carry such testimony and are employed by the Davey Tree Expert Company. WE NEVER LET GOOD MEN GO. Write today for our books on tree surgery, and arrange for a free examination of your trees. These books contain information that will put money in your pocket.

The Davey Tree Expert Company
265 Cherry Street, KENT, OHIO
Branch Offices: New York, Chicago, Toronto
Canadian Address: 707 New Birks Building, Montreal, Can.
Representatives Available Everywhere

The Handiest Rig on the market for nailing Box Apples

Price $11

Send for Circulars

H. PLATT & SONS
Como Montana

The Edgemont LID PRESS

A Water Supply solves many farm troubles. Have a water supply without pumping expense or bother—just install an automatic

RIFE RAM

Costs little to install—nothing to operate. Raises water 30 feet for every foot of fall. Will supply pneumatic tanks against 100-lb. pressure. Pumps automatically day and night, winter and summer. Fully guaranteed.

If there is a stream, pond or spring within a mile, write for plans, book and trial offer, FREE.

RIFE ENGINE CO.
2521 Trinity Bldg., New York

A Good Position For You

sure when you graduate from GEM CITY BUSINESS COLLEGE of Quincy, Ill. Thorough courses in Shorthand, Typewriting, Bookkeeping, Actual Business Practice, Penmanship and Mathematics. 23 competent teachers—1400 students annually. Our own $100,000 specially equipped building. Write now for beautifully illustrated catalog and year book.
D. L. Musselman, Pres.
Lock Box 36 Quincy, Illinois

Baseball Curver

Greatest invention in baseball since the discovery of the curve. Worn on either hand, it aids in giving the ball a rapid, whirling motion, thus causing a wide curve. With it you can strike out the batsmen as fast as they come to bat—so small it is not noticed—and they all wonder where those awful curves come from. Sent FREE to any boy who will send us only 10c for a two-month's trial subscription to THE AMERICAN HOME, a big weekly magazine filled with the best and most delightful stories ever read.
G. W. CARTER, 99 E. Fourth Street, ST. PAUL, MINN.

KNOWS NOW
Doctor Was Fooled By His Own Case For a Time.

It's easy to understand how ordinary people get fooled by coffee when doctors themselves sometimes forget the facts.

A physician speaks of his own experience:

"I had used coffee for years and really did not exactly believe it was injuring me, although I had palpitation of the heart every day. (Tea contains caffeine — the same drug found in coffee—and is just as harmful as coffee.)

"Finally one day a severe and almost fatal attack of heart trouble frightened me and I gave up both tea and coffee, using Postum instead and since that time I have had absolutely no heart palpitation except on one or two occasions when I tried a small quantity of coffee which caused severe irritation and proved to me I must let it alone.

"When we began using Postum it seemed weak—that was because we did not make it according to directions—but now we put a little bit of butter in the pot when boiling and allow the Postum to boil full 15 minutes which gives it the proper rich flavour and the deep brown color.

"I have advised a great many of my friends and patients to leave off coffee and drink Postum, in fact I daily give this advice." Name given by Postum Co., Battle Creek, Mich.

Many thousands of physicians use Postum in place of tea and coffee in their own homes and prescribe it to patients.

"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

If You Like a Little Quiet Fun

Ask some pompous person if **Grape-Nuts Food helps build the brain.**

Chances are you get a withering sneer and a hiss of denunciation.

Then sweetly play with the learned toad.

Ask him to tell you the analysis of brain material and the analysis of Grape-Nuts.

"Don't know? Why, I supposed you based your opinions on exact knowledge instead of pushing out a conclusion like you would a sneeze."

"Well, now your tire is punctured, let's sit down like good friends and repair it."

The bulky materials of brain are water and albumin, but these things cannot blend without a little worker known as Phosphate of Potash, defined as a "mineral salt."

One authority, Goehegan, shows in his analysis of brain, 5.33 per cent total of mineral salts, over one-half being Phosphoric Acid and Potash combined, (Phosphate of Potash) 2.91 per cent.

Beaunis, another authority, shows Phosphoric Acid and Potash (Phosphate of Potash) more than one-half the total mineral salts, being 73.44 per cent in a total of 101.07.

Analysis of Grape-Nuts shows Potassium and Phosphorus (which join and make Phosphate of Potash) is considerable more than one-half of all the mineral salts in the food.

Dr. Geo. W. Carey, an authority on the constituent elements of the body, says: "The gray matter of the brain is controlled entirely by the inorganic cell-salt, Potassium Phosphate (Phosphate of Potash). This salt unites with albumin and by the addition of oxygen creates nerve fluid or the gray matter of the brain. Of course, there is a trace of other salts and other organic matter in nerve fluid, but Potassium Phosphate is the chief factor and has the power within itself to attract, by its own law of affinity, all things needed to manufacture the elixir of life."

Further on he says: "The beginning and end of the matter is to supply the lacking principle, and in molecular form, exactly as nature furnishes it in vegetables, fruits and grain. To supply deficiencies—this is the only law of cure."

Brain is made of Phosphate of Potash as the principle Mineral Salt, added to albumin and water.

Grape-Nuts contains that element as more than one-half of all its mineral salts.

Every day's use of brain wears away a little.

Suppose your kind of food does not contain Phosphate of Potash.

How are you going to rebuild today the worn-out parts of yesterday.

And if you don't, why shouldn't nervous prostration and brain-fag result.

Remember, Mind does not work well on a brain that is even partly broken down from lack of nourishment.

It is true that other food besides Grape-Nuts contains varying quantities of Brain food.

Plain wheat and barley do. But in Grape-Nuts there is a certainty.

And if the elements demanded by Nature, are eaten, the life forces have the needed material to build from.

A healthy brain is important, if one would "do things" in this world.

A man who sneers at "Mind" sneers at the best and least understood part of himself. That part which some folks believe links us to the Infiinite.

Mind asks for a healthy brain upon which to act; and Nature has defined a way to make a healthy brain and renew it day by day as it is used up from work of the previous day.

Nature's way to rebuild is by the use of food which supplies the things required.

"There's a Reason" for

Grape-Nuts

POSTUM CEREAL COMPANY, LIMITED, BATTLE CREEK, MICHIGAN, U. S. A.

FROM THE EDITOR

He Forgot That He Had a Stomach.

Talking of food, there is probably no professional man subjected to a greater, more wearing mental strain than the responsible editor of a modern newspaper.

To keep his mental faculties constantly in good working order, the editor must keep his physical powers up to the highest rate of efficiency. Nothing will so quickly upset the whole system as badly selected food and a disordered stomach. It therefore follows that he should have right food, which can be readily assimilated, and which furnishes true brain nourishment.

"My personal experience in the use of Grape-Nuts and Postum," writes a Philadelphia editor, "so exactly agrees with your advertised claim as to their merits that any further exposition in that direction would seem to be superfluous. They have benefited me so much, however, during the five years that I have used them, that I do not feel justified in withholding my testimony.

"General 'high living' with all that the expression implies as to a generous table, brought about indigestion, in my case, with restlessness at night, and lassitude in the morning, accompanied by various pains and distressing sensations during working hours.

"The doctor diagnosed the condition as 'catarrh of the stomach,' and prescribed various medicines, which did me no good. I finally 'threw physics to the dogs,' gave up tea and coffee and heavy meat dishes, and adopted Grape-Nuts and Postum as the chief articles of my diet.

"I can conscientiously say, and I wish to say it with all the emphasis possible to the English language, that they have benefited me as medicines never did, and more than any other food that ever came on my table.

"My experience is that the Grape-Nuts food has steadied and strengthened both brain and nerves to a most positive degree. How it does it, I cannot say, but I know that after breakfasting on Grape-Nuts food one actually forgets he has a stomach, let alone 'stomach trouble.' It is, in my opinion, the most beneficial as well as the most economical food on the market, and has absolutely no rival." Name given by Postum Co., Battle Creek, Mich.

THE ONTARIO FRUIT BELT

A Description of the Methods in Vogue Which Are Making the Farmers Wealthy

During some trips to western New York, I spent some time on a few of the most profitable fruit farms for the purpose of learning the methods which are making wealthy the owners of fruit farms which cover from 100 to 200 acres. There was every indication of prosperity on some of these farms, such as fine residences costly of equipment of machinery, implements, automobiles, etc. At a fruit growers' meeting in western New York, nearly every fruit grower came in an expensive motor car.

The Ontario fruit belt is a stretch of land along the southern shore of Lake Ontario, probably fifty to one hundred miles wide, which was once the lake bottom. Because of the rich deposit of plant food and the nearness of the lake, which so tempers the climate that the growing season without severe frosts is considerably longer than elsewhere in the same latitude; nowhere in the United States is the climate and the soil more favorable to fruit growing, and especially for producing fruit of high flavor.

I have selected two fruit farms in the Ontario fruit belt that are typical of those where the highest culture is practiced, and the largest margin of profits realized. J. B. Case of Sodus, N. Y., is well known as the ex-president of the New York State Fruit Growers Association, and as a very progressive and successful orchardist. His fruit farm of about 100 acres is about one mile from Sodus village on the New York Central Railroad.

As I remember there is about thirty acres of apple orchard on the farm, and several acres each of grapes, peaches, pears, plums, cherries, cane fruits, etc. Apples are the main crop, and are the principal source of Mr. Case's large income. He told me that one year with another he gets a larger profit from apple trees, although he gives all his fruits the highest culture. The varieties of apples mostly grown are Baldwins and Greenings.

As early in spring as the soil is in the best condition for working, Mr. Case begins cultivation with his gasoline tractor, which draws plows or two or more cultivators. When I saw the tractor in operation there were two heavy harrows attached to it, one something like the cutaway, that loosened the soil to a depth of several inches. This harrow was followed by a pulverizer and smoothing harrow that pulverized the surface soil so a layer of fine soil was left on top for an earth mulch, and the force of capillary attraction is made use of in bringing up underground moisture to the roots of the trees. The cultivation is continued until early in July, when a cover crop of red clover is sown. The clover is the main source of fertility for all the orchards, and about all the plant food purchased is a small quantity of high-grade commercial fertilizer to get the young clover well started in mid-summer.

RESIDENCE OF B. J. CASE, SODUS, N. Y.

Mr. Case grows all the tree fruits by practically the same methods of culture as the apples, i. e., thorough cultivation early in the summer, then sowing clover to furnish fertility, and a system of thorough spraying adapted to the trees. Trees like peach and plum with tender foliage are not sprayed with lime-sulphur wash when trees are in foliage, but with moderately weak solution of Bordeaux mixture.

All pruning is done when trees are dormant and in a way that allows the sun to shine on all the fruit. I noticed that the apple trees were mostly pruned to the low vase form, but were large trees with a large bearing surface of healthy, vigorous wood. The pruning is usually all done by March, so as to precede spraying.

Mr. Case said that on a valuation of $1,000 per acre, in an average year, the minimum net returns from his apple orchards were 10 per cent. My impression was that Mr. Case's statement was very low and that most years his net income was considerably larger from his apples.

Peaches, plums, cherries and pears he considers not so reliable for good yearly returns as apples, and hesitated in saying that their average net profit was as large. Grapes were evidently quite a profitable crop.

I spent a day in the orchards of Collamer Brothers at Hilton, N. Y. They own or operate about 200 acres of orchards, the greater part of which are apples, but there are large orchards of peaches, pears, plums and cherries. The methods of culture and spraying of the orchards are very similar to that practiced by Mr. Case, and the results, especially with apples, have been very satisfactory. The gross sales of apples have sometimes run as high as $1,600 per acre. The main difference between the practice of Mr. Case, and the Collamer Bros., seems to be in marketing fruit. Mr. Case, I think, grows mostly standard winter apples, and often sells the crop either on the trees, or to buyers who take them when the apples are picked. The Collamer Bros. grow, for the bulk of the crop, those varieties which mature late in fall, such as Twenty Ounce, and pick and market the apples themselves. This variety has proved the best money-maker for the Collamers, as it is a fine looking apple when well grown, and when held in cold storage, ripens so it is at its best in early winter for the holiday demand. These apples can be sold and realized from sooner than the late winter apples.

PEAR ORCHARD OF COLLAMER BROS., NEW YORK.

The story of the building of the Hilton cold storage plant, in which the Collamer Bros. are large stockholders, briefly told, is that the apple growers in the vicinity of Hilton, in years when they had large crops of apples to dispose of, were unable to realize well on them. Orchardists with thousands of bushels of apples to sell on an overloaded market, and no storage for them must take what the buyers offer, while if the apples could be held a month or two there would be time to look for best markets, when the price advanced. A few of the leading orchardists near Hilton saw that the solution of their problem was a cold storage plant, and called a meeting for the purpose of organizing a stock company to build and operate the plant. The result was a company was organized, officers elected, and sufficient stock sold to build the large plant they now own.

The stockholders I talked with were well satisfied with their investment, both as to dividends and the increased price they received for fruit held in cold storage. The cost for storage of apples for all is, I think, about 10 cents per barrel per month, and other fruits in about the same proportion.

New York. W. H. JENKINS.

THE IDEAL
Corrugated Paper
CUSHION
For Packing Apples

Absorbs the shocks in travel, and apples are delivered unbruised and as round and solid as the day they were packed. These add a tone of distinction, and cleanliness to any shipper's product, and the cost is so proportionately low that it will pay packers to investigate by simply sending for our catalogue and price list.

THE HINDE & DAUCH PAPER COMPANY
Department "3" SANDUSKY, OHIO

When the Appetite Lags
A bowl of
Post Toasties
with cream
hits the right spot.

"Toasties" are thin bits of corn; fully cooked, then toasted to a crisp, golden brown.

This food makes a fine change for spring appetites.

Sold by Grocers, and ready to serve from package instantly with cream and sugar.

"The Memory Lingers"

Made by
Postum Cereal Company, Ltd.
Pure Food Factories
Battle Creek, Mich.

The First Big Ben Cost $12.85

Big Ben is the result of 26 years of fine clock making. The first Big Ben cost $12.85 to make. The first hundred cost $6.50 each. But the great demand has brought the price down to everyone's pocketbook.

Buy Him Now for $2.50

Big Ben, the national sleep-meter, is arousing thousands of farmers on time. Everywhere, everyday, the gentle, insistent voice of Big Ben taps the "sleepy head" to joyous action. This "*minute-man*" starts the day with a smile. Big Ben never fails—he's on the job always. He rings 5 minutes straight, or at intervals of 30 seconds for 10 minutes. He tells the truth and gets you and the farm hands up "*on the dot.*"

Big Ben is *hand*-built, like a fine, thin-model watch, and "*time checked*" for 140 hours for *accuracy*. 1,055 skilled *watchmakers* build Big Ben—the *clock* that's the pride of the famous Westclox Community of La Salle, Illinois.

2,500 Big Bens now leave the factory every 10 hours and the demand gets bigger daily. Big Ben has ticked himself into popular favor because he is *built* right, *runs* right and is *priced* right.

Big Ben is sold by 16,000 jewelers. If you cannot find him at yours, send us $2.50 today and we will send him by return express, all charges prepaid. (132)

Big Ben

WESTCLOX, La Salle, Illinois

In writing advertisers please mention The Fruit-Grower.

The UPLANDS of ARKANSAS

$15 An Acre

$600 (Payable a Few Dollars Monthly) Will Make You the Owner of 40 Acres of Fruit Land As Fine As Any in the World

Reliable reports state that Arkansas is to have the biggest peach crop in its history—this in contrast with other fruit sections where only a partial yield will be obtained. It means that Arkansas fruit growers will repeat what they have been doing consistently for many years; that is, making a larger net profit on their fruit than orchard owners in nearly any other section. Everyone knows that the demand for Arkansas fruit is growing every year. The profits that are actually being made from well-cared-for orchards are almost unbelievable.

ALREADY WE HAVE SOLD 20,000 ACRES

And of all localities in this wonderful state that hold out great promise to fruit growers, none has more advantages than the Uplands of Arkansas. This is a 35,000-acre tract of land that the Fort Smith Lumber Co. began selling in small tracts a little over a year ago, at the exceedingly low price of $15 an acre. No better proof of the merit of this property could be had than the fact that in fourteen months we have actually sold 20,000 acres of the land in tracts ranging from 40 acres up. As we have explained in former advertisements, the reason the price is so low is because this company is in the lumber, not the land business. We purchased this tract many years ago for the lumber that was on it. This having been cut away, the land was idle, an immense spread of very productive soil that needed only development to cause it to yield as abundantly as any farming locality in the world.

WE WISH TO SELL THE LAND QUICKLY

We have no desire to make an exorbitant profit on the property—our plain purpose in making so low a price and offering the other advantages contained in our contract is to sell the land quickly and with as little trouble as possible.

Fruit land in Oregon is bringing from $400 an acre up; in Colorado from $400 to $2,500 per acre. In both of these localities more money is being paid yearly for irrigation privileges than the sum total of the cost of the land we are offering in Arkansas. And yet we challenge any expert fruit man to show why the Oregon or Colorado lands are better adapted for fruit than our property. We have the advantage of a plentiful and a certain rainfall; the advantage of a mild southern climate, which almost eliminates the danger of frost and smudging is seldom or never needed. Furthermore, there is the advantage of being able to conduct diversified farming, using part of your property for fruit, a part for the raising of other agricultural products, and a part for dairy farming and chicken raising. There is no locality in the United States better adapted for these latter two pursuits than this section.

Important Advantages

SOIL — Rich, deep, red loam, heavily impregnated with iron.

RAINFALL — Always plentiful; drouths unknown here.

LOCATION—Center of Arkansas, midway between Little Rock and Fort Smith. No part of the land is more than 2½ miles from the main line of the Rock Island Railway.

CLIMATE—Averages 85 degrees in summer and 40 in winter, always mild. Only 30 miles from Hot Springs, America's greatest health resort. Altitude 1,100 feet — no fever; no mosquitoes; no more healthful climate anywhere.

FREE LIFE INSURANCE—Upon the death of the purchaser of any part of the Fort Smith Lumber Company's tract, the company will give a clear deed of title to his beneficiaries, providing any and all payments in arrear at time of death be paid up in full. In other words, your family will own the land without further payment.

NON-FORFEITURE — Our contract provides that when a purchaser through an accident or adverse circumstances ceases the payments stipulated in his contract, the Company will give him the equivalent in land of the money he has already paid in.

OUR ASSISTANCE — We give settlers on our land every reasonable aid. We will sell him lumber, fruit trees and other necessities at wholesale, and we will give them our personal aid for any other reasonable cause.

EASY TERMS—We will give you six years to pay for 40 acres—in other words, you can pay for the land while you are developing it. We require a cash deposit of $3 per acre (payable in monthly terms, if desirable) before purchasers are entitled to the benefits of our contract. After this amount has been paid in you can finish the payments of your land at the rate of $7.86 monthly, which includes taxes and interest.

WHAT ONE MAN MADE ON STRAWBERRIES

As an instance of one productive side line, we call attention to the fact that one of the settlers on our property this year planted 6,000 strawberry plants which cost him about $3, and have brought $250 worth of berries.

Location, railway facilities, water, rainfall, climate, accessibility to great markets and soil—for all of these things, the fruit grower or farmer could not be situated to better advantage than in the Uplands of Arkansas.

Last summer, while many sections were being blighted by devastating drouths, the Uplands of Arkansas were producting banner crops. The government's report of rainfall for our section last summer was: April, 6.64; May, 1.54; June, 1.38; July, 2.92; total, 13.48 inches.

IMPORTANT MARKETS EASILY ACCESSIBLE

On account of the climate crops mature much earlier than in other sections. Important markets are close and easily accessible. No portion of our land is more than 2½ miles from the main line of the Rock Island, and fruit leaving our section one morning can be placed in Chicago, St. Louis or Kansas City the next. Memphis, 200 miles to the East, offers water transportation to any part of the world. Another definite advantage is the climate, which is positively unsurpassed for health and comfort. The altitude is 1,100 feet—this means that the atmosphere is always dry and healthful—high enough to bring it within reach of the Gulf Coast breezes and out of the swampy, malaria-breeding river bottoms. Malaria, typhoid and other kindred diseases are unheard of; Hot Springs, the greatest health resort in the United States, is only 30 miles south of us. Children can live out of doors practically the year round; cattle and hogs can be pastured every month in the year; the farmer saves immense amounts as represented in barns, sheds, fuel and clothing.

SURE TO INCREASE IN VALUE

Then there is the investment advantage; Arkansas property is increasing in value at an amazing rate. A few years from now you will not be able to buy land anywhere in this state for as small a price as we are now offering. It is not too much to say that the value of this land will increase ten times in the next ten years. Arkansas is attracting attention all over the country.

There need be no doubt in your mind as to the truth of the statements we make in this advertisement, or of the reliability of the company which sets these facts down. You can easily investigate our responsibility by writing to any of the following: The American National Bank, Fort Smith, Ark. (J. W. M. Boone, president); Badger Lumber Co., Kansas City, Mo. (L. L. Seibel, president); First National Bank, Kansas City, Mo. (E. F. Swinney, president); New England National Bank, Kansas City, Mo. (J. F. Downing, president); Pioneer Trust Co., Kansas City (Walton Holmes, president), or by referring to Dun's or Bradstreet's at Plainview, Ark.

IMPORTANT—A representative of The Fruit-Grower has personally visited and investigated this land and pronounced it unexcelled for fruit growing purposes. A copy of his report will be sent you on request.

PHIL R. TOLL

Fort Smith Lumber Co.

204 Midland Building Kansas City, Mo.

Extracts From Letters We Have Received

"I have lived in this section fifteen years and consider the opportunities for the poor man greater in this section than in any other part of the United States."—Extract from a letter from Mr. D. F. Towell, Ola, Ark.

"I consider this land to be worth twice what I paid for it."—Extract from a letter from Mr. A. J. Witt, Little Rock, Ark.

"Any crop known to the American farmer can be grown here, and I consider I made one of the best investments of my life when I bought the quarter section from you."—Extract from a letter from Mr. D. W. Parker, Ola, Ark.

"I bought this land at $15 an acre, and think in five years it will readily sell for $100 per acre."—Extract from a letter from Mr. J. C. Witt, Pine Bluff, Ark.

"We have an ideal climate and the best of water."—Extract from a letter from W. R. Brewer, M. D., Ola, Ark.

"I am a land owner in this county, and I can honestly recommend this land to the investor and the homeseeker."—Extract from a letter of Mr. J. C. Tawney, Jr., Ola, Ark.

"The best evidence of my belief in your proposition is the fact that I purchased forty acres each, for myself, my father and two brothers."—Extract from a letter from Mr. Otis Stark, Kansas City, Mo.

"A great advantage of this land is the transportation facilities—12 to 24 hours to the leading markets in the United States."—Extract from a letter from Mr. Opal N. Harkey, Ola, Ark.

"I consider this land the very best fruit land in the state, being priucipally on the north slope, which is a sure protection from frost in the late spring."—Extract from a letter from Mr. A. L. George, Ola, Ark.

"I have had an offer of $1,800 for the very same land that I purchased from you for $600."—Extract from a letter from Mr. C. P. Hopkins, Russellville, Ark.

"I saw stock farms where fine horses and mules were raised, and sheep, hogs and cattle thriving. They have a fine climate and stock graze the year around. The Fort Smith Lumber Company have the finest proposition for a poor man that I ever saw, and great numbers are taking advantage of it."—Extract from a letter from Mr. G. W. Myers, Barry, Ill.

"The most exacting farmer or agriculturist and horticulturist can be satisfied in this tract of 35,000 acres that is being offered by the Fort Smith Lumber Company. The company have not overstated the proposition. It is better than advertised."—Extract from a letter from Mr. H. H. Graham, Kansas City, Mo.

"I do not think there could be any finer ground for fruit and chickens than the Uplands that I went over, which the Fort Smith Lumber Company is offering for sale. The water is the best that I ever drank. The lay of the land reminds me very much of the agricultural lands of Illinois and Indiana."—Extract from a letter from Mr. I. H. Guber, Kansas City, Mo.

SEND FOR OUR FREE BOOKLET

It gives all the facts, and is a conservative statement of what our land offers and contains many illustrations taken on the property. Cut off the coupon and send it to us. The book will be sent you by return mail.

NAME.....

ADDRESS.....

F-G—5

THE FRUIT-GROWER
ST. JOSEPH. MISSOURI

Title Registered in U. S. Patent Office. Bro. Jonathan—Trade-Mark—Registered

Copyright, 1912, by The Fruit-Grower, St. Joseph, Mo.

Address all communications and make remittances payable to "The Fruit-Grower," Eighth and Charles Sts., St. Joseph, Mo.

WM. G. CAMPBELL, General Manager JAMES M. IRVINE, Managing Editor
E. H. FAVOR, Associate Editor

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....J. C. BILLINGSLEA.....First Nat'l Bank Bldg.
New York Office..... A. H. BILLINGSLEA.....No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS.....New York Life Bldg.
St. Louis Office.....A. D. McKINNEY.....Third Nat'l Bank Bldg.
Minneapolis Office..... ROY R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents Agate Line. $7.00 per Inch. Fourteen Lines to an Inch.
Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.

No advertising in class generally termed "Objectionable" accepted under any conditions. Editions mailed on first day of month. Forms close on 20th of preceding month, i. e., January forms close December 20th, etc.

An Advertisement in The Fruit-Grower will place you in touch with One Hundred Thousand of the Most Prosperous Farmers in America

SUBSCRIPTION RATES

Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c, or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list.

Remit Coin, Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 JUNE, 1912 Number 6

What Missouri Needs.

Lately we have had a lot of letters from subscribers which contained some mighty good suggestions. We want to quote from a letter received from a Missouri grower—not a large orchardist, but one who believes in caring for his trees. He says:

"Missouri fruit growers need a lot of training, and if they cannot be persuaded to care for their trees they should be compelled to do so. We can grow as fine apples as are produced anywhere, but not under existing conditions. For instance, I have a four-acre orchard and do everything I can to grow perfect apples. My work is largely offset by the condition of my neighbors' orchards. On the north of me a neighbor has six acres of apple trees, overgrown with weeds, brush, grass and briars; on the east is an old abandoned nursery amounting to three or four acres; on the south is an old Geniton orchard with some surviving trees; on the west of me is a farm occupied by a negro, and he has a few neglected trees. My four acres are completely surrounded, and care for my trees as I will, they are still a prey to the pests which come over from my neighbors' orchards. I am fighting canker, codling moth, San Jose scale, woolly and green aphis, apple scab, etc., and if my neighbors were doing the same thing we could control these pests, but not under present conditions."

What this subscriber says is true, and it applies to conditions in practically every state east of the Rocky Mountains. Because of this condition many horticultural authorities are of the opinion that the old-fashioned farm orchard is doomed. They contend that pests will increase until state laws will be enacted requiring orchards to be cared for, and when this is done many farm orchards will be cut down. Theoretically, every farm should have an orchard, but practically it should not, unless the owner will take care of it, and this the average farmer is not willing to do.

Perhaps the condition of which our subscriber complains is one of the chief reasons why the Western and Northwestern states are leading in the production of high-grade apples. There the orchardist is a specialist, and he takes care of his fruit.

Get Ready for Drouth.

Some time this summer there will be a period of a few weeks when the rainfall will be short and crops will suffer for the want of moisture. It happened last summer more severely than for several seasons past. It happens to a less extent and over a smaller area every summer and results in losses of no small consequence to gardens and small fruits as well as grain.

There are means within easy reach of everyone who cultivates the soil, to materially reduce the damage which is done by these protracted dry spells. In regions of scant rainfall in the western portion of the United States, crops are regularly grown on soils which receive less rainfall during an entire year than lots of the Eastern states will get in an average month. This is done, too, without irrigation.

It is well known that the soil under a well-packed road is dryer in a dry spell than the soil in a cultivated field. Through the hard-packed soil the soil moisture rapidly evaporates, but the loose earth on the cultivated land serves as a protecting coat which keeps the soil moisture from reaching the surface. Here, then is the secret of avoiding those heavy losses which come from drouth. Cultivate — stir the soil over the fields. Keep a loose surface between the rows of berries and vegetables. The loose soil will prevent the moisture from reaching the surface to evaporate and holds it where the plant roots can reach it. Many berry growers in the Middle West saved their fields by this simple practice last summer. Many more will derive benefit in the same way this summer.

The farmers in the region of scant rainfall appreciate the importance of frequent cultivation more than do those where rainfall is abundant, but the principle is the same in all locations, and the practice should most certainly find wider application in the Middle West where protracted drouths during the summer are most damaging.

Behind Time.

The spraying season is in full blast. More spraying is being done this year than ever. Many fruit growers are spraying this year who never before held a spray rod. A large number of others intended to spray, but waited too late to get their materials and equipment. To be effective spraying must be done at the right time and the right materials must be used. It is queer some people do not appreciate this fact—simply can't get it through their heads that there is no one great cure-all for every ailment of plants.

There is a limit of usefulness of any spray material just as there is in the remedies for the ailments of mankind. Asenate of lead will not control San Jose scale, neither will bordeaux mixture control the codling moth. Yet there are growers, and Fruit-Grower readers, too, who are using these materials for just such purposes! But worst of all is the man who waits until the last minute and then makes a frantic effort to get the supplies he needs, only to find that the market is bare or that the damage has been done before the remedy is applied. His intentions are good, but he is behind time.

Trap the Sparrows.

That the English sparrow is a pest goes without saying. It is now found in almost every city in the United States, and in almost every farming community. It was introduced into America a little more than seventy years ago, but like the San Jose scale, its extraordinary fecundity, diversity of food and immunity from natural enemies has led to its rapid dissemination. It is the only bird which is a pest to the entire country. It is a pest in the cities because of the incessant chatter it keeps up every day in the year and by the large masses of inflammable litter out of which it constructs its nests. In the orchard it destroys fruit, in the garden it nips off young seedlings, in the fields it damages the ripening grain, and wherever it is found, its quarrelsome disposition reduces the numbers of attractive song birds.

In Farmers Bulletin No. 493 the United States Department of Agriculture describes means of effectively combatting the English sparrow, and many persons who have suffered losses through this bird nuisance will find means of relief. Trapping is regarded as the most effective method of dealing with these little birds, and several easily made traps are described. Let us hope that the suggestions contained in this bulletin will be generally adopted, and that this little chattering foreigner will become less numerous in the years to come.

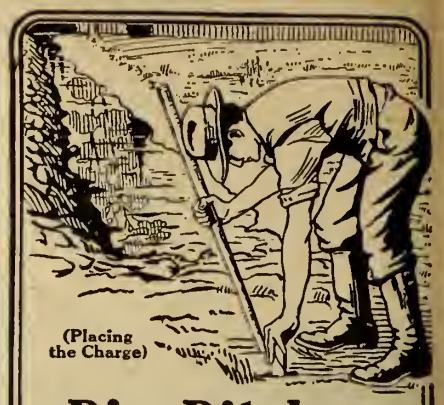
The Small Package.

Right now is the time to get ready for the grape, peach and apple harvest. Right now is the time to lay in the supply of packages that will be needed this fall. On account of the exceedingly heavy crop in every state the makers of fruit packages will be worked to the limit, and the early orders will be the only ones which will be sure of bringing the goods on time. Packages will be in heavier demand than ever this summer, but even then there will be a world of bulk fruit to be disposed of, or perhaps even left to rot on the trees. The ones who will get the fancy price will be the ones who use the greatest care in growing their fruit, then grading with extra care, and packing in the most attractive manner. New styles are being developed in fruit packages which it will pay to investigate. In the last issue of The Fruit-Grower a carton package for apples was described. From several letters which have reached this office, there appears to be a well felt need for just such a package. In the fancy fruit market the carton for fruit offers great possibilities, and we want to hear from every reader who has used small packages for fruit or vegetables. What kind of a package was used? How was it liked by the buyer? What price did fruit so packed bring over that sold in the usual manner?

Good Apple Yields in Pennsylvania.

Mr. Joseph E. Frischler, a Fruit-Grower subscriber living in Tioga County, Pa., says that proper methods will produce apple crops in Pennsylvania which will compare very favorably with some of the big yields reported from the West. Mr. Frischler has one small orchard containing one acre, which, last season, produced $446.70 worth of apples, net above cost of package and packing. The apples sold for $2.00 per barrel, net, the yield from the acre being 640 bushels of first-class fruit, besides 100 bushels of windfalls and inferior apples, which sold for 40 cents per hundred.

"This isn't a remarkable showing, but it is as much net money from this acre of ground as many farmers made from their entire farms. Most of our farmers will not care for their trees as they should, but it certainly pays to give an orchard the very best care."


(Placing the Charge)

Dig Ditches WITH DU PONT Red Cross Dynamite

Costs less than half of shovel method. Ditches 100 ft. to 200 ft. long excavated in an instant. One man can do the work. No re-shoveling of dirt necessary.

Booklet Free

To learn how progressive farmers are using dynamite for removing stumps and boulders, planting and cultivating fruit trees, regenerating barren soil, ditching, draining, excavating and road-making, ask for **Farming With Dynamite, No. 36**

DU PONT POWDER CO.
PIONEER POWDER MAKERS OF AMERICA
WILMINGTON, DEL.

(The Blast)

1912 BIG Buggy Book FREE

30 Days' Road Test —2 Years' Guarantee Made to order

Phelps' buggies are famous everywhere Owned by over 150,000 Farmers WRITE TODAY TO H. C. Phelps, Pres.

Phelps pays the postage on his 1912 book to you

It shows you more buggies than 25 big stores, saves you an average of $25 or up. From largest factory in the world selling vehicles direct.

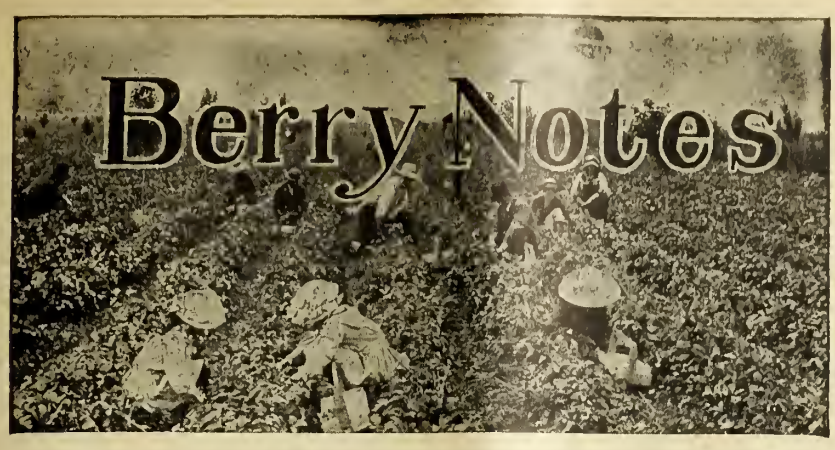
Split Hickory Vehicles

The Ohio Carriage Mfg. Co. Station 46 Columbus, O.

FREE BARGAIN BULLETIN

Every Month

Before you build get our prices. Smashing reductions in **LUMBER** 3,000,000 Feet—new and used. Every grade and dimension. Write today and we will send you free regular monthly list showing everything—doors, windows, roofing, paint, hardware, etc. 500 Items. HOUSEWRECKING SALVAGE & LBR. CO. 1731 Troost KANSAS CITY, MO



The first local strawberries are now coming in to market and, like all first fruits of the season, are greatly relished. They are nearly all Michel's Early this year and this means that they are a fine table berry. Excelsior has beauty and shipping qualities, but doesn't compare with its rival in flavor. They are retailing at 15c per quart, two for 25c, at this date, May 15th.

We have still many fine points to learn about the strawberry. Perhaps I have mentioned it in some former notes that by far the heaviest crop of Michel's I ever raised and in fact the heaviest I ever saw it produce anywhere, was on a low, moist piece of ground, highly fertilized with stable and hog-pen manure. On such ground Michel's would ordinarily all go to runners and tops, but this time the berries piled up around the plants in an unparalleled way. I counted as many as 150 berries on one plant.

Now how shall we explain this? There was one departure from usual methods; the plants were set out late the spring before, made a slow growth and developed most of the runners in the fall. This remarkable crop, then, was the product of late runners which did not have time to form in large numbers, but which did have time to form fruit buds in abundance.

Ozark was not satisfactory here last

THE ERIE, A FINE MAIN CROP VARIETY.

year, but the drouth impaired all trials of new varieties. This year it is really not doing as well. It made a fine show at blooming time and in setting berries, but I find these berries now to be rough and nubbiny, and not overly numerous. Apparently the Ozark is not a success here, judging from its first two seasons. The other sorts are not far enough along to indicate what the outcome will be.

We have been going through the rows pulling out weeds among the plants and using the hoe along their sides when needed, as well as in the middles to cut down large growing weeds. A foul patch offends the eye and the weed robbers steal the water supply of the plants and stunt the berries. In doing this we pull the cut weeds and litter up against the plants on both sides of the row, so as to provide a mulch that will retard the drying out of ground while the fruit is ripening and being picked and afford a clean support for the outlying berries. This is an important safeguard for if the ground is scraped and left bare, it will harden up and form a vent for the passing away of the subsoil water.

Blackberry rust is receiving attention now as it makes its appearance on the young shoots of spring growth. Their leaves when affected have a peculiar crimp that is easily recognized quite a while before the spores of the rust make their appearance on the under side of the leaves and begin to turn red as they ripen. When fully ripe, they will fall in a shower like dust, when jarred, and floating about in the air will, if they happen to alight on a leaf, infect it. This infection will not be discernible till the next spring, when the young shoots come up so that we cannot tell one season what damage the next one will reveal.

The rust is confined entirely to the Mersereau, while the Erie, Eldorado and Taylor's in the same patch are unharmed. I find none at all in the plot of Early Harvest or that of Early King, but a single one among a short row of the new Watt's. I have been informed that this variety was subject to the rust in Kansas, where it originated.

The question arises, why bother with kinds that will rust when there is a fine and large assortment, in fact, the larger part of the list of known sorts that do not rust at all or not to a serious extent? Well, the answer to that question appears to be man's craving for something new and also the fact that the most susceptible kinds, the Kittatinny and Mersereau, are the finest of their family. But really I think it would be the part of wisdom to banish rust from our own farm and if possible from our neighborhood by avoiding such sorts.

I regret to say that the Robinson, from Texas, succumbed to the winter and was killed to the ground. How many degrees will it stand? I hope others will report on it. Last year T. B. Bundy of Wayne County, Mo., stated that it had never winter killed or rusted during the several years that he had grown it. The Robinson had been winning many good opinions and if it prove more tender than our present standards, it is at least desirable to ascertain the farthest degree of latitude at which it will prove hardy.

The King red raspberry was killed to the ground; so was the Worthy. The Cuthbert and Loudon and Miller showed little inujry. The new Manitou was killed, but was not of much value anyhow. Mr. Endicott of southern Illinois says my plants are seedlings and sent me some that he vouched were genuine stock and which he esteems highly after testing all the common kinds.

Mr. Wm. Brown of Kansas writes me that "the new Syracuse and Manitou killed to the ground; Loudon and Cuthbert not hurt much; St. Regis uninjured. (This was also true of my specimens which seems to prove this reputed ever-bearer to be ironclad.) Early Harvest blackberry about half killed; Mersereau, a few killed; the Loganberry and Mammoth blackberry discarded; the Maxwell and Robinson were discarded several years ago; the former bush too small and berries too soft, the latter too thorny and winter-killed to the ground. The Kenoyer was also discarded. I do not like to discard the Early Harvest until we find something better to take its place; it rusts and winter-kills some every year with us. Years ago I dropped the Early King for the Early Harvest."

Mr. Brown confirms the fear that the Robinson is not as hardy as the old standards. A half mile from here a neighbor reports his Early Harvest badly killed back, while mine, although fully exposed to the north, were injured but little. The Early King winter-killed here to some extent and for the first time, but readers of these notes know that I value it very highly as a second early without a rival, but it must have rich soil and good culture. It will not flourish under neglect like other kinds.

I see J. T. in the May Fruit-Grower comes to the rescue of the Himalaya blackberry by explaining that there are three varieties, and that the hardy or Giant Himalaya has only been sold since spring of 1910 east of the Rockies. It is a pity that this information comes so tardily. Why did those who knew the true state of affairs remain silent all this time?

We are now going over the blackberry and raspberry rows, pinching back the young shoots. The middles have all been plowed and cultivated and the next thing will be to hoe them out. I set out 250 Robinson, but shall plant no more on account of their lack of hardiness. My next planting for main crop will be Erie, Ward and Snyder and for late Eldorado and Taylor's Prolific.

A fruit grower from Illinois asks what to do for the root knot or gall on red raspberries. So far as I can find there is no cure for the root gall and grubbing out and burning the plants is advised. Usually the presence of the gall can be detected when plants are received in small nodules on the roots. I should hardly want to plant any of such a lot. I had the same experience once, but sorted out those showing the gall before planting. Afterwards I grew so fearful of impregnating the soil with the germs of this disease, of which it was perfectly free, that I dug up those planted and destroyed the whole lot, not reserving a single plant. I have been growing the Loudon for years, said to be most susceptible to the gall, without a sign of the disease, and feel fortunate that it has never been introduced here in the numerous plants purchased from all over the country.

Missouri. L. R. JOHNSON.

Apply Nitrate of Soda to Strawberries.

In the April Fruit-Grower a subscriber asked the best way to apply nitrate of soda to strawberries, so there will be no danger of the foliage being burned. Another subscriber, J. W. Herman, Alabama, gives his plan, as follows:

'Screen the coarse lumps out, and then with a fine sieve screen the remainder to get out the powdered substance. This will leave the nitrate of soda in a granular form. Apply this over the rows of plants when the latter are perfectly dry, and have someone follow with a feather duster on a light, long handle, and brush the nitrate off the plants. One man can scatter the fertilizer as fast as he can walk, and the other man can keep up with him. By following this plan no damage will result, for the particles of nitrate of soda will drop off on the ground. I have practiced this method for several years, and have had no injury to plants.

AETNA DYNAMITE

MAKES ALL YOUR LAND WORK FOR YOU

FARMERS: Don't continue to waste taxes on that old stump-filled field. Every cent you pay out in taxes of that sort is so much money thrown away. And don't try to clear the field with stump-pullers, teams of horses and farm-hands.

Save the great labor and the money that the old process costs and remove the stumps in a day or so by the use of AETNA DYNAMITE. Make that field ready for the plow in a week, at the utmost.

AETNA DYNAMITE means efficiency on the farm. It sweeps away big boulders in a breath, *digs your ditches* for you while you wait, and the cost is so small in comparison with the old way that you'll be amazed when you are told.

If you have been told that dynamite is dangerous to handle, hard to transport and easily exploded by fire or jar, then you've heard about some other dynamite than ours.

Get AETNA DYNAMITE wise. Send for our illustrated booklets describing definitely the many uses of dynamite on the farm and showing the process of stump blasting, ditch digging, boulder removing and other things that you ought to know in order to turn waste into profit.

The Aetna Powder Co.
General Offices, Tribune Bldg.,
Chicago, Ill.
For quick attention address Department R

In writing advertisers please mention The Fruit-Grower.

FRUIT BOXES *and* BERRY CRATES

Car Lots a Specialty
Correspondence Solicited

THE DALLES BOX & LUMBER COMPANY
THE DALLES OREGON

KEES FRUIT PICKER

GATHERS APPLES, PEACHES, TOE. as carefully as by hand with less work. Saves climbing ladder. No fruit out of reach. No wires to injure fruit or tangle in branches. Fruit drops into cloth bag, which can be filled before lowering. Price complete, except long handle (a fish pole will do), 75c, postage paid. Your money back if not O. K. Address Box 425.

F. D. KEES MFG. CO. BEATRICE NEBRASKA.

Circular sent on request.

Apple Boxes

THE WESTERN WHITE PINE BOX the high-class package for apples. Growers: This box lumber doesn't warp in sun, rain or in cold storage. Provide for wants early to meet the large apple crop. Address

California Pine Box & Lumber Co.
San Francisco, California
GINOCCHIO-JONES FRUIT CO.,
Agents for Missouri. Kansas City, Mo.

$29.50 Buys This Elegant Top Buggy.

WARRANTED FOR Five Years.

Retail Price $60.00. Buggies, Surreys, Spring Wagons, Farm Wagons. We have cut out our Jobbers, our Wholesalers and our Retailers and offer YOU their profit. Write today for our

Free Catalog and Delivered Prices.

Mutual Carriage & Harness Mfg. Co.
Station 35-J East St. Louis, Ill.

No-Rim-Cut Tires—10% Oversize

Ten Years Spent Getting Ready for This Sensational Success

No-Rim-Cut tires have seemed to come like a meteor into the leading place in Tiredom. In two years the sales have increased 500 per cent. They have trebled in the past 12 months.

Now these new-type tires by far outsell any other tire in existence. But this, remember, is our 13th year. Some of those years were spent in darkest obscurity. Ten of those years were spent perfecting this tire.

So this amazing success has big reason behind it. It has come through slow progression.

Testing 240 Materials

We started tire making 13 years ago by bringing to our plant the best experts we knew. And we kept on bringing them. For nobody knew in those days how to meet automobile conditions.

To prove ideas quickly, we built testing machines, where four tires at a time are worn out under every road condition.

There we have tested some 200 fabrics—some 40 formulas for treads.

There we have tested every method of making, of wrapping, of vulcanizing.

Every material and method was compared by actual mileage, on this metered machine of ours. Thus year after year we increased tire mileage, and lessened tire troubles. Thus we finally brought the Goodyear tire about as close to perfection as men ever will get it.

Cutting Tire Bills in Two

Then we started on other savings. Records on thousands of ruined tires showed 23 per cent had been rim-cut.

This led to the invention of No-Rim-Cut tires. This patent type has made rim-cutting impossible. It saves tire users that 23 per cent, by a method which we control.

10% Oversize

Next we dealt with blow-outs, due to overloading tires. We made No-Rim-Cut tires 10 per cent over the rated size.

That means 10 per cent more air—10 per cent added carrying capacity. And that, under average conditions, adds 25 per cent to the tire mileage.

These two features together, with tens of thousands of motorists, have cut tire bills right in two.

8½% Profit

Then we aimed to sell these perfect tires for the least price possible.

Our multiplied output aided in this. So did our modern equipment

No-Rim-Cut tires used to cost one-fifth more than other standard tires. We have brought them to an almost equal price. And our profit last year, despite all our facilities, was but 8½ per cent.

200,000 Users

It was ten years from the start before men woke to these tires. Then one told another, and the tide of demand developed like a flood.

Now over one million have gone into use. Sales have doubled three times in two years. Now some 200,000 motor car owners insist on these premier tires. You will also insist when you know them.

GOODYEAR
AKRON, OHIO
No-Rim-Cut Tires
With or Without Non-Skid Treads

Our 1912 Tire Book—based on 13 years of tire making—is filled with facts you should know. Ask us to mail it to you.

The Goodyear Tire & Rubber Company, Akron, Ohio

Branches and Agencies in 103 Principal Cities **We Make All Kinds of Rubber Tires, Tire Accessories and Repair Outfits**

More Service Stations than any Other Tire. Main Canadian Office, Toronto, Ont. Canadian Factory, Bowmanville, Ont. (641)

THE USE OF HYDROMETER

A great many orchardists are coming to use the Beaume hydrometer for testing the strength of both home made and commercial lime-sulphur solutions especially since this preparation is becoming so important in our spraying operations.

There are still many who do a considerable amount of spraying every season who would find this instrument a valuable one to aid in determining the density of the concentraed solution when buying and for diluting to the proper strengths for winter and summer spraying. It will prove of value if employed only as a check when we use our formulae such as one gallon of lime-sulphur to nine gallons of water for the San Jose scale, for by dropping the hydrometer into the solution after diluting and taking the reading on the Beaume scale we can tell in a moment whether the mixture is of the desired strength.

The hydrometer readings are based upon the principle that the larger the amount of material we have dissolved in a liquid, the denser it becomes and the greater its specific gravity. Pure water is taken as the standard, its specific gravity being 1. The greater the amount of lime and sulphur dissolved in the water the greater its specific gravity reading on the hydrometer.

The Beaume hydrometer which is in general use has an arbitrary scale reading from 0 to 38 degrees, the 0 representing the same density as a specific gravity reading of 1 and the 38 degrees being the same as a specific gravity of 1.35. There are two types of hydrometers on the market today designed primarily for the orchardist—the New York and Pennsylvania patterns. The former consists of two in the lime-sulphur solution to be tested. degrees Beaume which is used for diluting and the other reading from 25 to 38 degrees Beaume and used for determining the density of the concentrated lime-sulphur solutions as they are purchased from the manufacturer. The Pennsylvania pattern consists of but one instrument which has the entire Beaume scale reading from 0 to 38 degrees and for this reason it is generally preferred to the New York pattern as it is more convenient, all readings being taken on the one instrument.

The takings of the readings with the hydrometer is very simple. A glass cylinder 1½ inches in diameter and 12 inches high is filled nearly full with the lime-sulphur solution to be tested. The hydrometer is then placed in the liquid and the reading taken at the general surface. Commercial preparations that we find on the market test from 28 to 35 degrees Beaume. The concentrated home boiled preparations usually tst from 22 to 36 degrees if correctly made.

When buying commercial lime-sulphur its approximate value can be determined by referring the hydrometer reading to the following table:

Relation of Hydrometer Reading to the Value of Concentrated Lime-Sulphur Solutions.

Hydrometer Reading, Deg. Baume.	Combined Sulphur in Solution	Approximate Value of 50 Gals. of Lime-Sulphur
33	25 Pct.	10.80
25	19 Pct.	$ 7.60
26	19.8 Pct.	8.00
27	20.6 Pct.	8.40
28	21.3 Pct.	8.80
29	22 Pct.	9.20
30	22.8 Pct.	9.60
31	23.6 Pct.	10.00
32	24.3 Pct.	10.40

For example if the concentrated solution that is purchased on the market tests 31 degrees Beaume there will be 23.6 per cent of combined sulphur in the mixture and it will be worth $10 per barrel of 50 gallons.

The hydrometer is also used for determining the number of times that a concentrated solution of lime-sulphur of a certain strength should be diluted for summer and winter spraying. The following table gives the number of dilutions for concentrates testing from 18 to 35 degrees.

Dilution Table for Winter and Summer Spraying With Lime-Sulphur.

Hydrometer Reading, Deg. Beaume.	Number Gallons of Water to One of Lime-Sulphur. For San Jose Scale	Summer Spraying of Apples.
35	1 to 9	1 to 45
34	1 to 8¾	1 to 43¼
33	1 to 8¼	1 to 41½
32	1 to 8	1 to 40
31	1 to 7½	1 to 37¾
30	1 to 7¼	1 to 36¼
29	1 to 6¾	1 to 34¼
28	1 to 6½	1 to 32¾
27	1 to 6	1 to 31
25	1 to 5¼	1 to 27¾
24	1 to 5	1 to 26
23	1 to 4½	1 to 24¼
22	1 to 4¼	1 to 22¾
21	1 to 3¾	1 to 21¼
20	1 to 3½	1 to 19¾
19	1 to 3¼	1 to 18¼
18	1 to 3	1 to 17

The lime-sulphur solution after diluting according to the above table should test about 4.5 degrees by the hydrometer when diluted for the San Jose scale and about 1 degree Beaume for the summer spraying of apples.

These hydrometers can be secured from several firms who advertise in this paper or from your local druggists. The price of the New York pattern consisting of two instruments and a glass cylinder, is about $1.25 and that of the Pennsylvania pattern, consisting of one instrument and a glass cylinder, is about $1.00:

Indiana. J. G. BOYLE.

The Oyster Shell Scale.

The Division of Entomology of the State Agricultural Experiment Station, at Pullman, Wash., gives the following timely information concerning this destructive pest:

The oyster shell bark louse is quite a common pest throughout Western Washington and also occurs in many of the orchards in Eastern Washington, especially those of higher altitude. The oyter shell seems to prefer an elevation of above 2,000 feet or else where considerable moisture is present, while the San Jose scale seeks the localities below 2,000 feet and where there is little moisture in the air. The oyster shell differs from the San Jose scale in its method of reproduction. There is but one generation of the oyster shell each year. In the fall, under each of the scales you will find produced about one hundred eggs or less. These remain over winter and about the early part of June will hatch out. The young scales then crawl over the tree and locate on some suitable place of the bark where they remain for the rest of their lives. With the San Jose scale as many as four hundred young are born to each mother and there are at least ten generations in the year. It is this difference in reproductive ability that makes the San Jose scale such a dreaded pest.

The usual treatment for the oyster shell bark louse is to spray with the sulphur-lime wash any time during the winter This wash acts through the shell and will kill the eggs beneath. Sometimes, however, especially if the wash is scantily applied, it has proved quite insufficient in checking the pest. It would seem as if the old-fashioned sulphur-lime, containing a great excess of lime, would work better than the clear sprays now in use. The excess of lime has the effect of raising the scale on drying and that exposes the eggs to the action of the wash and also to the action of the weather. If the eggs are not killed and the young appear in early summer, a tobacco wash has given the best satisfaction. Blackleaf, used 1 to 70, or Blackleaf-40, used 1 to 70, is a dependable spray. Any tobacco spray has its effect greatly increased by the addition of soap, and of the soaps those known as cresol or lysol seem best.

If there are no other pests than the oyster shell, red spider and aphis present, the tobacco treatment in early summer will be preferable to the winter spray of sulphur lime.

Subscription expired? Renew today.

LEWISTON, IDAHO, NOTES

Our land slopes to the north and west, and as the pipe lines which supply the water for irrigation are in the alleys, we have two three-inch wooden pipe lines extending from the alley to the front of our ten-acre tract. In irrigating we use small streams, so as to keep the ground from cutting, and to give everything a good soaking. We find that in running the water the 600 feet across our tract, the ground in front absorbs more water than necessary, before the water gets to the back end. To avoid this we put in a driveway 350 feet back from the front, and placed two hydrants so that they would each water the two acres which lie below them.

All we have to do in order to put in a hydrant is to bore a hole in a three-inch pipe whatever size we want to put in, and then screw in a piece of galvanized pipe. We have a hydrant for the stock, one for the hothouse, one for the lawn, etc.

Our threatened freeze did not materialize, and the outlook for fruit is fine. No smudging was required at all, something unusual for here. A cloudy, wet spell, we had at the time the sweet cherries were in bloom, which caused them to drop badly, has been all the damage we have heard of. The peaches fell off some and that will save us the job of thinning so much. We picked our first gooseberries for market today, May 13th.

The wet weather caused the ground to bake badly, and we either cultivated or raked everything we could, to loosen up the soil and keep it in good condition. We took the rake and raked the ground planted to melons, and they are coming up nicely. It took a little time to do it, but paid mighty big.

Since we have been in Idaho it has been seldom that the same thing paid best two years in succession. Some years there is a demand for one thing, and some years another. If we were to specialize on onions, that would sure be a year you could hardly give them away, and the next year it would be something else, so we plant an assortment and get something out of each and have them coming it all the time, and one can handle them with much less expense.

The raspberries that were hurt from the winter freezing, that we trimmed back so hard last February, put out new shoots and look fine, and are just about to bloom out. The chances are we will have nice large berries, while if he had just tipped them, we would have been apt to have had small, woody, unsalable berries. It is the good fruit that sells well.

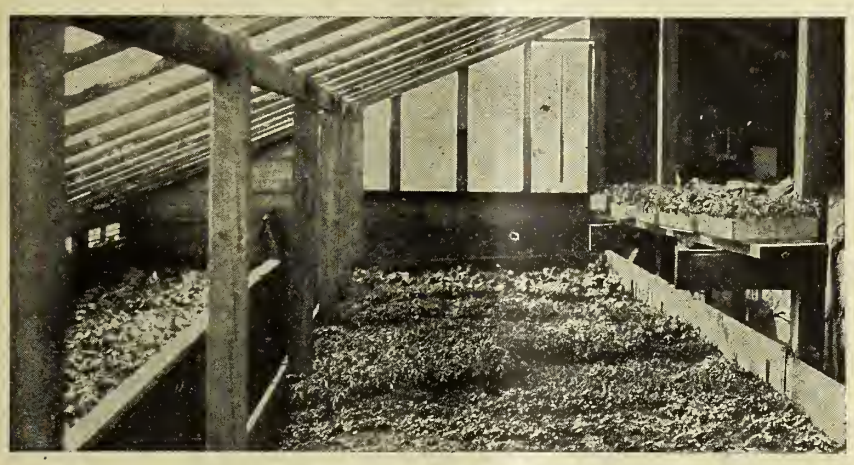
The rainy weather kept the weeds coming, and we notice it keeps the company hustling to keep ahead of them. One of their engines is working in a 160-acre field within one-quarter of a mile of our place, pulling Kimball weeders with harrows behind them and two five-tooth cultivators, with a man guiding them and working right up to the trees. We notice it is going from early in the morning until late at night, and last Sunday it was going just the same. That is where an engine beats the horses so bad, as in a pinch you can keep them going without tiring them out and no matter how hot it gets, they keep right on going.

In the notes from Morrisania the writer said he was going to plant alfalfa in the orchard. If he has as hard time getting rid of it as some we have, we believe he would change his mind. We plowed up two acres in its fourth year, and it was a big job. We plowed it with three horses, but had to rest them about every 100 feet, and then they looked like they had been run through a threshing machine. It would take six mighty good horses to keep going right along with the plow. With ours we harrowed and raked up the stumps, and then plowed it twice more, harrowed, cultivated, gathered and burned alfalfa roots for a month, and this year there is still a sprinkling of alfalfa over the field. Every little root left in the ground keeps on growing. Clover may not do quite so much good to the soil, but you can get rid of it when you want to. We would want $25.00 per acre to plow and clean up alfalfa ground.

Those assorted sizes of boxes for apples you described in The Fruit-Grower look like a good thing. It looks like there would be a lot more apples sold in the cities if packed in neat one-half peck or peck boxes, as a good many people would buy a small box and take home with them that wouldn't think of buying a large box, but would buy enough small boxes to amount to considerable.

We have our manure piles ready for mulching if necessary and are trying to get everything in good shape to be ready for the strawberries, for from the time they come on until melons are gone, it is a continual "round of pleasure."

Idaho. J. E. BUTLER.



INTERIOR OF MR. BUTLER'S HOTHOUSE, WHICH IS 16x30 FEET IN SIZE AND COST LESS THAN $100.

Marketing Northwestern Apples.

Apple growers of the Northwest are beginning to consider ways of marketing their fruit when all the trees now planted come into bearing. At a recent meeting of commercial clubs of the Inland Empire, representing a membership of 15,000 persons, this subject was discussed from a commonsense standpoint. One of the speakers presented the problem as follows:

"In the Inland Empire are 15,000 000 apple trees, 35 per cent af which are four years old or over, the remainder being under four years old. Suppose that only half of these trees will ever bear fruit; even then, at four boxes of apples per tree, the 7,500,000 productive trees will produce 30,000,000 boxes of apples by 1915. This quantity of fruit would fill 50,000 cars, making 2,000 trains of 25 cars each. If ten trains, or 250 carloads, go out every day, 200 days would pass from the time the first car started until the last one was moved...Twenty-five thousand refrigerator cars, each making two trips, would be needed to handle the crop. All the railroads on the continent could not supply sufficient cars to handle the fruit production of the Inland Empire alone during the picking and packing season."

After presenting the problem, the speaker said that the people of the Northwest must do several things, among them the following:

"First—Organize responsible local associations.

"Second—Standardize our apples.

"Third—Advertise our orchard products.

"Fourth—Build frost-proof local and central warehouses.

"Fifth—Provide adequate transportation facilities.

"Sixth—Develop our markets and arrange for proper distribution."

Under the head of advertising the speaker offered some pertinent suggestions. "To reach the every-day consumer apple-growers must exploit their products in the publications he reads. The right kind of advertising will create the desire, after which it is up to the grower to supply the demand. Little or no attention has ever been given to properly advertising the apple as a commodity, yet there is no one who could set a limit to the possibilities of a consistent and persistent campaign. Think of what would be the effect on the market if consumers were taught by the judicious use of printers' ink that in purchasing apples they are buying rosy cheeks, happy smiles, sparkling eyes and elastic step.

"Apples do not require half as much advertising as breakfast foods, rubber heels and clean-all soaps do, but so far our growers and handlers do not seem to have realized the fact."

What this gentleman says is undoubtedly true. Apple-growers everywhere must realize that not one apple is now consumed where four or five should be eaten—and advertising of the right kind of apples will do the work. But mark this: The apples that are advertised must be right—they must make good.

Big Peach Crop in Prospect.

While the peach crop in some sections will amount to nothing, there are indications of an unusually heavy crop in some parts of Oklahoma. One of our subscribers, Francis Burgevin, Spiro, Okla., writes that on his 800 trees, and on those of his neighbors within two miles, there is in prospect a crop of 25,000 bushels. The fruit has been thinned, and the crop from these orchards last year were prize winners. Mr. Burgevin and his neighbors are desirous of getting in touch with buyers who will take the fruit on the trees. The growers are provided with the necessary packages, and plenty of labor is available.

The Old Oaken Bucket

Filled to the brim with cold, clear purity—no such water nowadays.

Bring back the old days with a glass or bottle of

Coca-Cola

TRADE MARK REGISTERED

It makes one think of everything that's pure and wholesome and delightful. Bright, sparkling, teeming with palate joy—it's your soda fountain old oaken bucket.

Free Our new booklet, telling of Coca-Cola vindication at Chattanooga, for the asking.

Demand the Genuine as made by THE COCA-COLA CO ATLANTA, GA. 2-J

Whenever you see an Arrow think of Coca-Cola.

FOREMOST FARM PAPERS

1,392,000 Circulation at $6.55 a Line

	Guaranteed Circulation	Line Rate
The Fruit-Grower .... St. Joseph, Mo.	100,000	$ .50
Successful Farming .... Des Moines, Ia.	600,000	3.00
Farm, Stock & Home ... Minneapolis, Minn.	105,000	.40
Southern Ruralist .... Atlanta, Ga.	150,000	.75
Kimball's Dairy Farmer . Waterloo, Ia.	100,000	.50
The Gleaner ..... Detroit, Mich.	125,000	.50
Green's Fruit-Grower... Rochester, N. Y.	125,000	.50
Inland Farmer ..... Louisville, Ky.	57,000	.25
Western Farmer ..... Spokane, Wash.	30,000	.15

CHICAGO
J. G. BILLINGSLEA
Western Representative
813 First National Bank Building, Chicago

NEW YORK
A. H. BILLINGSLEA
Eastern Representative
1 Madison Avenue, New York

ST. LOUIS
A. D. McKINNEY
Third National Bank Building, St. Louis

MINNEAPOLIS
R. R. RING
Globe Building, Minneapolis

In writing advertisers please mention The Fruit-Grower.

COMMERCIAL VARIETIES

A Comparison of the Different Varieties of Apples From a Commercial Standpoint

The history of our commercial orchards of the whole United States shows that in the earlier plantings there was a great amount of guess work and experimental work. People planted the varieties which they were able to get or which pleased them in the state from which they came. These varieties are then tried out and their adaptation, or lack of it, to the conditions where planted, ultimately developed. This has been particularly true in the planting of the older orchards of southern Idaho.

We find, in studying their behavior, that some varieties yield but little more than half the number of boxes per tree produced by other varieties, and the selling value on the market varies widely.

As an illustration of this question we note the orchard of B. F. Tussing in the Payette district, Idaho. This orchard of eight acres was planted some thirteen years ago. We have a carefully compiled and correct statement of the fruit crop of the year 1910. This statement shows that one hundred Jonathan trees produced nineteen and one-half boxes of commercially packed apples per tree; one hundred and seventy-six Rome Beauty trees produced almost twenty boxes per tree. On the other hand the Oregon Reds produced only twelve and one-half boxes per tree; the Ben Davis twelve boxes per tree; the Delaware Red a little less than ten and one-half boxes per tree; the Arkansas Black thirteen and one-half boxes per tree.

YIELD.

	Trees.	Produced, Boxes.
Jonathan	100	1,956
Rome Beauty	176	3,503
W. W. Pearmain	47	780
Mamoth Black Twigs	18	371
Oregon Reds	12	151
Ben Davis	4	48
Delaware Red	13	135
Gravenstein	15	294
Arkansas Black	180	2,430
On eight acres, total	565	2,668

VALUE.

Grades.	Boxes.	Sold for.
Extra fancy	6,048	$ 8,164.80
Fancy	2,310	2,541.00
Choice	1,319	1,050.75
Total	9,678	$11,756.56
Average, per acre	1,209	1,469.57

EXPENSE.

Harvesting:	Per box.
Boxing and making the same	$ .13
Packing	.05
Sorting	.02
Paper	.02
Nailing boxes and help in packing house	.03
Hauling to cars, loading and bracing	.02
Hauling from orchard to packing house	.01
Picking	.04
Cost of picking, packing and handling the crop	$0.32

Orchard:	
Interest on investment	$960.00
Pruning and hauling brush	160.00
Cultivating	96.00
Thinning fruit	95.00
Spraying	80.00
Irrigation	48.00
Taxes	44.00
Propping trees	40.00
Water assessments	14.00
Repairing fences	8.00
Total amount of orchard expenses	$1,545.00

SUMMARY.

Orchard expense, per box	$ .16
Harvesting expense, per box	.32
Total cost of productlon, per box	$0.48
Gross returns, eight acres	$11,758.55
Cost of production	4,745.44
Net balance, eight acres, twelve-year-old orchard	$ 7,011.11

Note that Jonathan and Rome Beauty yeilded fully eighty to ninety per cent more boxes per tree than the Delaware Red or the Ben Davis. Note also that the Jonathan and the Rome Beauty gave a much higher percentage of extra fancy fruit saleable at higher prices than some of the varieties less favorably known.

Now this is a matter of supreme inportance in the planting of the commercial orchard. The combined experience of twelve to fifteen years has shown that in the Hood River district the soil, climate, and conditions specially favor the Newtown Pippin and the Spitzenburg. As these two varieties do not inter-pollinate each other with the best success the Ortley is sometimes planted with them for that purpose.

In the Boise basin and Payette district soil and climatic conditions specially favor the production of Jonathan, Rome Beauty and Grimes Golden, of superior quality. The Winesap bears very abundantly but does not attain quite the size as grown in the Boise-Payette district that it attains when grown in the Chelan, Wenatchee and Yakima districts of Washington. The Winesap is, however, exceedingly productive when properly thinned, and is a valuable variety for the Boise and Payette districts. The Delicious, Winter Banana, White Winter Pearmain and King David are being planted and tested in a small way and we shall know more about them in the near future.

Referring again to the carefully compiled statement of the behavior of the orchard owned by B. F. Tussing, we find that although his orchard contained at least three varieties that ought not to have been planted, yet the yield was 1,209 boxes per acre of which five-eights of the entire product sold as extra fancy.

Note that in the expense account against this orchard there first appears eight per cent interest on the valuation of fifteen hundred dollars per acre; one hundred and twenty dollars per acre interest account, or ten cents a box on the apples grown.

Note that the expense of pruning, hauling out brush, cultivating, thinning, spraying irrigation, taxes, supporting branches of trees with props, water assessments, and repairing fences, amounted to almost six cents per box; that the cost of purchasing the boxes, making the same, paper, sorting, wrapping packing, nailing the haulin from orchard to packing house, hauling from orchard to packig house, hauling to cars, loading and bracing, amounted to thirty-two cents a box; making a total cost of the production of the crop forty-eight cents per box.

It should be borne in mind, however, that this includes ten cents per box interest charge of eight per cent, the valuation of fifteen hundred dollars per acre, and as Mr. Tussing owns the land this one hundred and twenty dollars per acre of interest charge was really a part of his income. From this standpoint his net income per acre, after paying all other expenses save interest, was nine hundred and ninety-six dollars per acre.

Now, if this is possible in an orchard where some of the varieties were not merchantable at the better prices or not sufficiently productive, what can be done in the orchards which are being planted at this moment using only varieties which develop the highest percentage of extra fancy fruit? Sound business judgment would indicate the supreme importance of planting a very narrow list of varieties and those the very best and most profitable for the particular district where planted.

Idaho. E. F. STEPHENS.

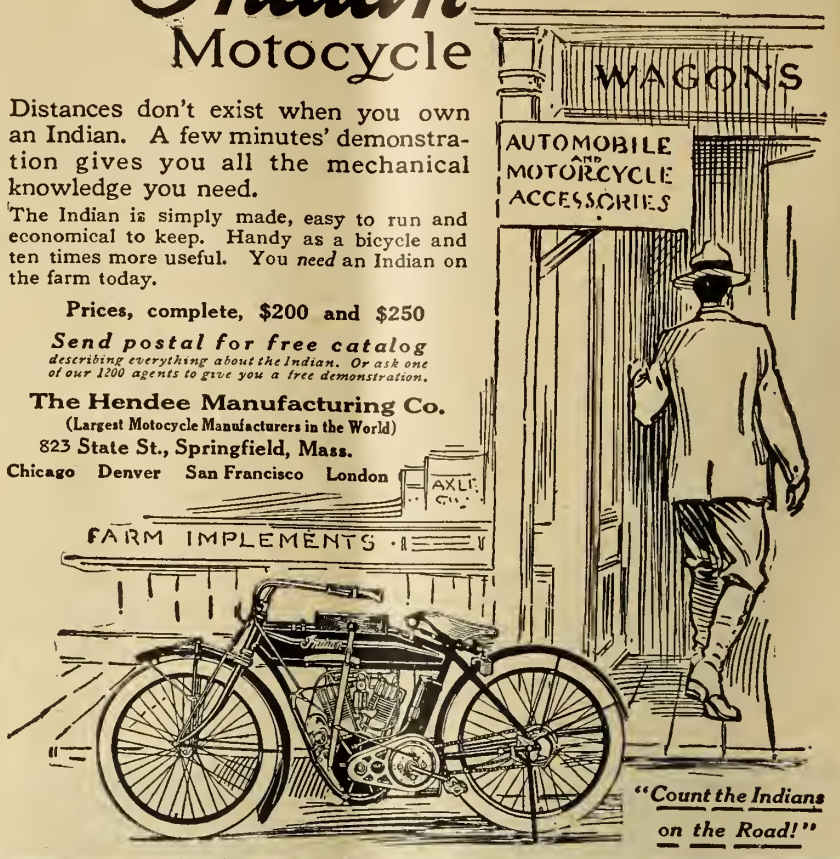
Poorly Packed Western Apples.

So much has been said about the excellence of packing methods in the boxed-apple districet that it comes as a change to have a Fruit-Grower subscriber tell that some of the Western packers are lax, and that barreled apples are not the only ones open to criticism. This subscriber, Mr. Leonard Goodwin of Chicago, bought some apples from a Chicago commission merchant, which were supposed to be of fancy grade. Top and bottom were faced very nicely, but the middle of the box, he says, was filled with small, runty, scaby, hail-marked, withered and partially rotted apples, not fit even for cider.

This fruit bore the name of Wm. M. Roylance Co., Provo, Utah, and the buyer says the blame for the dishonest packing lies between this company and the firm of commission merchants on South Water street. The apples were either poorly packed in Utah, or someone had used the box bearing the Roylance Company's brand The latter company has a splendid reputation, but of course, a dishonest packer might have done the work while inspectors were not looking. Or the box might have been repacked. By the way, the repacking of fruit in boxes bearing a trade-marked label should be prohibited by law. Unless this is done, no firm is safe, for its labeled boxes might be used over and over again and the reputation of the packer destroyed.

The Indian Motocycle

Farmers! Get closer to town. Ride a Motorcycle.



Distances don't exist when you own an Indian. A few minutes' demonstration gives you all the mechanical knowledge you need.

The Indian is simply made, easy to run and economical to keep. Handy as a bicycle and ten times more useful. You *need* an Indian on the farm today.

Prices, complete, $200 and $250

Send postal for free catalog describing everything about the Indian. Or ask one of our 1200 agents to give you a free demonstration.

The Hendee Manufacturing Co.
(Largest Motocycle Manufacturers in the World)
823 State St., Springfield, Mass.
Chicago Denver San Francisco London

"Count the Indians on the Road!"

Harvey Bolster Springs

Get more money for your vegetables, fruit, eggs, milk and live stock by delivering them in first class condition.
HARVEY BOLSTER SPRINGS make your wagon a spring wagon—make it last longer and prevent damage to produce in hauling to market. They are the *Standard Springs of America* and are sold under our positive guarantee to give satisfaction. Ask for special proposition.
HARVEY SPRING CO., 736 17th St., Racine, Wis.

CLARK'S CUTAWAY TOOLS

Orchard *and* Farm Harrows, Cider Mills, Etc.

Also Spray Pumps and Outfits, Rhodes Pruning Tools, Pointed and Step Orchard Ladders, Veneer Tree Protectors, Wilson Picking Bags, Kee's Fruit Pickers and other good things for the fruit grower. Nurserymen's Tools, Thomas Baler and Box Clamp, Common Sense Tree Digger, Etc. Raney Home Canner, the best ever.

ELASTIC PRUNING PAINT
For Damaged Fruit and Shade Trees. Save those already damaged by rabbits, borers, pruning or other causes.

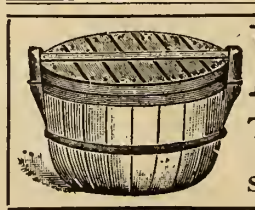
IMPROVED RANEY CANNERS
Make Home Canning Practical and Profitable to every housekeeper, farmer, fruit and truck grower. Write for catalogue.

E. G. MENDENHALL, General Distributing Agent "Clark's Tools"
ALSO FRUIT GROWERS' SUPPLY DEPOT BOX 300, KINMUNDY, ILLINOIS

Apple Barrels and Boxes

Barrel Material, Supplies, Presses Picking Ladders, Etc. Second Hand Whiskey Barrels and Kegs

Hauber Cooperage Co., Kansas City, Kan.



Baskets Fruit Packages and Berry Boxes

TREE PROTECTORS A SPECIALTY

Address 146 Arsenal Street
St. Louis Basket & Box Company, St. Louis, Missouri

APPLE BERRY BOXES
WESTERN WHITE PINE
Local shipments; carload lots. Place orders early.
F. A. CARRIER
Dwight Building Kansas City, Mo.

The CLEANEST CUT—BRIGHT ATTRACTIVE—OUR
Western Soft Pine
FRUIT BOXES

DON'T SPLIT, LIGHT, STRONG—Nail easy. Send on post card your name, address, kind and quantity wanted. Then we will send you sample of wood and prices, your station.
Washington Mill Company
SPOKANE, WASHINGTON

COST OF RAISING APPLES

Quotations From an Address Delivered at the Vermont State Horticultural Society Meeting

"What does it cost to grow an apple orchard?" and "What does it cost to produce a barrel or a box of apples?" These are two questions which are asked repeatedly, yet upon which very little information has ever been recorded in print. At the meeting of the Vermont State Horticultural Society, held at Montpelier, November 1st to 3rd, 1911, Mr. M. C. Burritt of the United States Department of Agriculture, gave some figures showing the cost of orchards and apples as he found them in his orchards in Monroe County, New York, and the following quotations are taken from his address as given in the Ninth Annual Report of the society.

Factors Which Enter Into the Cost of Producing Apples.

"First let us get clearly before us the factors which enter into the cost of growing any farm crop. These may be classified under two principal heads; labor costs and cash costs. Labor costs are simply the value of all the work done upon the crop by men and teams. The rate charged for this work may be fixed by the actual cost of hire and keep, or by an assumed average neighborhood rate. We have used actual costs, which are 15c per hour for man and 10c per hour for horse labor. The fairest way in which to measure these costs is by hours of work done, but this is not as clear to the average man. Cash costs are rather more numerous and complicated, and we might add, variable. They include the original cost of the trees, the cost of the tree protectors, spraying materials, the fertilizer or manure charges, seed for cover crops if used, taxes on the land, interest on the value of the equipment used in the orchard, or rent of the same, interest on the land and the proper share of the general farm charges, such as insurance of buildings or store and packing houses, telephone service, general management, etc. It has been necessary to omit this last charge in these records because it was not definitely known, except for the last year.

"It will be seen that all these charges may vary considerably according to farm conditions, land values, etc. Our only comment here is that the more these costs vary downward the better will a grower be able to compete with another. We have found that the most variable factors are interest and taxes on the land. The amount and cost of the labor put upon the crop also varies considerably, but this is partly reflected in the selling price. Almost needless to say the accuracy and completeness of the record is a very important factor. Now let us see how errors were very largely eliminated in our work by the method used in gathering the figures.

Method of Obtaining Costs.

"As I have said, the forms upon which these records were obtained were worked out by the U. S. Department of Agriculture. They were in two parts; a labor report and a cash report. The labor sheet is simply a diary form for each day of the year, the only difference from the ordinary diary, such as you or I would keep, being the hours of the day at the left and the ruled columns at the right of the page for the field or crop designation and for the horses and man hours. Sample of this sheet is as follows:

Form B.

PROPRIETOR'S OR SUPERINTENDENT'S DAILY LABOR REPORT

U. S. Department of Agriculture in co-operation with — C. A. Smith, Oakdale, Mich.

Day of Week: Saturday — Date May 23, 1908

	KIND OF WORK (Include Implements Used, Number of Loads, etc.)	Field	Man Hours	Horse No.	Horse Hours
	SAMPLE SHEET				
4:30—5:00					
5:30—6:00	Feeding cows and milking.		1¼		
6:30—7:00	Breakfast		—		
7:30—	Care of hogs. (See Note 15.)		½		
8:00—8:30					See Note 3 (b).
9:00—9:30—10:00—10:30—11:00	Planting corn—edge-drop planter, in ck. rows. (X) 27 acres. Used 3¾ bu. Yellow Dent at $2.00 per bu. (See Notes 4 and 8.)	B	½	2	7
11:30—12:00	Putting away planter		1		
12:30—1:00	Dinner.		—		
1:30—2:00—2:30—3:00	Helping haul manure. Spreader—2 loads. See Note 4.)	C	2		
3:30—4:00	Rain—nothing done.		—		
4:30—5:00	Fixing fence.		1		
5:30—	Care of hogs.		½		
6:00—6:30	Feeding cows and milking.		1		
7:00—7:30	Supper.				
	Totals,		10¾		7

——Give weather and crop conditions, general notes, etc.

EXTRA LABOR

KIND OF WORK	Field	Time A. M. Beginning	Time A. M. Ending	Time P. M. Beginning	Time P. M. Ending	No. of Men	No. Man Hours	No. of Horses	No. Horse Hours
Care of Horses		6:00	6:30	5:30	6:00	1			
Harrowing	B	7:00	12:00	3:00	5:00	1		3	
Repairing cow stalls		7:00	12:00	1:00	6:00	2			
Hauling manure, 2 loads	C			1:00	3:00	1			

WAGE RATE $1.50 per day with dinner.

Signed C. A. Smith

"One of these sheets is made out by each regular workman on the farm every day. Extra men's time is put down in the space provided at the bottom of the superintendent's page as shown in the illustration. These records, after being passed upon by the foreman or owner, were sent to the office where they were tabulated, checked and put into the form in which I now give them to you.

The cash transactions were recorded in the ordinary way in a single entry ledger form. The only difference between our form and the common one used is a column in which all charges not cash are entered. The inventories at the beginning and end of the year, and all miscellaneous information about the farm, as a whole, was secured by personal visits to the farms.

Weekdays--
Business
Sundays--
Pleasure

AN International Auto Wagon is a useful money-making motor car. You can use it for all kinds of light hauling and for making quick business trips six days in the week. You can add an extra seat and a top and make of it a comfortable car in which you and your family can drive to church on Sunday or visit any friend living within twenty-five or thirty miles of your farm, or even farther.

The auto wagon has two great advantages over the horse—it travels much faster—it never gets tired. In any emergency the International auto wagon is always ready to go, day or night, storm or shine. Fill the gasoline tank and oiler, turn the crank, and you are on your way.

International Auto Wagons

are sturdy, dependable, willing servants. You will find the International easy to understand and manage, reliable in every way. The motor is simple and powerful. Speed changes are made easily and surely. Springs are resilient and easy-riding. Wheels are high enough to give ample road clearance. Brakes are powerful. You control the car completely through a single convenient lever. Winter or summer you can go comfortably and safely in your International auto wagon, over any road where horses could travel, at less expense for fuel and oil than the feed for one horse would amount to.

You should know all about the International auto wagon and what it will do for you. Write for catalogue giving many interesting facts and figures about this ideal farmers' car.

International Harvester Company of America
(Incorporated)
Harvester Building Chicago U S A

IHC Service Bureau

The purpose of this Bureau is to furnish, free of charge to all, the best information obtainable on better farming. If you have any worthy questions concerning soils, crops, land drainage, irrigation, fertilizer, etc., make your inquiries specific and send them to I H C Service Bureau, Harvester Building, Chicago, U S A

I Want You to
Visit the Staver Factory—

Come as my guest. Ask for me personally. If I can possibly find time, I'll take you through the plant myself; if not, I'll see that you are taken care of and shown every consideration.

I'll guarantee to make your visit one that you'll remember for a long time. Our great factory is one of the show places of Chicago. The home of the STAVER is a place to be proud of—the most modern and expensive machinery, the most skilled men in the country, from superintendent down to machinist.

6 Models
35 H. P.
and 40 H. P.

STAVER

$1650
to
$2250

CHICAGO

I want you to see exactly *how* a STAVER car is made. I want to show you some *inside* facts about automobile construction that will open your eyes and may save you hundreds of dollars when you come to buy.

You will be amazed when you learn the lengths to which we have gone to uphold the STAVER reputation.

We *had* to do it. Every farmer in the country knows that for 33 years we have been building the best carriages made in America That reputation is worth *millions* of dollars to us. Do you think we would *dare* to offer these same farmers an automobile bearing the STAVER name unless we knew, *beyond the slightest possibility of a doubt*, that we had a *perfect* car? Yon *know* we wouldn't.

But, whether you come or not, be sure to send for the new STAVER catalog. I'll send you, with my compliments, a copy of the famous Transcontinental Route Book and the story of the blazing of the Continent-to-Continent Roadway by the STAVER. Let me hear from you.

Harry B. Staver, President

Staver Carriage Co.
Dept. 4535
76th & Wallace Sts. Chicago, Ill. (85)

All field measurements were accurately made with a surveyor's chain.

The Cost of Growing a 6.6 Acre Apple Orchard for Eight Years.

The orchard for which the following figures were given was set in the spring of 1903 and the records given begin with that year and end with 1910, covering a period of eight years in all. Throughout this period other crops have been grown between the tree rows, thereby offsetting to a large extent the cost of growing the orchard. Forty trees at the north end of the orchard are pears, but they have received substantially the same treatment as the apples and have not affected the cost. In 1904, 211 plum trees were set as fillers one way. The apple trees are set 36x36 feet apart, so that filled one way the trees stand 18x 36 feet apart. The orchard is ten rows wide and 41 long, containing in all 467 trees.

The following is the summary sheet for 1907, the fifth year of the orchard with the items of cost and method of tabulating:

FIELD A—1907—FIFTH YEAR.
216 apples, 40 pears, 211 plums, total 467 trees; 6.6 acres.

OPERATION	Total Hours Man	Total Hours Horse	Total Cost	Hrs. per Acre Man	Hrs. per Acre Horse	Cost per Acre	Cost Per 100
Mulching	3	6	$ 1.05	.455	.91	$ .16	$ .22
Pruning	11	..	1.65	1.67	...	.25	.35
Cultivating, 1	7	7	1.75	1.06	1.06	.26	.38
Cultivating, 2	10	10	2.50	1.51	1.51	.38	.54
Cultivating, 3	6	6	1.50	.91	.91	.23	.32
Plowing in fall	47	94	16.45	7.12	14.25	2.50	3.52
Banking trees	12	..	1.80	1.82	...	.27	.39
Harrowing	21	42	7.35	3.18	6.36	1.11	1.58
Total labor cost	117	165	$34.05	17.73	25.00	$5.16	$7.30
Four loads manure at $1.50			$ 6.00	...	...	$ .91	$1.29
Equipment charge			1.15	...	...	.174	.25
Taxes			5.29	...	...	.801	1.13
Interest			38.48	...	...	5.83	8.23
Total cost			$84.97	...	...	$12.875	$18.20

INCOME, COST AND PROFIT ON BEANS, FIELD A—1907.

	Income	Cost	Profit
75 Bushels at $1.50	$112.50		
3½ Tons pods at $6.00	21.00		
	$133.50	$94.65	$38.85

LOSS ON FIELD, 1907.

	Total	Per Acre
Net income from beans	$38.85	$5.89
Cost of orchard	84.97	12.87
Loss	$46.12	$6.98

"A summary of the cost of the orchard, the net income from the crop, the income from the orchard, and the profit and loss by years for the eight years brings us to the meat of the whole matter."

SUMMARY OF COSTS FOR EIGHT YEARS—FIELD A.—6.6 ACRES.

Year	CROP GROWN	Net Income from Crop	Income from Orchard	Orchard Cost of	Profit	
1903	Corn	$ 15.17	.....	$109.87	.....	$ 94.70
1904	Beans	42.57	.....	216.16	.....	173.59
1905	Beans	43.13	.....	83.78	.....	40.65
1906	Beans	120.90	.....	80.14	$40.76	.....
1907	Beans	38.85	.....	84.97	.....	46.12
1908	Corn	37.68	.....	64.22	.....	26.54
1909	Oats and strawberries	100.61	$27.88	84.73	43.76	.....
1910	Wheat	60.70	38.65	96.35	3.00	.....
		$459.61	$66.53	$820.22	$87.52	$381.60

Net loss on field for eight years	$294.08
Average annual loss	$ 38.76
Total cost per acre, exclusive of income	$124.27
Total cost per acre, including income	44.55
Total net cost per 100 trees	62.97
Total net cost per apple tree	1.37
Total net cost per apple tree, exclusive of income	3.80
Total labor cost per acre	35.09
Total cash cost per acre	89.19

"We find that this orchard has cost $124.27 per acre during the eight years of its life, but that the $79.72 per acre of crops grown in the orchard has brought this cost down to $44.55 per acre. It is safe to say that the orchard would have cost even more than it did had it not been for the crops, for many operations charged directly to the crops would of necessity have been charged to the trees. The cost per 100 trees does not mean much as it often happens that not all the trees are covered by an operation, and number of trees per acre greatly affects these costs.

"It will be noted from the summary that in this case beans and wheat were more profitable crops to grow in the orchard than corn. Only about one-third of an acre of strawberries was grown each of the last two years, and although showing good profits cannot be taken as the most profitable crop to grow, because of the limit of labor, markets, etc., as to the size of the acreage which could be handled.

"After the eighth year this orchard should begin to return an income sufficient to pay all expenses thereafter, and soon ought to show a profit. The waiting period may be considered as ended, the orchard having begun to bear a little in its eighth year.

The Cost of a Four-Year-Old Orchard.

"We have another and younger orchard upon which records have been kept. This orchard of five acres contains 126 standard apple trees filled both ways with 375 peach trees. It was set in the spring of 1908 so that the trees have grown four seasons. The permanents, apples, are set 36x40 feet apart so that with the peaches between the trees stand 18x20 feet apart. A crop of beans has been grown between the tree rows each season. The first season a full seven rows, 28 inches apart, were planted in the wider space; the second and third seasons, six rows, and the last and present season only four rows. The crop has been very good each year until the last. One application of manure, one crop of clover and one seeding of rye have been plowed under, and in addition a liberal amount of commercial fertilizer used with each crop. This year the peach trees bore their first crop. The record of the four years is as follows:

SUMMARY OF THE COST OF A FOUR-YEAR-OLD APPLE AND PEACH ORCHARD.

Year	CROP GROWN	Net Income from Crop	Income from Orchard	Cost of Orchard	Profit	Loss
1908	Beans	$ 63.37	.....	$130.12	.....	$62.75
1909	Beans	66.70	.....	85.03	.....	18.33
1910	Beans	79.81	.....	83.39	.....	3.58
1911	Beans	53.20	$46.05	61.95	$37.30	.....
		$267.08	$46.05	$360.49	$37.30	$84.66

Total cost per acre, exclusive of income	72.10
Total cost per acre, including income	9.47
Total net cost per apple tree	3.76
Total net cost per apple tree, excluding income	2.85

"These figures show a still lower cost of growing trees to bearing age. After paying all expenses connected with the growing of the trees, including the interest on the land at $150 per acre, and deducting the net profit from the crops of beans and the sales from the first crop of peaches we find that the growing of the trees has cost us $9.47 per acre, or 37½c per apple tree at four years old. Had no crop been grown in the orchard it would have cost us at least $62.89 per acre after deducting the income from the first peach crop. The peach trees are now at full bearing age and should show a good profit from this time on. Possibly at five, and certainly at six years of age, this orchard will entirely have paid for itself. The only possible further charge which could be made against the orchard is the crop income which might have been obtained from the land had the trees not been there. We estimated that the presence of the trees cut down the crop of beans from the land 30%. As the average net income from the beans was $13.35 per acre, this would amount to $4 per acre, per year, an insignificant sum."

Cost of a Barrel of Apples.

In speaking of the cost of producing a barrel of apples, Mr. Burritt gives figures covering the costs in a 6.1 acre orchard over a period of nine years, the orchard being 14 years old in 1910 and consisting of 234 trees. These trees ranged from 36 to 50 years old and were made up of the varieties Baldwin, Twenty Ounce, King and a few trees of odd sorts. The average total cost in producing the fruit on this orchard for the period of nine years from 1902 to 1910, amounted to $447.57; the average cost per acre was $73.38 and the average cost per barrel was $1.10. The average annual crop for the nine years was 409 barrels and the cost per barrel for all of the items was 3.4c for spray material, 32.5c for packages, 8.4c interest, 6.8c for use of equipment, 1.1c overhead charge, and 56.5c for labor. This makes an average total cost of $1.08 per barrel for the period of nine years.

In explaining some of these items, Mr. Burritt said: "Interest has been figured at five per cent in all cases, but as the price of the land has varied from $90 at the beginning of the period to its present valuation of $150 per acre, due to its improvement and the general increase in the price of land, the amount of interest has also varied. The same is true of the equipment charge, which has also increased each year. The average valuation of the land for the nine-year period was $113.50. This means an annual interest charge per acre of $5.67 or 8½ cents per barrel. The equipment charge, which is interest, repairs and depreciation on the machinery used in the orchard, amounts to more than 6½ cents per barrel or $4.58 per acre. Taxes and insurance on the buildings distributed per acre for the farm, averaged 75 cents per acre, or a trifle over a cent per barrel.

"Labor is the largest single item. For the first three years this was estimated on the basis of the cost for the last five years, for which more careful

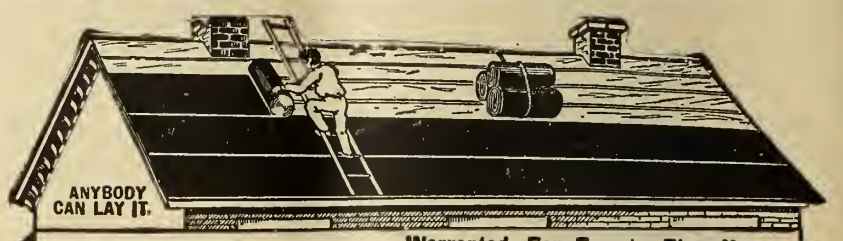
"Firestone" Tires Stoutest Construction

EXTRA fine rubber, extra fine Sea Island Cotton fabric, extra hand workmanship and most rigid inspection have given "Firestone" tires the stoutest construction every year for ten years.

That's why our statement of "Most Miles per Dollar" has been proven year after year on all kinds of tests of service. Cars used on rough country roads need tires of the stoutest construction. Demand them on your new car or equip your old car with them.

Books Free: "Tire Repairs and How to Make Them," and catalog of Firestone Tires. Also get posted on advantages of Firestone Demountable Rims. If interested ask for Rim Booklet.

The Firestone Tire & Rubber Co.
"America's Largest Exclusive Tire and Rim Makers"
Akron, Ohio, and All Principal Cities



Rubber Roofing

Warranted For Twenty-Five Years.
FREIGHT PAID To Any Station East of Rocky Mountains, except Texas, Okla., Colo., N. D., S. D., Wyo., Mont., N. M., La., Ga., Ala., Miss. and Fla., on all orders of three rolls or more. Special Prices to these States on request.

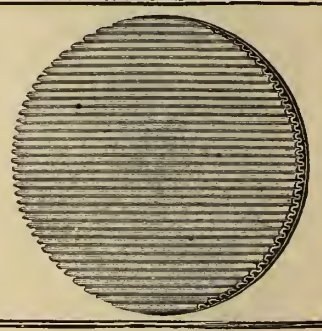
ONE-PLY - - - - Weighs 35 lbs., 108 Square Feet, $1.10 per roll.
TWO-PLY - - - Weighs 45 lbs., 108 Square Feet, $1.30 per roll.
THREE-PLY - Weighs 55 lbs., 108 Square Feet, $1.50 per roll.

TERMS CASH: We save you the wholesalers' and retailers' profit. These special prices only hold good for immediate shipment.

Indestructible by Heat, Cold, Sun or Rain.

Write for FREE SAMPLES or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to Southern Illinois National Bank.
CENTURY MANUFACTURING COMPANY, Dept. 474 East St. Louis, Ills.

Appco Shipsafe
Squeeze Proof Barrel Caps



A new and better corrugated cap that takes up the squeeze without bruising the fruit. SAMPLES SENT on request.

Single Faced, - - - Per 1,000, $ 7.00
Double Faced, - - - - " 10.50
Also Box Lining Cut to Size.

The APPCO SHIPSAFE promises to solve the problem of shipping apples. Get our "FRUIT BULLETIN" for particulars.

American Paper Products Co.,
251 Bremen Ave., St. Louis, Mo.

In writing advertisers please mention The Fruit-Grower.

records were kept. This labor is computed at its cost to us on the farm. The rates per hour were 15½ cents for men and 13½ cents for horses. The rate per hour for man labor was obtained by dividing the total amount of money paid for labor, plus the cost of board, by the total number of hours worked on the farm during the year. In the case of the horses a fixed charge of $10 a month or $120 a year was made, and this amount divided by the number of hours the horses worked gave the rate per hour. These charges amount to $4.25 a day for man and team. The cost of the labor to grow, pick and market a barrel of apples was 56½ cents, or $37.91 per acre, with an average yield of 67 barrels per acre.

"We could grow and deliver on board the cars at our station a barrel of apples for from $1 to $1.25 with an average crop under average conditions. In doing this we would expect to make five per cent on the capital invested and to receive fair wages for our labor. In addition to this we should have all the culls and the windfall apples to sell at a clear profit, for the cost of producing and handling these has been included in the costs given above, as it could not well be separated. These have amounted to an average of 29 cents per barrel in the last nine years. To reduce the matter to a still lower basis, we think that our experience has shown that we can expect to grow and sell a barrel of apples for 90 cents, and pay all expenses connected with its production.

"We would not agree to do this, however, for several reasons. In this account, no reckoning has been made of the cost of bringing this orchard to bearing and to its present state of productivity, so that $150 per acre is probably less than the actual cost of the orchard. We do not know how much this cost is, although we are now keeping records on some younger orchards, in an effort to get some light on the subject. Moreover, there are too many risks in a long-time investment of this nature, which have not been taken into account, such as a decline in the price because of over-production, heavy winds and hail storms, which may destroy not only the crop but the trees also, and the depredations of old or new insect pests or fungus diseases which are difficult to control. All these risks demand a much larger rate of interest than five per cent, to make it pay for a person to make such an investment for a period which cannot well be less than 50 years."

Gas-Light For the Farmstead.

If a practical demonstration, made in the hall of the School of Agriculture a few days ago, counts for anything, it is now just as easy for the farmer as for the city man to illuminate his building by gas, and at no greater cost. This is done through the agency of "Blau-gas" so named from its inventor, a German named Blau. It is a compressed, portable gas; its use involving the erection of no "plant" beyond a small steel cabinet occupying about as much room as the common tin "safe" used in kitchens, which cabinet is set against the wall, ousside the building, and connected with the interor piping. No excavation or covering, or protection against frost, is required. The gas is supplied in large steel bottles, in pairs. When one is emptied it is returned to the company; the other bottle maintaining light while the first is replaced, so that the supply need never fail. The business is like that of supplying milk in bottles, which are returned to the dairy when emptied—only the steel bottles of compressed gas are considerably larger.

The following claims are made for the new illuminant:

1. For the amount of light and heat made available, the equipment required, as well as the service, is the least expensive in the market. The pipes can be very much smaller than for coal or acetylene gas.

2. The light is clear and steady, with no variation in its intensity. It is as bright when a bottle is nearly emptied as when it is full.

3. The apparatus is absolutely proof against freezing. A plant—set, as usual, in the open air—at Winnipeg, was unaffected by a temperature of 53 degrees below zero.

4. For cooking purposes and for heating water it is claimed to be superior, in that it produces several times as much heat per cubic foot as ordinary city gas. It will bring water to the boiling point in half the time required by coal gas. It does not blacken enamelled ware which is brought in contact with the flame; nor does it discolor walls or ceilings.

5. With a proper burner, it can be used with perfect security in barns and outhouses, competing in point of safety with the electric light, which costs so much more to install. It is used in coal mines as a substitute for the "safety lamp." Put up in small bottles, it affords a brilliant and convenient light for vehicles.

5. It can be used in flatirons and warming pans, and for a variety of household purposes, with perfect safety. If an ordinary city gas jet is turned on, unlighted, in a closed sleeping room, it kills whoever lies there If Blau-gas is thus carelessly used, it will make the sleeper sick, but will not kill him. The danger from explosions is about one-third that attending the use of coal gas.

7. The gas can be used in blacksmithing, in cutting steel and iron, and in welding various metals, including steel, cast iron, aluminum and brass. It was employed in cutting up and removing the tangled mass of steel beams in the ruins of the Equitable Building in New York.

8. Beyond replacing the bottles when empty, the plant requires no attention whatever.

Like many another "gift of science", "Blau-gas" come to us as the result of an accident. The inventor was the gas expert of the great German balloon-making concern which builds the German war-balloons we have read so much about. The company wanted a highly compressible, portable gas, that the same might be supplied at different stations for its ballons, thus making a return home unnecessary when a fresh supply should be needed. After several years of experiment, Herr Blau succeeded in producing a highly "compressible and portable" gas. But lo! its specific gravity, when expanded, was greater than that of air; so it was useless for balloons. However, the other uses to which it can be put turn out to be so much more valuable that the company is quite reconciled to the disappointment.—Minnesota College of Agriculture.

Dormant Buds for Top-Working.

Mr. W. H. Addis, Montavilla, Ore., sends us a picture showing growth of cherry branches, part of which were dormant-budded one season and part of which were June-budded the following spring, but using dormant buds from previous season's growth. Unfortunately the photograph will not make a good cut, so that we cannot show the growth of the branches.

Mr. Addis says that June-budding in the Northwest is not satisfactory, because buds of current season's growth are not mature enough to permit their use so early in the season. As a result, most budding is done in August or September, the buds being dormant until the following spring.

Where buds are kept dormant until June, however, he has had great success with June-budding, and recommends it to those who would bud old trees, or even to those who wish to propagate nursery stock.

"The whole secret is to have dormant buds to use, and in order to get them it is necessary to cut the propagating wood when the trees are dormant (in January in this climate), just as you would cut grafting wood. Then this wood must be kept where it is cool enough so that it will not put forth growth, and moist enough not to dry out, and dry enough not to rot.

"In the Middle West, it may be that June-budding with buds of current season's growth is satisfactor, but in the North generally dormant-budding will be found of great advantage. Even in the Middle States it may be found quite advantageous in working over old trees, for the mature buds of the previous season's growth seem to do better under thick bark than young, tender buds do.

"When dormant buds are inserted the limbs in which they are placed should be broken off beyond the bud, if they are small; if large, they should be cut off and the stub waxed over."

TO DESTROY APHIS, THRIPS, ETC.
Without Injury to Foliage
SPRAY WITH
"Black Leaf 40"
SULPHATE OF NICOTINE

"Black Leaf 40" is highly recommended by Experiment Stations and Spraying Experts throughout the entire United States.

Owing to the large dilution, neither foliage nor fruit is stained.

Like our "Black Leaf" Extract, "Black Leaf 40" may be applied when trees are in full bloom and foliage, without damage to either.

Also, "Black Leaf 40" is perfectly soluble in water—no clogging of nozzles.

PRICE:

10½-lb. can, $12.50. Makes 1000 gallons, "5-100 of 1 per cent Nicotine."
2½-lb. can, 3.25. Makes 240 gallons, "5-100 of 1 per cent Nicotine."
½-lb. can, .85. Makes 47 gallons, "5-100 of 1 per cent Nicotine."

These prices prevail at ALL agencies in railroad towns throughout the United States. If you cannot thus obtain "Black Leaf 40," send us postoffice money order and we will ship you by express, prepaid.

The Kentucky Tobacco Product Company
INCORPORATED
LOUISVILLE, KENTUCKY

HAMILTON MADE SPRAYING HOSE

will spray your trees without trouble or expense for several years for one cost. One trial sufficient to convince.

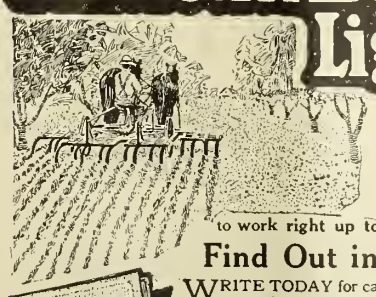
PERFECT SPRAYING HOSE
Every length will stand 600 pounds and guaranteed for 300 pounds.
½ inch, per foot.....15c
⅜ inch, per foot.....14c

VULCAN SPRAYING HOSE
Stands 350 pounds, guaranteed for 100 pounds working pressure.
½ inch, per foot.....12c
⅜ inch, per foot.....11c

All coupled complete, 50-foot lengths, freight prepaid. Order from your dealer or shipped direct from factory, cash with order.

Hamilton Rubber Manufacturing Company
TRENTON, NEW JERSEY

Find Out About the Forkner Light-Draft Harrow!

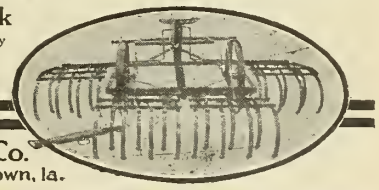


THIS low-priced harrow for orchards and vineyards—and general use—is a world-beater. Wonderfully light of draft—weight carried on wheels, not on horses' necks. Great worker—20 to 30 acres a day with one team—and every inch of soil cultivated thoroughly—lifted and turned in long wavy level. Best of all—it hangs low and has great extension—making it a snap to work right up to trees without horse or driver disturbing boughs or fruit.

Find Out in Your Orchard—At Our Risk!

WRITE TODAY for catalog and 30 day trial offer. Pick the machine suited to your soil and orchard and use it for a month—and send it back if you don't find it the finest cultivator made.

Send for This Free Book
"Modern Orchard Tillage"—written by highly successful orchardist—contains information that may be worth hundreds of dollars to you. Sent for the asking.



Light Draft Harrow Co.
907 E. Nevada St. Marshalltown, Ia.

J. H. Hale, the "Peach King," writes: "THE DOUBLE ACTION 'CUTAWAY' is a splendid tool. I use it in polishing off my peach orchards several times a year. A good pair of horses handle it all right."

The genuine "CUTAWAY" tools are used and endorsed by successful orchardists from coast to coast and bay to gulf.

In orchard work the driver can cultivate under the trees and below the low limbs, the horses not interfering with the branches. The double levers give the driver full control of tool at all times. For regular farm work the gangs can be drawn together.

CUTAWAY DOUBLE ACTION ORCHARD HARROW

Every orchardist and fruit grower should have one or more of these labor savers and fruit makers. They will positively pay for themselves in one season. To investigate is to be convinced.

Thorough cultivation makes large crops. Stirring the soil lets in the air, sunshine and new life, and kills foul vegetation. The "CUTAWAY" disk slices, stirs, lifts, twists and aerates the soil. CLARK'S "CUTAWAY" TOOLS run lighter and do better work than any other machine. Lasts a lifetime.

Send today for new catalog, "Intensive Cultivation." Of course, it's free.

CUTAWAY HARROW COMPANY
968 MAIN STREET HIGGANUM, CONNECTICUT

The spring of 1912 is likely to hold the record for lateness, for a long time to come. Certainly it has been a long time since Colorado had such a late season. As these notes are written (May 17) everything is coming on with a rush, and perfect weather prevails.

The very cool weather has held back all fruit buds and even now apple trees are not yet in bloom. Apricot trees have shed their bloom, which was very abundant. Peaches, cherries and prunes are now blooming, and this morning the first blooms of crab apples were noticed. Apple trees will likely not be in bloom before the 22d to 24th. Last year they were in full bloom on the 7th.

As blooming time approaches it is evident that the trees which were pruned heavily in the spring of 1911 and which bore a good crop of fruit last year will have a very light bloom this year. These trees made a very rank wood growth, due to the excessive pruning, and matured a good crop of apples at the same time. This was too much of a load to permit the making of fruit buds for the 1912 crop, and consequently such trees have a very light setting of fruit buds.

That this light setting of buds is due to the heavy pruning, which threw the trees out of balance, combined with a heavy crop last year, is apparent. In an old orchard part of the Ben Davis trees were severely pruned, and some trees of the same age and same variety in adjoining rows were left unpruned. All these trees set a heavy crop of fruit last year, but at picking time the apples on the unpruned trees were much under-sized, while the pruned trees bore apples of fine quality.

This year the pruned trees have a very light setting of fruit buds, while the trees which were not pruned in spring of 1911, and which also bore a good crop of fruit last year, have an abundant setting of buds for this year's crop. These trees, of course, did not make the heavy wood growth last year that the pruned trees did. It is needless to say these trees have been severely pruned this season.

Jonathan and Rome Beauty trees had a light crop last season, and they were severely pruned early in the spring of 1911. These trees made a very rank growth, and at the same time made a fine lot of fruit buds for this year, and these two varieties promise abundant yields. Black Twigs last year had a fair crop, trees made a good wood growth, and promise a fair crop again this year.

Ben Davis, Gano, Missouri Pippin and White Winter Pearmain trees had a big crop last year, trees made a rank growth, but have a very light setting of buds for this year's crop.

THE BEGINNING OF THE SEASON'S CULTIVATION AT MORRISANIA WITH A CLARK'S CUTAWAY HARROW.

It is evident, therefore, that too much cannot be expected from an apple tree. They will do just so much, and no more. Some of our trees were confronted with three tasks: (1) To make wood growth to replace that which was removed by pruning; (2) to mature a crop of apples; (3) to make fruit buds for the following season. These trees performed the first two tasks, but fell down on the third.

Jonathan and Rome Beauty trees had a different problem, for they had a very light crop last summer. Accordingly, they made wood growth, matured a light crop, and at the same time made fruit buds for this season's crop.

A TREE PLANTING CREW AT MORRISANIA.

The few Ben Davis trees which were not pruned at all last year matured a good yield of apples and at the same time made plenty of buds for this year's crop.

For fear some one may claim that the trees should not be pruned, and thus be able to mature a crop and make fruit buds at the same time, it should be said that these unpruned trees bore apples which are too small to be profitable, and the bearing wood was getting too far from the ground. It seems to us that the proper thing to have done last season was to have practiced summer pruning. By removing part of the new growth of last season the trees would have been relieved of this burden and would have made more fruit buds for this year's crop. We shall try some summer pruning this season.

It shoud be borne in mind that this orchard at Morrisania had not been pruned for a number of years previous to last season. The pruning was very severe, the tops of the trees being lowered about six feet. The trees were thrown out of balance, therefore, and it will take some time to get them back into normal condition. It is likely that an orchard which is pruned a little every year will not present the problems with which we have to contend in handling this orchard.

In these notes last month it was suggested that perhaps our early-planted garden would have to be replanted. Not so. Everything has come up nicely, notwithstanding the cold weather, and our garden promises to be an unusually fine one this year. It's remarkable how stuff grows when once the sun warms up.

Potatoes and all grain crops were planted in good time, with the soil in fine condition, and good yields should be harvested this season. But little irrigation should be needed, for the soil is full of moisture at this date. Last year water was turned in the orchard for the first time on May 19. From present indications the first watering this season will be a month later.

The alfalfa which was planted in the orchard as a shade crop is coming fine. Half a bushel of oats per acre was planted as a nurse crop, but the spring has been so favorable this was hardly necessary. In fact, part of the orchard was seeded to alfalfa alone, and there the stand is perfect.

Who has tried alfalfa as a shade crop in an orchard and has turned hogs in to harvest the crop? If this alfalfa stays in our orchard until autumn of 1913 it will have to be cut next summer and the hay removed. Why would it not be as well to let hogs feed upon the alfalfa, keeping them out, of course, when the orchard is watered and until the soil has dried out somewhat. Who has had experience along this line?

Just now we are much interested in hogs. It takes a lot of meat to feed the men at Morrisania, there being about eighteen now on our payroll. We can market our hogs to mighty good advantage by killing them and eating them, and this is one way to keep down the meat bill. Last summer we grew a lot of bald barley to feed hogs for fattening, and have a considerable acreage planted to this grain again this year. At the same time we are growing some corn in some of the young orchards, and hope to get a good lot of feed.

One small patch of ground has been seeded down to field peas and bald barley. The barley will help to support the pea vines, and both are excellent hog feed. The hogs will harvest this crop themselves, and if the plan works well—and there seems no reason why it should not—then this ought to be a good crop to grow in a rotation with potatoes or some other such crop. Everything grown on the land will be turned right back, and the peas will have stored nitrogen besides.

Ask your neighbor to subscribe for The Fruit-Grower.

ANSBACHER'S

"Triangle" Brand

SAFE "TRIANGLE" BRAND FINE
ANSBACHER'S ARSENATE OF LEAD
PURE

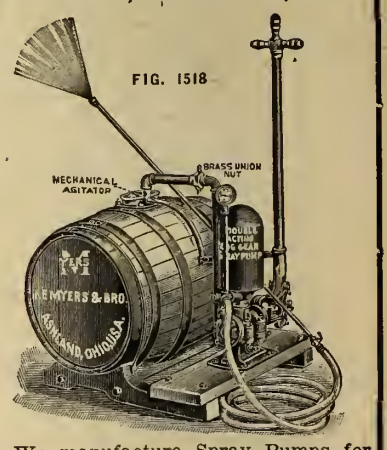
ARSENATE OF LEAD PASTE

Is Different
99% PURE!
No Hard Lumps!
No Slow Mixing!
No Coarse Particles!
No Dangerous Impurities!
No Damage to Lime-Sulphur!
DEALERS IN ALL DISTRICTS
Write at once for our free booklet
"The Science of Spraying"

A. B. ANSBACHER & CO.
525 Fifth Ave. NEW YORK

In writing advertisers please mention The Fruit-Grower.

MYERS SPRAY PUMPS
ALL KINDS
NOZZLES, FITTINGS, ETC.



We manufacture Spray Pumps for every need, from the small hand and bucket pumps to the large power outfits. Send for catalogue and prices of Pumps, Hay Tools and Barn Door Hangers
F. E. MYERS & BRO.,
160 ORANGE ST., ASHLAND, OHIO

ENTOMOID
THE UNIVERSAL SPRAY
Combines the best features of the Lime-Sulphur Oil Emulsion and Soap Sprays, against scale, all soft-bodied insects and fungus diseases. Endorsed by Experiment Stations. Cheapest and most effective. Unequalled insecticide and fungicide. Sample and prices on request.
Entomoid Chemical Co., Woonsocket, R. I.

Rubber Stamps
You need Rubber Stamps for marking berry boxes, crates, stationery, etc. Send for free catalogue.
Gardner Office Supply Co. SPRINGFIELD MISSOURI

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing
Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*
M. BRUNSWICK & CO., Rochester, N. Y.

HAVE YOU CONQUERED SAN JOSE SCALE?
H. J. WEBER & SONS NURSERY CO.,

We guarantee it can be done with "Scalecide" for less money, with less effort, and more effectively than with Lime-Sulfur or anything else. "Scalecide" may be mixed anywhere, in any kind of a tank or barrel that is clean. "Scalecide" does not corrode the pumps or clog the nozzle; consequently the pumps work very much easier, with less labor, wear and tear. "Scalecide" will not injure the most delicate skin, and may even be placed in the eyes without the slightest inconvenience or injury. "Scalecide" is used successfully by fruit growers in the United States, South Africa, Porto Rico, Cuba, and Australia, because experience has taught them that the greatest perfection in fruit and foliage is produced by the continued use of "Scalecide," and with less labor and less expense. Let us prove these statements. A postal request to Dept. "E" will bring you by return mail, free, our book, "Modern Methods of Harvesting, Grading and Packing Apples," and new booklet, "Scalecide—the Tree-Saver." If your dealer cannot supply "Scalecide" we will deliver it to any railroad station in the United States east of the Mississippi and north of the Ohio rivers on receipt of price: 50-gal. bbls., $25.00; 30-gal. bbls., $16.00; 10-gal. cans, $6.75; 5-gal. cans, $3.75. Address: B. G. Pratt Co., 50 Church Street, New York City.
WESTERN DISTRIBUTING AGENTS, NURSERY, MISSOURI

A Little View of Headquarters on Morrisania Ranch.

MORRISANIA

All Right for Another Big Crop

This season promises to be a repetition of former years, for there is no danger of late spring frosts catching fruit blossoms at Morrisania. The bloom on all fruit trees is abundant again this season, and the record of having practically full crops of all fruits every year will be sustained. Apricots, peaches, sweet and sour cherries—all have set full crops, and so have all varieties of apples except the trees which had the bumper yield last year, and this is the off season for them. And, mind you, this is the record for twenty years—orchard heaters have never been used in all that time. Sureness of crops is only one of the advantages of Morrisania—There are many others.

Morrisania is an Ideal Place for a Home

Climate is as fine as can be found in all the world. Mountain scenery is inspiring; air is the pure, dry air of Colorado; water is pure, soft water from the melting snows. All kinds of vegetables grow to perfection here.

Morrisania Has Good Shipping Facilities

Shipping station of Grand Valley is located on main line of two railroads—and that means a lot in a season of heavy crops. The best shipping associations in the country are available to handle our crops, getting highest prices for them.

Morrisania Fruits Are of Highest Quality

Morrisania apples have the crispness and snap of apples grown in Northern districts, and the fruit ripens when nights are cool, giving a texture to the fruit which insures long-keeping quality—we keep Jonathan apples in the cellar at Morrisania until July. The peaches, apricots and other fruits grown in our soil, rich in mineral elements, are wonderfully rich and sweet. The same is true of garden vegetables, and our peas, beets, sweet corn, melons, etc., have a sweetness that must be tasted to be fully appreciated.

Now is the Time To Buy At Morrisania

Only a few tracts remain to be sold, and a number of persons who have seen Morrisania, and who must sell property elsewhere before buying here, are asking to have tracts reserved. This cannot be done as long as someone else is ready to close contract. Everyone who sees Morrisania likes the place. A Michigan subscriber of The Fruit-Grower was here the other day and has gone now to get his wife to show her what a fine place it is. If you want high-grade fruit land, or if some member of your family needs Colorado's health-giving climate, you owe it to yourself to see Morrisania as soon as possible. Come out now. Low rates to Colorado are in effect on all railroads. Buy your ticket to Grand Valley, on both D. & R. G. and Colorado Midland Railways. Write for any additional information.

MORRISANIA LAND & ORCHARD COMPANY

GRAND VALLEY, COLO. or Box 1277, ST. JOSEPH, MO.

OUR HOME FOLKS

Conducted by MRS. RUTH MOTHERBY. Address all Communications to Home Editor The Fruit-Grower

A New Comer

May I enter the home circle? I'd like particularly to call on Aunt Keturah, for I'm very much interested in her talks on home nursing. I am hoping she will tell us some more of her experiences. Now, to show my wish to be useful, I will send some recipes that we think pretty good, and which have the merit of being inexpensive. The first is for

Meat Loaf.

Chop fine one cupful of cold roast beef, and add one cupful of bread crumbs and two eggs. Season with salt, pepper and a little sage or onion. Mix well, put in a greased baking powder can and bake for half an hour. Slice thin, and serve either hot or cold.

Eggless Doughnuts.

Sift three teaspoonfuls of baking powder with one quart of flour; rub in a piece of butter the size of an egg, then add one cupful of sugar and one pint of milk to which has been added one dessertspoonful of corn starch. Season with nutmeg. Add more flour, if needed, and fry in hot lard.

Rice Balls.

Mix cold boiled rice with beaten egg, fry as you do potato balls. This is a nice way to use left-over rice These balls may be eaten with maple syrup, or they may be served with meat.

MRS. W. K.

A Friend to Aunt Keturah.

I, too, am interested in Aunt Keturah—especially in her letter on stomach trouble. And I'd like to know more about her treatment of appendicitis. I think her experiences will be of benefit to many, and so I am hoping we shall hear from her frequently.

Here are a few of my pet recipes that some one may be glad to get:

For Croup.

Beat the white of an egg to a stiff froth, then add one tablespoonful of sugar, and one tablespoonful of water; stir it good and give all the child will eat if croup is bad. Then give tablespoonful every hour until croup is gone.

Mother's Tea Cakes.

One egg, one cup sugar, half cup of butter or beef suet, quarter cup cold water, one teaspoon soda, flavor to suit, flour enough to roll. Cut in fancy patterns, bake in a hot oven. Beat the egg, butter and sugar together, dissolve soda in the water then add it and the flavoring, lastly the flour.

Sponge Cake.

Three eggs, two cups sugar, two cups flour, one cup boiling water, two teaspoons baking powder. Beat eggs and sugar to a cream, add half the flour, then the boiling water, mix baking powder with the rest of the flour and add last; bake in a quick oven. This is good either in a loaf or as a layer cake.

MRS. GEO. W. BOYCE

Maryland.

Woodwork Beautifiers.

Here is a recipe for a wash for hardwood floors that is simply unsurpassed. It was given me by a man who worked in a furniture factory for many years. Later, he had charge a second-hand store, where old furniture is made to look like new before it is again put on the market. Then he served an apprenticeship with a firm who make a business of putting hardwood floors in order.

Take a tablespoonful, each, of turpentine and raw linseed oil, and a piece of Ivory soap the size of an egg. Boil this in one quart of water until it is dissolved, then wash the hardwood with it, using it as hot as can be borne by the hands. You do not need a great deal. Wring out the cloth frequently. This is much easier than to keep the floors waxed or varnished, and after it has been used a few times, you will see that the result is entirely satisfactory. It is also used on hardwood benches or other furniture that has become rather old, or that is subjected to very hard use.

For furniture polish, nothing is better than to boil half a pound of castile soap in a gallon of oil until the soap is dissolved; then add one ounce of sweet oil. Apply this with a cloth and wipe dry with a piece of chamois skin. I use dark canton flannel when I do not have the chamois skin, and with good results. This is fine for expensive hardwood chairs, when they show finger marks. It is also fine for dining tables that show the marks from hot dishes. If the marks are very bad, however, better polish the table, first, with a preparation of rotten stone and crude oil. This should be mixed as used, and rubbed in well.

P. E. WOOD.

An Appeal.

Won't some kind soul, who knows, please tell us mothers whose ages run from forty to sixty, how to make ourselves look young and loveable? It is bad enough to know that we are getting along in years, without having to realize, also, that we show our age. We know that our skin is getting flabby, that new wrinkles are forming every day, that we are too fleshy, that we have headaches and rheumatic pains that cause lines to form before their time—in fact, we are obliged to see too many signs that youth has departed. We would try some of the exercises recommended to reduce flesh, but we get so tired during the day that we have not the courage to do anything at night more than is actually necessary before going to bed. That is why we cannot make use of the many creams that are recommended; we are too tired to experiment. Besides, most of us haven't the money. Yet we feel just as badly as anyone else to know that we show how old we are growing, and we are just as anxious as other wise and good women to have husband and children think us pretty and interesting.—Mrs. Happy.

I am glad Mrs. Happy wrote that letter. It is true, that I can't help her much, for I am not a beauty specialist, but I can offer a few suggestions. What I am hoping is that others will also offer a few born of experience, and that we may be able to work up a system of beauty culture among us that will really be practicable and practicable. It is as she says about the various creams and condiments—recipes for which have been sent us by women who vouch for them—they will doubtless do all that is claimed for them, but there are few of the very busy who have time, strength or patience to try them long enough to realize what they can do.

Of course we all know that what helps one may not help another; it is largely a matter of experiment. Now, I have a lotion that is put by a firm in Minnesota—not to make one beautiful—but as a skin cure. It is good for burns, eczema, rash, and other forms of skin disease. While using it for a bad case of sunburn, I discovered that it would cleanse the skin, removing accumulations from the pores even after I had used soap and hot water. So I began using it at night as other women use creams. It takes only a minute to rub the face and neck with a bit of soft cloth wet with this mixture. It keeps the skin so soft that it does not wrinkle easily, and I have the satisfaction of knowing that I am using something made to cure the skin, instead of something that might injure it. Now, if you try, you can also find something that will help you in the same way.

Beauty specialists tell us that we must be very careful not to use a coarse towel, or to rub the skin very hard. They may be right, as a rule; but I have found that it is good for my skin to rub it hard with the palms of my hands—just as hard as I can. At first, it made my face sore, but I persisted and the skin became used to it. The friction made it work, and so I do it every night after I have gone to bed. It rests me, and it is not hard to do it, then. While I do not have the complexion of youth, I do look ten years younger than other women f my age with whom I associate.

I am one who takes on fat with age. I am a very light eater, but I seem to be able to gain flesh without food. Finallly, I got to a place where the doctors said my heart was in danger and that I must lose fifteen pounds of flesh. When one is face to face with a fact like that, one goes to work in earnest. I lived on buttermilk until I had reduced sufficiently, and I never felt better in my life. That was two years ago, and I have not gained in weight, because I discovered that, although I did not eat much, I was eating more than I needed, and I now eat more carefully. It is not a hardship, after the first few weeks. In fact, one feels so much more youthful that it is a pleasure. I believe Aunt Keturah has told you how to do it, and I need not take the space.

It is absolutely unnecessary to have a loose, hanging double chin, or a stringy neck. I know from experience. And there is nothing that does more to make one look old. When you see "corners" coming on your face, each side of the chin, that is the time for you to wake up and get to work. Take a few minutes every day to turn your head from side to side and bob it back and forth, just as far as you can make the muscles stretch, and as many times as you can without great discomfort. That acts like massage on the flabby muscles and tones them up. They get larger, as they were in youth, and fill up the skin—and there you are! Now this can't be done in a week or a month—but if you stick to it you'll see the results in a month. It doesn't take long each day, but it must be done every day. The interesting part of it is that it seems, also, to feed the brain, and so makes you brighter. You take a keener interest in things.

I am a very busy woman, and I haven't patience to fuss with myself very much; but I do the things I have mentioned, and I know they have helped to keep me young.

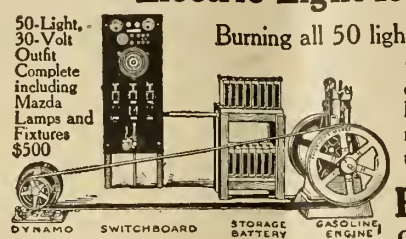
RUTH MOTHERBY.

Blood Purifiers.

The ladies who have asked me for suggestions as to blood purifiers are going to be disappointed because my reply comes so late. It couldn't be helped. This department is made up a whole month before you see it, and there must be time enough before that for the letters to reach me, and for

Light for all your buildings at any hour of the day or night. No danger of fires or explosions from lamps or lanterns. No lamps to clean and fill. And with all its advantages

Electric Light Is Not Expensive



Burning all 50 lights of this system for 5 hours would only cost about 10 cents for fuel oils. You would seldom burn all lights at once hence this low cost would be much reduced. Let us give you full particulars. Write for Catalog No. CD 953

Fairbanks, Morse & Co.

Chicago St. Louis Kansas City

Your Boy's Happiness

is one of your first considerations. Have you ever thought of the tremendous importance and influence of his READING MATTER? There is nothing in this world that will do the boy more harm than cheap, trashy literature.

Get the Boys' Magazine For Him In no other way could you give him more solid pleasure, entertainment and instruction.

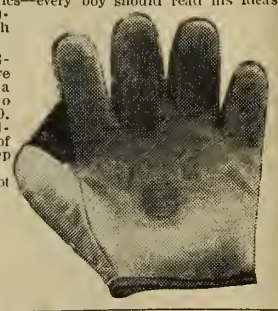
This splendid magazine is chock full of just the kind of reading YOU want YOUR boy to have. Clean, inspiring stories written by such noted boys' authors as Hugh Pendexter, Everett T. Tomlinson, Wm. Heyliger, etc., etc. PRACTICAL and INSTRUCTIVE departments devoted to Electricity, Mechanics, Photography, Carpentry, etc.

Walter Camp writes the editorials for THE BOYS' MAGAZINE and also conducts the Athletic Department. Mr. Camp is known everywhere as America's highest authority on athletics—every boy should read his ideas of clean, manly sportsmanship. The Boys' Magazine is beautifully illustrated throughout—each issue has a new handsome cover in colors.

Special Offer In order to introduce THE BOYS' MAGAZINE to thousands of new readers, we will offer to send the magazine for a whole year, together with a copy of our book, "Fifty Ways for Boys to Earn Money," and also this splendid baseball glove ALL FOR ONLY $1.00. This glove that we give away with a YEARLY subscription is a HIGH-CLASS one and one that your boy will be proud to own. It is made of finest tan leather, felt padded, LEATHER LINED, web thumb and deep pocket. We prepay all transportation charges

Order today. We will refund your money promptly if you are not more than pleased with your investment.

(This offer is open to new subscribers only.)



The Scott F. Redfield Company

1057 Main Street, Smethport, Pa.

THE BOYS' MAGAZINE at all News Stands, 10c a Copy

YOU

owe it to yourself and family to hear the

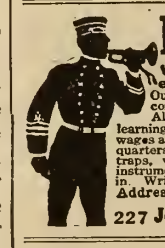
Victor

—to get acquainted with its beautiful music that belongs in every home.

Hearing is believing. Write us today and we'll send you the handsome Victor catalogs and tell you where you can hear the Victor. The dealer will sell on easy terms, if desired. Victors $10 to $100. Victor-Victrolas $15 to $200.

Victor Talking Machine Co.
23rd and Cooper Sts.
Camden, N. J.
Berliner Gramophone Co., Montreal
Canadian Distributors

Always use Victor Records played with Victor Needles—there is no other way to get the unequaled Victor tone.



Learn to Play

We give FREE Set of Lessons with every string or wind instrument. Our self-learning method is simple, correct and complete. You need no teacher or experience. All that is required is an instrument and our self-learning lessons. A musician can always make big wages and playing is a pleasure besides. We are headquarters for cornets, horns, clarinets, flutes, drums, traps, violins and all kinds of band and orchestra instruments. Let us know which you are interested in. Write for our free musical instrument catalogue.

Address JENKINS MUSIC CO.
227 Jenkins Bldg., Kansas City, Mo.

BUY YOUR APPLE BARRELS EARLY and pay for them in the fall on easy terms. Write for full particulars. Also new and second hand egg cases, fillers, etc., etc.
P. McKANNA'S SONS, COOPERAGE, Honesdale, Pa.

my reply to be written and sent to Mrs. Motherby. I did try to send out personal letters, at first, but soon gave up that as too big a job for a woman of my age who has not been accustomed to writing, and who has too many irons in the fire anyhow.

One of the simplest and best blood purifiers is composed of sulphur and cream of tartar. It is ignored, these days, because it is old fashioned; yet there'd be much less complaint of rheumatic pains in the spring if this remedy were given as faithfully as our grandmothers used to give it. I mix one-fourth cream of tartar to three-fourth sulphur.

Another excellent old-fashioned remedy for the blood is epsom salts. In taking either of these remedies as a blood purifier, do not take enough to act as a physic. The best way is to take a very small dose four times a day—just after eating and on going to bed. I have gotten into the habit of giving them in large capsules, for most people can take them that way when they refuse to take them otherwise. Give two or more capsules at a time, according to the individual. If you find that the bowels are moving too freely, give less.

If you will notice, one usually has little appetite in the spring. That is Nature's way of giving the blood an opportunity to clear itself. But many mistaken housewives hasten to find something to give an appetite, and work themselves to death to cook something that shall tempt the family to eat. And the family regards itself with awe because it cannot eat, when it should be giving thanks that hunger doesn't compel the stuffing process. A person must be very sick indeed before it becomes necessary to tempt his appetite. I do it when tuberculosis is threatened, but in other cases, when the patient puts on a long face and says, "Oh, I can't eat anything," I reply, "Thank God for that! Now we'll get your clogged-up machinery in good working order."

So, if you are not one of the lucky people whom Nature seems to take care of, and if your appetite is just as aggressive in the spring as it has been all winter, why, you've got to put the brakes on, and give yourrself a chance to get cleaned out. Just remember that your body needs a spring cleaning quite as much as your cellar does. Banish cake, pie, pudding and meat from your table. The man of the house may insist upon some meat, but persuade him to cut down his usual supply, and coax the children to abstain entirely for at least two weeks. Offer a prize to the most successful. Make a play of it, and they'll soon learn that there isn't nearly as much danger of starving to death as they had imagined. Meanwhile, coax them along with fruit juices. If you are a good housewife, you provided quarts of these juices during the canning season. Let them have all the fruit they want. Rhubarb is one of Nature's remedies for the blood, and it is even more efficacious when eaten raw than when cooked. Raw carrots should also be eaten. So should dandelion greens. Eat at least one lemon a day, without sugar.

If you feel tired and weak and as if you must sleep—then sleep. That is what you need. I know it is sometimes hard for people on a farm to take rest in the spring; but I also know that much of the difficulty lies in their imagination. They simply think they can't do it. I've had the pleasure of changing the minds of some of these old-fashioned drudges, and they have learned that they can do more work when they rest, than they did when they were forcing their tired bodies to keep at it even when they could hardly drag themselves about. There is time enough for all anyone really has to do, if only the work is planned intelligently. I learned this from a teacher of New Thought, and it has been worth a fortune to me, in that it cured me of the worry habit. I look younger than I did ten years ago, and can do more work, yet I take more time to rest.

Spring is the time to feel glad—not worried. It is the time to go about one's work with hope and joy—even to the cleaning of house in which the body lives, and that more wonderful house in which the soul lives.

When you clean you cellar you don't throw things in as fast as you carry them out. Be as merciful to your system. Eat sparingly of food that is easily digested, and take as much liquid as possible in order to wash the body out. Don't use much tea, coffee or chocolate at this time. Fruit juices, buttermilk and pure water are preferable. The bowels should move freely at least twice a day.

The herbs that I like best for the blood purifiers are burdock, yellow dock, sassafras, boneset, dandelion, sarsaparilla, poke root, blue flag root and yellow dock. These can be combined, if liked, or two or three may be used together. Sometimes, you find a person who can't take a mixture, but will take first one and then another with most satisfactory results.

A good spring tonic is gentian root, colombo root, sweet flag, golden seal root, prickly ash bark and wild cherry bark and cayenne pepper. If the roots and bark have been powdered, take a teaspoonful of each, and also of cayenne pepper, put them in a glass jar with a pint of pure sherry wine, and let it stand for four days, shaking thoroughly twice a day. Take a teaspoonful of this, from once to four times a day, according to the patient's age and condition. It is impossible to say just how much should be taken, without seeing the patient. These herbs may be steeped and drank like tea, if there are objections to wine. Cayenne pepper, alone, often proves an excellent tonic. If the bowels become very loose from weakness, get ginger root and candy in it, and let the patient eat that.

AUNT KETURAH.

Hard Times Stories.

(Continued from last month..

When my husband and I set sail together we had but little of this world's goods and were not over-charged with ambition to be rich. Our parents before were poor and had been unable to give us anything more than a very wild, foolish filley (which was really good for nothing), and a very ordinary self-sucking cow. Neither of us knew how to trade these off for something better. The most valuable knowledge we had was to work hard and economize, living on nearly nothing. By doing this for nearly five years we had saved $200. My husband being keen-eyed and high-minded, like an eagle, sought the highest point on Black Oak Ridge as a place to build his nest and rear his young. This point was above the timber line, so he planted it in peach trees. We subscribed to The Fruit-Grower, and read it carefully. By following the directions he found there, my husband was enabled to raise the finest peaches in East Tennessee, and to get the best prices. We have brought up a large family of boys and girls, and have given them a good education. While we do not expect to leave them a fortune, we will leave them no debts to pay, no feuds

The Tree System—The Bell System

A NOBLE tree thrives because the leaves, twigs, branches, trunk and roots are all working together, each doing its part so that all may live.

Neither the roots nor the branches can live without the other, and if the trunk is girdled so that the sap cannot flow, the tree dies.

The existence of the tree depends not only on the activity of all the parts, but upon their being always connected together in the "tree system."

This is true also of that wonderful combination of wires, switchboards, telephones, employes and subscribers which helps make up what is called the Bell Telephone System.

It is more than the vast machinery of communication, covering the country from ocean to ocean. Every part is alive, and each gives additional usefulness to every other part.

The value of telephone service depends not only on the number of telephones, but upon their being always connected together, as in the Bell System.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

CIDER PRESSES

THE ORIGINAL MT. GILEAD HYDRAULIC PRESS produces more cider from less apples than any other and is a

BIG MONEY MAKER

Sizes 10 to 400 barrels daily, hand or power. Presses for all purposes, also cider evaporators, apple-butter cookers, vinegar generators, etc. Catalog free. We are manufacturers, not jobbers.

HYDRAULIC PRESS MFG. CO.,
(Oldest and largest manufacturers of cider presses in the world.)
51 Lincoln Avenue, Mount Gilead, Ohio

In writing advertisers please mention The Fruit-Grower.

Elburn Piano $1.25 a Week

Low Prices—Easy Terms

We will sell you a genuine Elburn Piano and let you pay for it $5.00 a month. We also handle in this territory Steinway, Vose, Kurtzmann, Harwood and other standard well known pianos. There is so much misrepresentation and so much trash that we urge you to buy only reliable pianos. Our house has been in business many years and we have eleven big stores. We can ship you a piano from our nearest store. We can save you money.

We can save you money on a reliable piano. You must be careful in buying to see that the house you buy from is reliable and that they will keep their promises and not misrepresent.

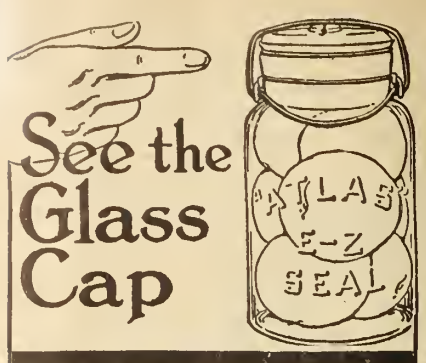
We refer to any bankers in the west and to our thousands of well pleased customers. Very likely we have sold to a friend or relative of yours. We will send you prices and terms and full information. All this is free and without any obligation on your part to buy. The Jenkins plan of dealing is the greatest success plan in the world for selling pianos.

Don't buy or agree to buy a piano until you hear from us. This means much to you. We can show you pictures and give you prices, terms and information that will please you greatly. Our advice will surely be helpful as it is genuine.

Buy Only a Reliable Well-Known Piano

Nearly all pianos look alike and sound alike when new. But a month or a year will show the difference between the real piano and the cheap imitation. You must be very careful and not allow yourself to be fooled by misrepresentation. We can show you what is what in pianos and who is who in the business. Just drop us a letter or postal today and say; **"Please send me prices, terms and particulars about the Jenkins Piano Plan."** Address

J. W. Jenkins Sons Music Co., 705 Jenkins Bldg., Kansas City, Mo.



See the Glass Cap

The very best jar from the cap—down!

It is no trouble to "jar" things these days. Even many vegetables that you never thought of "canning"—it is *easy* in these all-glass jars.

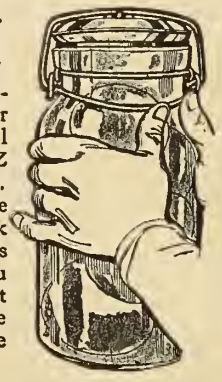
No spoiled vegetables or fruit—no sweltering over hot stoves for nothing! Just put up most fruit and "garden stuff" *whole* and get *best* results from the

E-Z SEAL JAR

This jar is *safe*. The glass cap fastens with a wire spring—it closes with a *touch* and opens with a *tilt*—no wrist-turning, no neck-twisting, no shattering or splattering!

Then — the heavy, green-tinted glass keeps out the light. Your fruit opens fresh and plump instead of faded and *wilted*. Try the E-Z Seal way.

Free Jar—Free Book



Cut out this coupon, take it to your grocer — he will give you one E-Z Seal Jar — FREE. Be sure and write us for FREE Book of Recipes—it tells many things you should know. Get the Jar from the *grocer*. Get the Book from *us*.

HAZEL-ATLAS GLASS COMPANY
Wheeling, W. Va.

1-Qt. E-Z Seal Jar CF FREE for the Coupon

Please note—In order to secure free jar this *coupon must* be presented to your dealer before Sept. 1st, 1912, with blank spaces properly filled out.

HAZEL-ATLAS GLASS CO.,
Wheeling, W. Va.

This is to certify, That I have this day received one "Atlas" E-Z Seal Jar Free of all cost and without any obligation on my part. This is the first coupon presented by any member of my family.

Name_____

Address_____

TO THE DEALER:—Present this to jobber from whom you recieved E-Z Seal Jars. All coupons must be signed by you and returned before Nov. 1st, 1912.

DEALER'S CERTIFICATE. This is to certify, that I gave away one "Atlas" E-Z Seal Jar to the person whose signature appears above.

Dealer's Name_____

Address_____

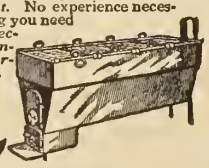
My Big, FREE Book Shows How To Get Bigger Fruit And Vegetable Profits

It fully explains how to make big profits from your *entire* fruit and vegetable crops with my *Stahl Portable Canning Outfit*. There is an ever increasing demand for good, home-made canned fruits and vegetables—right in your own locality. Why not have this big profit, not be derived from any other source?

Stahl's Canning Outfits

"Turn Waste Into Gold"

Each one a complete home canning factory, varying only in capacity. Costs but little to buy—big money-maker from the start. Anyone can run a *Stahl Portable Canning Outfit*. No experience necessary. I supply everything you need including *My Special Directions which contains formulas for canning the different fruits and vegetables.*



Write for my big *free* Canning Book today.

F. S. STAHL,
Box 202 Quincy, Ill.

In writing advertisers please mention The Fruit-Grower.

BE A REPORTER FOR THE M.S.I.A. EARN $6 to $15 A Day!

Any one can secure the information we want. Send stamp for particulars. M. S. I. A. Association, 124 Association Building, Indianapolis, Indiana

Get your neighbors to subscribe.

to fight, and no prejudices to be kept up; but we are very likely to leave them the goose that lays the golden egg.—Mrs. M. V. Beene.

At the time of our marriage we had, to start with, a good team of horses, some farm tools, two cows, some chickens and turkeys, besides money enough to get what we had to have in the house. We rented an eighty-acre farm for cash rent, and the first year, after the expenses had been paid, we had nothing left. I raised some chickens and turkeys, selling $7 worth of chickens; but that, too, had to go to get even. I had ninety turkeys, but twenty-seven of them strayed away to a neighbor's when it was near Thanksgiving, and he claimed them; the worst of it was that he was a rich man, but he kept my turkeys. The next year we put in only eight acres of oats and fifty-five of corn. It was a dry spring and the oats were so short that they had to be cut with a mower. We were glad we had so much in corn, for that looked to be good. In threshing time, though, there came one day of hot winds and that was the end of our corn crop, for in the fall we had nothing but a few nubbins to gather. After this, we had to borrow money to pay our rent, and the next year we moved to a 160-acre farm, which we rented for half the crop of grain. The crop was large, but we had to haul it nine miles to town and then sell it for 9 cents a bushel. We had forty head of shoats, but the hog cholera took them, so we had to sell our corn. A few years after that, when we had more cattle, we lost many, besides one horse, with stalk disease. We then had a couple of wet years, and the farm we lived on, not being tiled, most of our crops were drowned out. We were forced to sell some cattle to pay the rent. A cattle buyer came to our home one day and we sold $250 worth of stock. He gave us a check, just as he did to all the others in the neighborhood from whom he had bought. We had this check cashed and paid the rent with part of the money. Soon after the bank notified us that the check had been rejected, and we had the money to pay, giving a mortgage on what we had left to raise the amount. The cattle buyer had gone with the cattle to Dakota, and nothing could be done. (The man came back later and paid, but it was more than a year before we got our money from him.) These are some of the things that I call hard, but we lived through them, and always kept on working. We now own a nice piece of property and three acres of ground, in town. The children go to school, and the oldest boy will graduate this year. When we were on the farm they worked hard, helping us, and I think they will know the value of money better for having been through the hard times we all had when trying to get a little ahead.—"Mrs. H. C."

I laugh when I hear Americans tell their hard-time stories. What do the people of this country really know about hard times? They should hear the stories that could be told by those who come from the old country.

Nearly twenty years ago I landed in New York with my family—an old father and mother, a wife and seven children. I had bought tickets to Minnesota. When I reached my destination I had $54 and what clothing we brought with us. We did not know the language, but we had a friend who had lived here nearly four years. We came with the intention of owning a farm some day. We wanted a home in the land where our boys could not be forced into the army. We had no place to live. Our friend's house was very small—hardly large enough for his own family, but he provided a tent for us. We had followed his advice and came in the spring—which was good. Then we found work. When I hear men tell that they cannot get work, I do not believe it. They may not get the kind of work they want, but we have found that there is always something to do for anyone who is willing to do anything. We worked for small wages—but what we got was more than we could have earned in the old country. We rented an acre of plowed land around our tent from our old friend, and those of the family who could not go away from home to work cared for the garden. If I should tell you all that was raised on that acre of ground you would not believe it.

We never spent as much as we earned. When we earned more, we did not spend more, as Americans do, but we saved more. That is the way to do if you are working for a home. My neighbors tell about having nothing but pork, potatoes and corn bread to eat during their hard times. There were weeks when we had neither pork nor potatoes. We bought skimmed milk, that most of our neighbors saved for their pigs, and let it sour, and we lived on that and boiled wheat. Sour milk, like that, is now recommended by the best physicians. Sometimes we worked for neighbors who could not pay money, and took a pig or a chicken or potatoes in payment. Then we had a festival.

We lived in our tent all winter. We pasted paper on the inside and shoveled snow all around it on the outside, and bought a coal burning cook stove. Our eighth child was born in that tent in January, and was never sick a minute. In fact no one of the family took cold. We lived in that tent two winters, and then rented a place with a house on it. We now have our own home and three hundred and twenty acres of land, and we have raised eleven children. When we left the tent, it was taken by our eldest son, barely twenty years old, who sent for his sweetheart, and was married. Today they have a home of their own and three children.

The trouble with Americans is that they can't stand hardship. They have been accustomed to luxuries too long. I presume my grandchildren will tell of our hard times, but my wife and I don't think we've had any.—Steinbach.

I was born in the year 1850, in the hills of Pennsylvania, and my parents were poor. They lived on a home of eighty acres, and that was poor, too. Try as they would, they could not make a living for their large family of boys and girls. At an early age I worked away from home in the summers and attended school in the winter. I recall to mind those childhood days, as often I trudged through deep snow and piercing wind to school, with only a meager lunch in my pocket, such as a dry crust of bread or a pancake. During the summer I worked in the broiling sun, when a mere child, carrying fertilizer by the bucketful over patches of ground, spreading it on corn hills. At night, as I turned my face homeward, with my aching feet almost too tired to carry me, I would squeeze the small piece of silver in my pocket, the tears streaming down my cheeks, when I thought how hard I had worked for such little pay. I soon worked both winter and summer, and my school days were ended almost in the beginning. At the age of twenty-one I made a firm resolution to secure a home of my own, and for this I worked. At the age of twenty-four I married; had accumulated enough money to buy a small house, a good team and harness, hoping that I was forever past the stage of using poor harness that needed a patch of wire at every turn of the road. I began the huckstering business, which required early rising. I was often beginning my day's work at 3 a. m., and just as often retiring at 10 at night. This continued strain was too severe for my already overworked constitution, and my health became so impaired that it was necessary to go west. In May, 1877, I arrived at Sweet Water, Buffalo County, Nebraska, and started in the mercantile business. My first attempt consisted of a small amount of sugar, coffee, meat and some other necessaries, which I kept in a part of my dwelling house. My health improved so much that I concluded to make this my home. My business increased rapidly, and at the end of thirteen years I owned a large store, 20x60 feet, besides a large dwel-

$1 Worth for 25c

We have a few hundreds of the Brother Jonathan series of fruit booklets, of which we sold thousands a few years ago, and want to close them out quickly. These books originally sold at 25c each, and Fruit-Grower readers took thousands of them at that price.

We Now Offer Four of These Books, postpaid, for 25c

Select the numbers you want, and send your order today, for there are only a few of several numbers. Orders will be filled as they are received, and if any number you select cannot be furnished, we reserve the right to send another number instead. Here is the list of those we can furnish now:

No. 2—A Treatise on Spraying. Tells all about how to fight insects and diseases which attack apples and strawberries.

No. 3—Strawberries and How to Grow Them. A dandy little book telling how to grow this most valuable fruit.

No. 4—Gardening. A practical little booklet which discusses all phases of gardening, including making and management of hotbeds.

No. 5—Packing and Marketing of Fruits. This book takes up the problem of packing and marketing in a common-sense manner.

No. 6—Bush Fruits. A booklet which discusses the culture of raspberries, blackberries, gooseberries, etc.

No. 7—Grapes. This booklet discusses planting and care of vineyards, and illustrates the famous Munson system of training the vines. Only 75 copies of this number are available.

No. 8—Pruning Booklet. Discusses the whys and wherefores of pruning fruit trees and shrubbery. Only 50 copies available.

No. 10—Stone Fruits. Discussing the culture of cherries, plums, peaches, etc., with notes as to varieties.

No. 12—The Corn Book. A little book containing valuable information on corn culture, including chapters on seed selection.

Order These Books at the Rate of Four for 25 Cents

Send us list of the numbers you want, and act quickly, so that you will be sure of getting the numbers you want. Here's a real bargain, for thousands of these booklets were sold at 25c each, and every purchaser received his money's worth. Send order today to

THE FRUIT-GROWER, Book Dept., ST. JOSEPH, MISSOURI

ling house, which was partly built on the store. I also had 800 acres of land, about seventy head of cattle, and one hundred and fifty head of hogs. One morning in June the sky was clear, with the exception of a small cloud, which grew blacker as it rose in the southeast. Towards noon we could hear angry thunder, and the wind raged fiercely around the buildings. The sky grew black as night, and the hail came down heavily, just at mid-day. I, with my family and hired man, rushed to the cellar, where we crouched in one corner under some boards which stood in a slanting position over us. We had been there but a few moments when the building was lifted from over our heads and carried at least a hundred feet, together with a safe weighing about fifteen hundred pounds. Five other buildings were also torn to pieces and strung for miles around. Stock was injured and some were lost. What few trees there were were wrapped in dry goods and ribbon. For some time after this we lived in a sod stable, using an old door for a table. We did not even have a chair to sit on. Everything of value was sold, together with the land, and part of the proceeds went to pay commercial debts. After this I kept a store near Beam Creek for about two years, then I traded for a farm near Petersburg, Va., in 1892. tried farming there about four years, but the land was so poor that it required continual building up. This was not satisfactory, so, in 1898, I traded for a farm near Louise, Wharton County, Texas. Here I had 426 acres in the cotton belt, and I tried raising cotton. The promising crops were usually destroyed by the boll weevil, and, as my family was suffering from chills and malaria, we decided to move farther north. Early in 1902 we traded for a farm near Warsaw, Benton County, Missouri. My first year's farming was the year of the drouth and there was nothing raised. The next year I hired my farming done, and I took up the mercantile business at Passo, Mo., where I continued this trade until the fall of 1910. Then I sold out my store and built a house on my farm, just above the store. My farm is a stock farm, and I am now settled down for good.—"A Farmer."

Benson Bruce put on his coat and sweater with a sigh, saying, "Well, mother, I will go down to Cy's and see, but you know they are usually out of anything when you wish to borrow." "Now, Bennie," answered his mother, "be more charitable. They are so poor, I presume, it takes all they can scrape together for necessities." "Well, if kerosene isn't a necessity, I don't know what is," said Benson, as he shut the door none too softly. The ride in the frosty air made him feel brighter and more cheerful, so he whistled a line of "Just Because, etc.," as he knocked at Cy Larmen's door. No response. He knocked again with the same result. "Goodness, I've come clear down here and nobody home." He was about to turn away, when he heard a slight noise as of a stifled cry. He pushed the door open and stepped inside. Why! What! There was frost on the stove! Nobody home! He was about to leave, when he heard that noise again. He pushed open the door of an adjoining room; there they were all huddled together in one bed, three children besides Mr. and Mrs. Larmen. "Cy's wife was weeping for dear life," as Benson afterwards told his mother, "and Cy so white and thin! I asked them if they were all feeling ill. Such a howl as they did set up, some talking, some coughing and some cried; so, mother, I just had to come away without the oil." Mrs. Bruce could not refrain from laughing at her son's way of describing the scene, but tears soon stood in her eyes. Her hood and cloak were soon warming. Such a basket of good things was never packed before. Benson disliked to take the load of cobs he had picked up for their own future use. But, as he said, "When mother wills, why she just wills, so good-bye, cobbies." Mrs. Bruce came out of the house, wrapped in every conceivable covering for warmth, and climbed into the seat beside her son. Benson said little, but he thought of what Cy's youngest brother had once said: "I bet if Cy had been lucky in his wooing and had got your ma, he'd been better off today." "Where are you going, son? We turn here, you know." Benson looked at his mother, smiled a little lamely, turned slightly to the left and made the gateway safely. Mrs. Bruce's heart ached as she helped build the fire. She then made beef tea, toasted bread, etc., and after the children had gone to sleep, the older folks had a long, interesting talk about farming and handling stock. Poultry seemed to be the greatest theme, so they dwelt on it more particularly, and Mrs. Bruce told how, one year, when the orchard failed to bring in its harvest, and the field and garden also were not fruitful, but the good old hens kept them from actual want. Cy became interested, but that was not all that was needful. In a few years, though, he was, with his wife's help, a poultry fancier. No one would have thought he was so poor a short time before. Everything, from the front gate to the house, barn, granary and poultry houses, looked cheerful enough now; and who will deny that a good old hen and her children helped to do ti all! The good range that Liza's father gave her for a wedding present has never seen frost since the day that Benson Bruce went to borrow a pint of oil. Sometimes one might hear Cy singing a queer old song, but it had a pleasant tune, and the refrain was like this,

"And it's hard times, and it's hard times
Come again no more."

—"Aunt Jenny."

I remember starting out for school, a mile and a half away, through snowdrifts higher than my head, and the "beautiful" up to my waist on the level. This was at an age ranging from eight to twelve years. I was the only pupil on our road who ventured out after a storm, consequently I had the breaking of the way to myself. We wore knitted stockings, coarse shoes and cotton pants to the knees; none of us had ever seen long underwear, overshoes, leggings or furs. I often reached the school house blown but happy; my underclothes wet through, and frozen stiff sometimes. The teacher expected me, and ranged the few pupils who lived a short distance from the school house one side of the great stove, putting me on the other, so that I might get thoroughly dry. In after years I went three and a half miles to school, but by this time teams were more numerous, and rides more frequent. At the age of sixteen I began to teach, and, for five years, was in comfortable circumstances; then I married a poor man, and years of failure followed in many lines. We took up a homestead in the northern forest, and I shall never forget the misery of that journey, though I have had many since. I have the misfortune to be seasick on the water and carsick on the train, or in any kind of a closed vehicle. The distance was five hundred miles, and my husband went ahead as a pathfinder and to build a cabin. I followed, mostly by train, with our three children, whose ages were five years, three years and one year. When we left our car, almost near enough to hear the boom of Superior's waves, there was no depot, nor even a siding. We were conducted by a homesteader to the cabin where he and his family lived; it was near the fragrant Norway pines. Those good people were strangers to me, but they kept us two days, until we were rested, then in a heavy storm we were driven four miles over a rough trail, bumped over fallen trees, down an almost perpendicular hill, into a stream, through a dense forest and, presto! we had arrived. A hut 8x12 stood ready with door invitingly open, and husband smiling in the doorway. Our friends at the railroad had said they expected me to cry when I saw our house; but, instead, I laughed. We lived in the woods for seven years, and during that time three more children came. There came a time, one summer, when our funds were exhausted—the last dime gone for tobacco. We hustled out to where a railroad spur was building, and secured uncongenial work. Afterwards my husband was successful in doing some railroad work. He bought a team of horses and we slowly struggled out of poverty's mire; we bought cows, and cleared some land. We bought few clothes, and I made over garments for boys and girls, until I became quite a tailor, as well as a dressmaker. We worked hard, rising at 4 o'clock, getting breakfast and then working in the garden all our spare time. With all the work and anxiety, I did not neglect the children's education, for when we reached civilization again they were able to enter school in grades higher than filled by other children of their years. Our eldest son is a successful attorney; the next, a stenographer, the youngest boy is in college. Our eldest daughter has a normal school training and is married to a successful man; the two youngest girls are at home attending school.—M. F. T.

(To be continued.)

Meeting of Nurserymen's Association.

The annual meeting of the American Association of Nurserymen will be held at Boston, June 12 to 14. Headquarters will be at Hotel Somerset, program has been arranged, and the entertainment features of this year's convention are to be of special interest. Program and full particulars can be secured from John Hall, Secretary, Rochester, N. Y.

Cave Vs. Cold Storage.

I am selling apples at $1.25 per bu. this first day of May. Cave holding 3,000 Bu. for $500. Cave will last forever. Guaranteed to keep fruit. Ventilation perfect. For plans write to J. T. Swan, Auburn, Nebraska.—Adv.

"Scrub" Cream Separators as Unprofitable as "Scrub" Cows

This is the good advice one of the big and long experienced Western cream buying concerns gives to its farm separator patrons, being taken from a letter to one of them:

"We believe the DE LAVAL is the best separator made. We feel that anyone wishing to purchase a separator makes a great mistake unless he purchases the best machine on the market. No one can make a success of dairying by continuing to use scrub cows. Neither can he make a success of dairying by using scrub separators."

There couldn't well be a more simple, comprehensive and forceful statement of the whole cream separator proposition than this. It's just plain common sense.

THE DE LAVAL SEPARATOR COMPANY

165-167 Broadway NEW YORK | 29 E. Madison Street CHICAGO | Drumm & Sacramento Sts. SAN FRANCISCO | 1016 Western Ave. SEATTLE | 173-177 William Street MONTREAL | 14 & 16 Princess Street WINNIPEG

"The Moncrief System of Pedigreed Trees"

Pedigreed horses? Yes. Pedigreed hogs? Yes. Pedigreed cows? Yes. Pedigreed seeds? Yes. Why not pedigreed trees? The Moncrief System answers this question. Write for the valuable book "Pedigreed Horticulture," mailed free.

THE WINFIELD NURSERY CO.
Box 1. Winfield, Kansas

Make Twenty Dollars With Berries Easier Than One Dollar With Corn

One acre in berries will net more than twenty acres in corn. Berry growing is easy—farming is hard. My "Berry Book" tells how to make money with Hardy Himalaya Berry, Currants, Raspberries, Gooseberries. Send today for a free copy, and learn about the money in berry growing.

BERRYDALE EXPERIMENT GARDENS
Fruit Avenue. Holland, Michigan

HOTEL CUMBERLAND

NEW YORK

Broadway at 54th Street

Near 50th Street Subway Station and 53rd Street Elevated.

Broadway cars from Grand Central Terminal and cars from new Pennsylvania station pass the door.

New and Fireproof

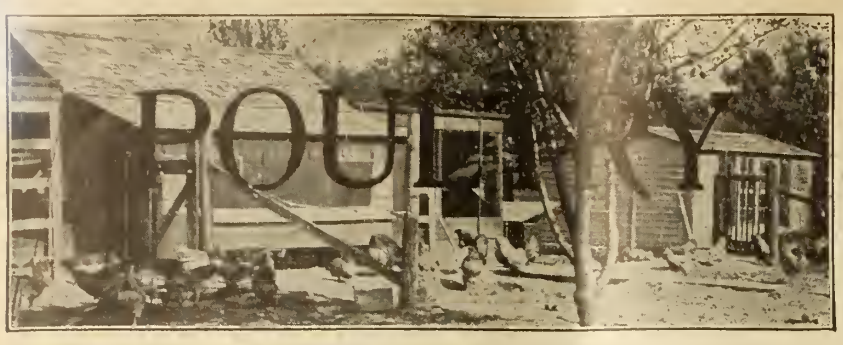
Best Hotel accommodations in New York at reasonable rates

$2.50 with Bath, and up

Ten minutes' walk to thirty Theaters. Excellent Restaurant. Prices moderate.

Send for Booklet

HARRY P. STIMSON
Formerly with Hotel Imperial



Preserving Eggs at Hillside Farm.

Preserved eggs may be substituted for fresh ones in many cases with profit. They may be scrambled and used in omelets; also for baking various cakes which do not require beaten whites. As a rule they are the equivalent of fresh eggs in any food where the yolk is broken; but only when specially preserved and when not kept too long are they suitable to serve fried.

The preserving material seals up the pores in the shell and thus prevents the entrance of bacteria and air as well as evaporation and consequent shrinkage of egg contents. The old method of greasing the shell to make eggs keep better depended on this fact. Such eggs cannot be boiled because the impervious shells do not permit the escape of the enclosed air, which expands when heated and bursts open the egg. By serving the commoner purpose the preserved egg economizes the fresh egg, for which there is an ever increasing demand for use as raw food in the treatment of certain diseases.

When eggs are to be kept for a short period only, one of the usual methods of packing is sufficient, such as imbedding in some fine material, as dry bran, oats, sawdust or salt. Care must be taken that the packing material is perfectly dry and free from must. There is always danger of losing the eggs by the growth of mold on the inside of the shell, as the writer has frequently observed.

A better way is said to be the use of egg shelves. These are arranged in a cool dry place and are provided with holes so that the eggs may be stood on end. Handled in this way, eggs are said to keep better than when packed. Preserving in some chemical solution is, however, a much safer method for general use. Before recommending any formulas to the public the writer has given several of them a critical study to determine exactly what can be expected under our conditions. The various lots of eggs were preserved in June last when they could be purchased at about 20 cents a dozen, and were used in November, when fresh eggs were selling at 50 cents. Thus they were carried through the excessive heat of June, July and August and found to be usable in the fall. There are two solutions commonly used for preserving eggs, each of which has its advantages and disadvantages.

Lime-Water Method.

The commonest and oldest preservative is lime-water. A few lumps of quicklime are slacked in a large vessel of water, and after the excess of lime has settled out the clear liquid is poured over perfectly fresh eggs in a clean jar. A very small amount of the slacked lime may then be added to repace the lime which will be separated out by the action of the air. After a few days a thick crust will form on the surface, which should not be disturbed, for it prevents evaporation and excludes the air. Some add salt to the lime-water and claim it improves the quality of the eggs.

Lime-water preserved eggs will keep well and are serviceable for all purposes excepting to fry, the yolks not holding up well and the eggs being apt to become mussy. There is a great tendency for the white to become watery, but this does not render the egg unwholesome. They are just as serviceable for baking and for other purposes as fresh eggs, excepting that the whites cannot be beaten. The great advantage of this method is the ease with which lime may be obtained, as it is readily accessible in the most remote places.

Water-Glass Method.

The other common preservative is water-glass. This is diluted with from 10 to 20 parts of water, but even greater dilutions will serve when the eggs are to be kept for a short time only. I have observed that the stronger the water-glass solution the less apt the yolks are to break when fried. Water-glass gives better results than lime-water; but is difficult to obtain and quite expensive away from commercial centers. It should be given the preference wherever available, although very fair results can be obtained with lime-water.

One lot preserved in 5 per cent water-glass solution was still in very good condition the following March. It is absoutely essential that eggs for preserving be perfectly fresh. They should be preserved within 36 hours after being laid. It is not safe to preserve eggs whose history is not known, such as those obtained at the stores. By following one of these two formulas a fall and winter supply of cheap eggs may be had which is fully as serviceable for most purposes as high priced fresh eggs, and which will not have that peculiar stale taste so characteristic of shipped cold-storage eggs.

New Jersey. C. A. UMOSELLE.

First Half of National Egg-Laying Contest Ended.

The record for the first half of the great national egg-laying contest at the Missouri State Poultry Experiment Station has been made. A total of 12,458 eggs were laid in this contest at Mountain Grove, Mo., during the thirty days in April, which makes a grand total of 41,131 eggs for the first six months. Fifty-two pens of five birds laid more than 100 eggs each during April. The Barred Plymouth Rocks of O. E. Henning of Mead, Neb., won the golden egg silver cup with a record of 137 eggs in twenty days. This is a record that is hard to beat, five pullets laying 137 eggs for thirty days in April, one laying an egg every day. This pen laid thirty-five eggs in one week. Barred Rock pullet No. 412 laid an egg every day for forty-seven consecutive days, then went broody, but has begun laying again. The Black Orpingtons have again gone to the front and again lead all the pens. The Leghorns and smaller breeds are coming up at a rapid gait, and will give a good account of themselves before the year is ended. They being a close feathered bird and smaller in size, the severe winter weather gave them a back-set from which they are now recovering and gaining ground.

Considering the weather and the great obstacles which we have had to overcome, we are well satisfied with the record for the first half of the year's test. It may interest some to know that some of the pens in the contest contained pullets just frying size when they were received here last October. The pullets in some pens just averaged about two pounds each. These had to be grown and matured before they could begin to lay, and this cut our record and averages. A large number of the birds in this contest are hens. We have a number of hens that are three years old. We notice that the North American states that there is only one pen of hens in the Connecticut contest. The majority of our hens are not doing as well as the pullets.

In spite of the above facts, sixty-five individual hens and pullets have made a record of more than 100 eggs each. A few of the highest individual records are as follows:

	Eggs
317 S. C. Red	137
402—Silver Wyandotte	134
79 R. C. White Leghorn	132
541 White Orpington	132
545 White Orpington	132
523 Silver Wyandotte	129
572 R. C. Red	127
401 Silver Wyandotte	127
373 Buff Orpington	126
613 Barred Plymouth Rock	122
487 White Wyandotte	121
601 R. C. Red	121
488 White Wyandotte	120
523 Silver Wyandotte	120
372 S. C. Red	120
717 White Plymouth Rocks	119
19 Anconas	115
821 Cornish	115
888 Columbian Plymouth Rocks	115
179 S. C. White Leghorns	114
863 Black Orpingtons	114
663 Black Langshans	113
64 S. C. Brown Leghorns	112
876 Buff Cochins	111
520 Buckeyes	103
418 Golden Wyandottes	100

The highest individual records made by the varieties mentioned below are as follows:

	Eggs
All Orpingtons	403
" Reds	394
" Leghorns	321
" Wyandottes	308
" Cornish	307
" Anconas	304
" Langshans	299
" Plymouth Rocks	277
" Minorcas	262
" Ducks	260
" Brahmas	213
" Hamburgs	185

The comparative averages of all breeds per pen for the past six months in such varieties as have more than one pen entered, are as follows:

	Eggs
Black Orpingtons	83
S. C. Reds	80
Buff Orpingtons	80
White Orpingtons	80
Buckeyes	78
Black Langshans	76
R. C. Reds	75
R. C. Brown Leghorns	75
Silver Wyandottes	72

T. E. QUISENBERRY.

Strawberries Under Irrigation.

A subscriber asks if strawberries which are to be irrigated by furrow irrigation should be planted on raised ridges, and water applied between the rows.

We have seen strawberry rows planted in this way, but we believe it is much better to try to keep soil level, for the plants will work themselves up on to rows anyway as they become older. On land which is nearly level, so that water has scarcely any fall, it might be well to ridge the rows, if there is danger of the water getting up on the berries, but if there is sufficient slope to permit the water flowing freely, we would much prefer keeping the rows down. If there is too much slope to the ground, then of course the rows should be planted with the contour of the hill. On some of the hillsides in the irrigated districts of the West, strawberry rows are as crooked as can be, but they follow the contour and irrigation is much more effective.

A tool house is a necessity on every farm. Every tool must have a place in the house to which it is returned every night, or immediately after its work is done. It will be in better shape for service if its working surface is given a rub with an oily rag.

Regardless of how much money you are planning to spend in building or remodeling a home, a garage, a barn, or any other building, it will be far superior if roofed with

KA-LOR-OID
(Colored Ruberoid)

It is the only **permanently colored prepared** roofing. As long as a particle of it lasts the color remains. KA-LOR-OID outlasts metal or shingles; it is cheaper; it is easier to apply. Tile and slate crack, shingles warp and decay, metal corrodes. KA-LOR-OID does none of these.

It is **RAIN-PROOF SNOW-PROOF HEAT-PROOF COLD-PROOF TIME-PROOF FIRE-RESISTING**

KA-LOR-OID (Colored Ruberoid) is the same durable material as RU-BER-OID with the added attraction of the beautiful colors:

TERRA COTTA RED COPPER GREEN BRONZE

RU-BER-OID roofs laid over 20 years ago are still flexible, still water-proof and weather-tight. Watch for the RU-BER-OID Man on the outside wrapper. He guarantees the roofing to be genuine KA-LOR-OID or RU-BER-OID.

We want every reader of this excellent publication to have our new book, **"Around the World."** Write today for it and free samples of KA-LOR-OID.

THE STANDARD PAINT CO., 100 William St., New York

Branches: Boston, Philadelphia, Chicago, Kansas City, St. Paul, Denver.

Trade Mark Reg. U.S. Pat. Office

PREVENTION

White Diarrhoea Can Be Prevented and Cured

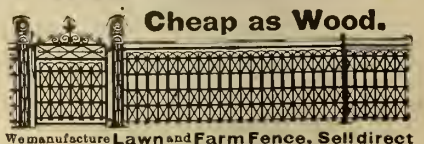
After years of experiments we have discovered a sure cure—or money back

25c Package 6 Packages, $1.00

Prevention is not a cure-all. It only prevents and cures White Diarrhoea in baby chicks and Cholera in older fowls. One ounce of prevention is worth tons of cure. In tablet form.

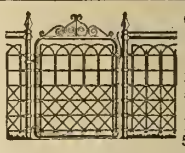
PREVENTION CO.
Box 1127 Atlantic City, N. J.
Agents Wanted

BROWN FENCE
13 CENTS PER ROD UP
RUSTPROOF: BULLSTRONG: PIG TIGHT
Fences for horses, cattle, sheep, hogs, chickens, etc.
Special low bargain prices. We pay the freight.
Ornamental Lawn Fences and Gates
Send for catalog and sample
Brown Fence & Wire Co. Dept. 14 Cleveland, Ohio

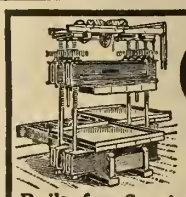


Cheap as Wood.

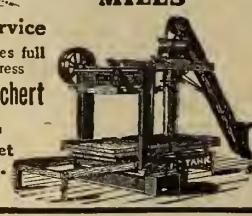
We manufacture Lawn and Farm Fence. Sell direct shipping to users only, at manufacturers' prices. No agents. Our catalog is Free. Write for it today.
UP-TO-DATE MFG. CO. 976 10th St., Terre Haute, Ind.



ORNAMENTAL FENCE
25 Designs—All Steel
Handsome, cost less than wood, more durable. Don't buy a fence until you get our Free Catalogue and Special Prices.
We can save you money.
Kokomo Fence Machine Co.
501 North St., Kokomo, Ind.



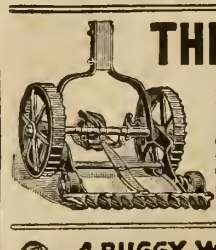
CIDER PRESSES
and other machinery for
CUSTOM CIDER MILLS
Built for Service
Our catalogue gives full information. Address
Boomer & Boschert Press Co.
473 Water Street
Syracuse, N. Y.
Established 1872



MAKE BIG PAY DRILLING WATER WELLS

Our Free Drillers' Book with catalog of Keystone Drills, tells how. Many sizes; traction and portable. Easy terms. These machines make good anywhere.
Keystone Well Works
Beaver Falls, Pa.

THE CLIPPER



There are three things that destroy your lawns: Dandelions, Buck Plantain and Crab Grass. In one season the "Clipper" will drive them all out.
Clipper Lawn Mower Co.
Dixon, Ill.

4 BUGGY WHEELS STEEL TIRES PAID **$8.75**
With Rubber Tires, $18.45. Your Wheels Rerubbered, $10.30. I make wheels ¼ to 4 in. tread. Tops, $6.50. Shafts, $2.10; Repair Wheels, $5.95; Axles $2.25; Wagon Umbrella free. Buy direct. Ask for Catalog Q
SPLIT HICKORY WHEEL CO., 530 F St., Cincinnati, Ohio.

Commercial ORCHARD

All in Bearing, and in some of the Best Proven Fruit Sections of Virginia

(1) 250 acres mountain land. Over 2,500 apple trees, one-half beginning to bear. Some of the land is rough; but the trees are well grown and very thrifty. Four and one-half miles down grade to station. Price, $10,750. **A GREAT BARGAIN.**

(2) 160 acres at foot of Blue Ridge. About 5,000 trees, 1,200 apple, 18 years old, balance just being planted; 1910 crop, 1,000 barrels, 3½ miles over fine road from station. Price $20,000.

(3) In select fruit region, close to progressive town, 160 acres practically all planted in fruit. About 6,300 apple trees, 5 years old; 200 six years old and 1,000 one year old; 15,000 peach trees 5 years old; fine property, worthy of immediate investigation; purchasable at investment figure. Price $60,000.

(4) About 7,000 apple trees, all in bearing and from 7 to 17 years old. Rich land, one-third in orchard, balance mostly bluegrass sod. Owner reports 1910 apple crop brought $9,000 net. Distance to station one and one-half miles. Price $65,000.

(5) Contains nearly 15,000 apple trees 11 to 15 years old, within one mile of two competing railroads; elevated land, good air drainage, within 5 miles of large city. Cheap property. A few good crops should pay for it. Can be bought for about $120,000.

Other Fine Orchards. Write for List.

H. W. HILLEARY & COMPANY
729-30 Southern Building. Washington, D. C.

Do You Want a Home in the
Beautiful Ozarks
of Missouri, in the Famous Strawberry Land

Apples, Peaches, Pears, Grapes, Raspberries, etc., all grow excellently. Ideal location for the dairy and poultry business. We offer for sale 60,000 acres of land in 40-acre tracts or more, cheap and on easy terms. Located in Stone and McDonald counties. For further information address

McDonald Land & Mining Company
Rooms 301-2 Miner's Bank Building
Joseph C. Watkins, Mgr., JOPLIN, MO.

I WILL MAKE YOU PROSPEROUS

If you are honest and ambitions write me today. No matter where you live or what your occupation, I will teach you the Real Estate business by mail; appoint you Special Representative of my Company in your town; start you in a profitable business of your own, and help you make big money at once.

Unusual opportunity for men without capital to become independent for life. Valuable Book and full particulars FREE. Write today.

NATIONAL CO-OPERATIVE REALTY CO.
M144 Marden Building
Washington, D. C.

E. R. MARDEN, President

BEAUTIFULLY ILLUSTRATED BOOKLET ABOUT DELAWARE
the State of red apples, luscious peaches, strawberries and of ideal homes. Address State Board of Agriculture, Dover, Dela.

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. Hanson & Son, Hart, Mich.

For Sale—Bearing Fruit Farm
1500 Peach, 900 Jonathan, 500 Delicious, 250 Bing.
Address F. WENTZ, - - PROVO, UTAH

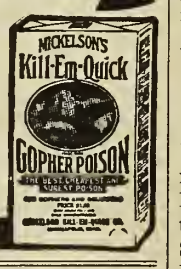
Kill Gophers and Squirrels Before THEY Kill Your TREES

Protect your trees and shrubs by *killing* the gophers, squirrels and other pests! Only 75c or $1.25 is all you need spend for this *sure* and *absolute* protection, even if you have 160 acres. Get a box of Mickelson's Kill-Em-Quick! It is *easy* to *use, cheap* and *effective*. *I guarantee* it to kill all pests for less than 1 cent per acre. Money back if it fails.

Kill-Em-Quick Gopher Poison

is so *attractive* to the taste and smell of these pests that they simply can't resist it. They eat it before they know what it is and it kills them before they can wink an eye. One poisoned grain is enough to kill.

You can increase your crops and profits immensely if you will use Kill-Em-Quick Gopher Poison right *now*. It is sold under an absolute guarantee of satisfaction or money back. If druggist cannot, or refuses to supply you, I will ship direct, express prepaid. Kill-Em-Quick sells for 50c, 75c and $1.25 per box.



Anton Mickelson, President
Mickelson Kill-Em-Quick Co.
1431 Washington Ave. North, Minneapolis, Minn.

Ladders, Baskets
Crates, Presses
Picking Bags

EXCELSIOR CUSHIONS
If You Want the Best Send a Card for Catalogue

Bacon & Company
Appleton New York

Coyne Brothers Handle All Kinds of Fruit and Produce
160 Water Street, Chicago, Ill.

Advertisers like to know what paper is giving the best service for money expended. You can aid them materially if when writing, you mention **The Fruit-Grower**

Y. M. C. A.'S GOOD WORK

Probably nowhere else can there be found a more intelligent class of farmers than where there are those who are engaged in that highest type of farming, that of growing fruit. The Grand Valley of Colorado is no exception to this rule. Her orchardists are not men who have made a failure in some other line of business, and who have taken up with fruit growing because they thought that success could be attained with less intelligent effort than elsewhere. A large percentage of them are men who have been successful in business or professional life, and who have invested their savings in orchards.

There is an irresistible attraction that the country offers with its pure air and natural freedom, to the man who has been shut up in some city office for years. It is such men who have invested heavily in Grand Valley orchards; men who have been through colleges or universities and who realize the value of an education even for the farmer. It is not strange that such a class of people should enthusiastically support a plan whereby they may receive competent instruction in the various phases of their profession.

The Young Men's Christian Association at Grand Junction, conceived the idea of organizing fruit-growers' classes, and during the winter months of 1911 the first class, consisting of about twenty-five members, practically all prominent orchardists, met once a week for instruction.

Y. M. C. A. CLASS IN FRUIT GROWING AT CLIFTON, COLO., HOLDING AN INSTITUTE.

Last winter Mr. M. N. Dillon, the County Secretary of the Y. M. C. A. for Mesa County, decided to enlarge upon the work and proceeded to organize classes in different parts of the county with the result that at the present time, there are five classes being held weekly in four different towns, with a total enrollment of 140.

Each course consists of ten lectures arranged so as to provide scientific and practical instruction in fruit-growing. The lectures covered such topics as the following: Preparation of the Land; Pruning; Diseases and Pests; Varieties to Plant and Care of Nursery Stock; Sprays and Spraying; Tree Physiology and Top-Working; Shade Crops and Fruit Buds; Apple Packs; Thinning Fruit and Vegetable Culture; Beautifying the Orchard Home.

The classes were conducted by Prof. R. S. Herrick, of the Agricultural College and the popularity of these classes emphasizes the need for this kind of instruction, not only in Colorado, but other states as well. Success in the fruit business is largely dependent upon proper and uniform methods of pruning, spraying, thinning, cultivation, etc., and how can the orchardist learn these things better than through discussion in a class under competent management?

GEORGE P. WELDON.
Colo. Agr. College.

Help For Women Folks.

The leading article in the April Fruit-Grower presented most forcefully the claims of the farm women for labor-saving appliances for the farm home, and now comes another meeting in which this subject is discussed more earnestly. Late in March a conference was held in Philadelphia under the auspices of the Pennsylvania Rural Progress Association, the oldest agricultural society in the United States, having been organized in 1785. At this gathering the condition of farmer's wives was discussed, and some plain talk indulged in. Miss Martha Van Rensselear of Cornell University struck the keynote to the meeting when she declared that rural progress depends on the happiness and comfort of the woman on the farm more than upon well-tilled field and well-built and well-stocked barns.

"If the woman is not satisfied," she said, "and if no effort is made for her comfort, the farmer might as well give up his aspirations to become successful; for the family cannot remain on the farm if the wife and mother rebels. On thousands of farms in this country there is every reason for rebellion, for absolutely nothing is done to give the woman the aid she needs in housekeeping, in the bringing up of her children and the performance of her share of the farm duties. How many men who have reapers and binders think of the washing machine and the ironing machine for their wives?

"In how many cases would the woman think this was a needless expense, simply because she has been trained to believe that her health and her happiness and conservation are inferior matters and do not measure up to the needs of the livestock and the farm? The farmers' wife should be taught how to conserve her time and energy, how to get the latest labor-saving devices, how to do her work scientifically and intelligently and how to combine pleasure with duty. She should have some idea of art, so that her home may be beautiful, and she should not be given to believe that there is nothing in life beyond the dreary routine of daily toil."

Another woman spoke along the same line, Mrs. Jean Kane Foulke of Pennsylvania declaring that the trouble is caused by the division of interest on the farm; that the man thinks that the stock and the products are his lookout, and that his wife should do all the work of the house unaided."

Labor-saving devices for the farm home will do much to lighten the burdens of the housewife, and attention was called to many of them, such as water systems, gasoline engines to run washing machine, cream separator, pump water, etc.; heating plants, to make the home comfortable and to save labor; lighting systems, bath rooms, and other modern conveniences.

"I consider The Fruit-Grower just as indispensable as spraying or pruning." —L. M. Cox, Washington.

Horse Owners! Use GOMBAULT'S Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.*

Every bottle sold is warranted to give satisfaction Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid,** with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland O.

THICK, SWOLLEN GLANDS

that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be removed with

ABSORBINE

also any Bunch or Swelling. No blister, no hair gone, and horse kept at work. $2 per bottle, delivered. Book 3 E free.

ABSORBINE, JR., liniment for mankind. Reduces Goitre, Tumors, Wens, Painful, Knotted Varicose Veins, Ulcers. $1.00 and $2.00 a bottle at dealers or delivered. Book with testimonials free.

W.F. YOUNG, P.D.F., 34 Temple St., Springfield, Mass.

Shoo-Fly THE ANIMALS FRIEND

Keeps flies and other insect pests off of animals—in barn or pasture—longer than any imitation. Used and endorsed since 1885 by leading dairymen and farmers.

$1 worth saves $20.00 in milk and flesh on each cow in a single season. Heals sores, stops itching and prevents infection. Nothing better for galls. Kills lice and mites in poultry houses.

SEND $1, if your dealer can't supply you, **for enough Shoo-Fly to protect 200 cows, and our 3-tube gravity sprayer without extra charge.** *Money back if not satisfactory.* Write for booklet, FREE. Special terms to agents.

Shoo-Fly Mfg. Co., Dept. 31 1310 N. 10th St., Phila.

Editor knows from experience that Shoo-Fly is O.K.

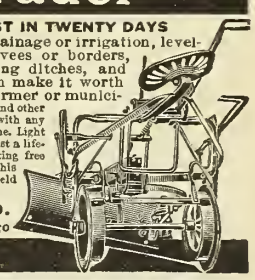
DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by Dealers, or 6 sent prepaid for $1.

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

20th Century Grader

SAVES ITS COST IN TWENTY DAYS

Cutting ditches for drainage or irrigation, leveling land, making levees or borders, grading roads, cleaning ditches, and many other uses which make it worth ten times its cost to farmer or municipality. Has sage brush cutter and other useful attachments not found with any other grader. A one-man machine. Light—strong—guaranteed. Will last a lifetime. Write now for interesting free book telling how the use of this machine will increase the yield of your crops.



THE BAKER MFG. CO.
530 Hunter Bldg., Chicago

Genasco
THE TRINIDAD-LAKE-ASPHALT
Ready Roofing

The Good Roof Guide Book tells what you ought to know about all kinds of roofing. Write for it, and ask for samples. Both free.

The Kant-leak Kleet is an improved fastening for smooth-surface roofings.

The Barber Asphalt Paving Company
Largest producers of asphalt, and largest manufacturers of ready roofing in the world.
Philadelphia
New York San Francisco Chicago

PATENT YOUR IDEAS

$9,000 offered for certain inventions. Book "How to Obtain a Patent" and "What to Invent" sent free. Send rough sketch for free report as to patentability. Patents advertised for sale at our expense in Manufacturers' Journals.

Patent Obtained or Fee Returned
CHANDLEE & CHANDLEE, Patent Att'ys
Established 16 Years
1046 F. Street, Washington, D. C.

PEACH SEEDS FOR SALE

1911 AND 1912 STOCK. Write for Prices and Samples.
THOS. R. HAMAN, 1614 Oliver Sreet. Baltimore, Md.

Our Classified Advertising Department

For advertisements in this department, of not less than twenty words each, in which no display type is used, we make a special rate of FIVE CENTS PER WORD, EACH INSERTION. If several different advertisements are inserted in the same issue, the charge will be $1.00 for each ad, no matter how small. The first four words of each ad will be set in black type. Every initial and number to count as one word. This department is for the benefit of our subscribers who have anything to sell, including farm lands, fruit farms, dogs, ponies, poultry and eggs, live stock, plants, shrubs, vines, etc. All advertisements for this department must be PAID FOR IN ADVANCE. Count the number of words you send, and remit at rate of 5 cents per word, stamps, currency or money order. This is considerably less than our display rate, and offers a splendid opportunity to reach our readers at a low figure. Send a trial advertisement with remittance at rate of 5c a word. THE FRUIT-GROWER, St. Joseph, Mo.

POULTRY DEPARTMENT

Anconas

Anconas—Both Combs. Large dark birds, evenly mottled, black tails and wings, winners Buffalo, Rochester, Cleveland, Williamsport, Madison Square, World's best. Eggs a specialty. W. A. Ellison, Elkland, Pa.

Brahmas

Buff Brahmas and Light Brahmas. Eggs for hatching $2 a setting. If you want fine winter layers try mine. C. C. Arnold, Millers Falls, Mass.

Cornish

Cornish Indians—Thoroughbred exhibition stock. Fine laying strain. 15 eggs, $1.50; 30, $2.50. Baby chicks, $12.00 per 100. S. A. White, Box G, Timberville, Va.

Cow Cow de Malines

Drop a postal and Art will tell you about his White and Gray Cow Cow de Malines, Gold and Silver Campines, Rose Comb Reds. Art W. Verbeckmoes, Atkinson, Ills.

Hamburgs

Silver Spangled Hamburgs, Black Orpingtons scoring to 95½, winners of silver cups and blue ribbons at Blue Island, Chicago, Missouri State, Kansas City. Eggs, $1.50 to $3.00 per 15. D. Van Rennen, 6440 So. May St., Chicago, Ill. Square Deal.

Silver Spangled Hamburgs, bred from egg record and prize winning stock from $1.50 up. Eggs, 15 for $1.00, 50 for $2.50; 100 for $4.50. Henry Bartig, Augusta, Wisconsin.

Houdans

Famous Houdans. Eggs and day-old chicks from our fine large farm raised Houdans. Eggs, $2.00. Catalog with photograph for stamp. Prospect Poultry Farm, Orleans, Ind.

Eggs for sale from pure bred Houdans, $1.50 setting of 15; my birds won first and second at the county lair. Mrs. Clarence J. Bettis, Route 7, Forestville, N.Y.

Leghorns—Brown

Single Comb Brown Leghorns. Phenomenal layers and prize winners, in any size show, regardless of competition. This season they have won high honors at Hagerstown, Maryland, Roanoke, Front Royal and Lynchburg, Va., Charlotte, North Carolina, and Atlanta, Georgia. Eggs only $2 per 15. Mating list mailed upon application. H. C. Adams, Lynchburg, Va.

Eggs that will hatch from pure bred farm raised Single Comb Brown Leghorns. Great layers. $1.00 per 15; $4.00 per 100. Day old chicks, 25 for $4.00. Satisfaction guaranteed. Wm. Ellerman, Rt. 1, Versailles, Indiana.

Rose Comb Brown Leghorns, hardy Northern birds, good layers; eggs, 20, $1.00; 100, $3.50. Shipped the same day laid. Mrs. Chas. Brown, Cavalier, N. D.

S. C. Brown Leghorns. 4 pens mated. Booking orders now for eggs. Bright's strain, finest in the world. Granite State Poultry Yards, Nashua, N. H.

Leghorns—Buff

The Sunshine Flock S. C. Buff Leghorns. Gold on your farm; gold in your pocket. Pen 1, $3.00 per setting of 15; Pen 2, $2.00; Pen 3, $1.00. Range, $5.00 per 100. Mrs. Anna H. Baldwin, Keswick, Iowa.

Pure Bred Single Comb Buff Leghorns, winners at two state shows. Bred to lay. Beautiful Golden Buff. Eggs, $1.00 for 15; $5.00, 100. E. L. Aldrich, Keokuk, Iowa.

S. C. Buff Leghorn eggs, $1.50 per 15; bred for unusual egg production, exclusively, and they deliver the goods. Edwin M. Larason, Newark, Ohio.

Single Comb Buff Leghorn Eggs that hatch winners, $1.00, 15; $4.00, 100. Partly grown baby chicks a specialty. Mrs. L. Boldig, Tigerton, Wis.

Leghorns—White

Rose Comb White Leghorns, bred from winners at Chicago, St. Louis, Minneapolis, Oshkosh and Fond du Lac. Eggs, $1.50; $1.00 per 15; $5.00 per 100. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

Single Comb White Leghorns, Young and Wyckoff strains. Stock for sale. Eggs $1.50 per 15, $2.50 per 30, $7 per 100. Baby chicks $15 per 100. K. I. Miller, Box 53, Lancaster, Mo.

Bliem's Single Comb White Leghorns. World's famous exhibition and laying strain; stock; eggs; 16 years experience. Circular free. Samuel S. Bliem, R. R. 5, Pottstown, Pa.

Snow White Leghorns, Single Comb, Young's strain. None better. Eggs and cockerels scored by Heimlich for sale. Circular free. John J. Schmidt, DeSoto, Mo.

S. C. W. Leghorn eggs from prize winners, St. Louis, East St. Louis, Quincy and Belleville. Several splendid cockerels left. Julius W. Weber, Belleville, Illinois.

Single Comb White Leghorns. (Young strain). Prize winners, 92 to 96 pointers. Eggs and baby chicks a specialty. Booklet free. W. H. McCormick, Ransom, Illinois.

Eggs, S. C. W. Leghorns. Pen scores 90 to 95½. 75 cents per 15; $4.00 per 100. S. C. Mottled Anconas, 75 cents per 15. L. J. Hooper, Palmyra, Wis.

Stoughton's Single Comb White Leghorns are a strain of winners, bred to lay; 25 acre range; 15 eggs, $1.50 Circular. Geo. A. Stoughton, Rockbridge, Ohio.

Eggs from fancy Single Comb White Leghorns, prize winning birds, Easling strain; $2.00 per 15; farm eggs, $1.00 per 15. Nat L. Brasfield, Unionville, Mo.

Get the best laying strain, S. C. White Leghorns. Eggs, $6.00 and $10.00 per 100. R. M. Clark, Sunnyslope Poultry Farm, Quincy, Ohio.

Minorcas—Black

I have bred S. C. Black Minorcas ten years, that won first prizes wherever shown. 15 eggs, $1.00; 50 eggs, $2.50. Stock all sold. Alton Finney, Platteville, Wis.

Rose Comb Black Minorca eggs, $2.00 per 13. From 92 to 96 point birds. Trios and pens for sale. Will Heintz, 819 Vine St., Quincy, Ill.

Orpingtons

Gee-Whiz Fruit and Poultry Farm Orpington Eggs for hatching. Arkansas bred. Buff, White and Black. Bred right, kept right and sold right. Write for 1912 mating list. Gee-Whiz Fruit and Poultry Farm, Fred P. Phillips, Manager, Rt. 1, Gentry, Benton Co., Ark.

Orpington Place, where you get the best S. C. Buff and White Orpingtons in the West. Stock and eggs for sale. Send for mating list. Geo. B. Moehrl, Marshalltown, Iowa.

Single Comb Buff, White, Rosecomb White. Prize Winners. Bargains in Breeders. Eggs, $1.50 up. Hens with Baby Chicks, $4 up. Mating List. Doctor Evans, LaGrand, Iowa.

S. C. Black and White Orpingtons. Eggs for hatching from prize stock having best blood lines in existence. Prices, $2.50 to $5.00. Vernon Mathews, Vineyard, N. Y.

Orpingtons—Black

Black Orpingtons. Stock and eggs for sale. High class, score 93 to 95½. Write for prices. Circular free. Satisfaction guaranteed. T. Haynes, Red Bud, Ill.

Buff Orpingtons

Buff Orpingtons. Our birds are noted for vitality, type, size and utility qualities. Also winning at leading Illinois shows. Mating list free. Eggs, $1.00, $2.00, $3.00 per 15. Tietsort & Stutzman, Box B, Girard, Ill.

Winter Laying Strain. S. C. Buff Orpingtons. Stock and eggs for sale. All Buff Beauties and bred to lay in winter. Send for catalog and prices. Booking orders now. V. T. Williams, Stanberry, Mo.

Eggs for hatching, from best blood lines of S. C. Buff Orpington chickens and standard bred pure white egg strain of Indian Runner Ducks. Prices right. C. C. Dawson, Chrisney, Ind.

S. C. Buff Orpingtons and Anconas. Prize winning stock for sale. Eggs for hatching from free range birds. Price low. Guarantee satisfaction. J. R. Wilcox, Knoxville, Pa.

241 egg strain, Single Comb Buff Orpington eggs for hatching, 75 per cent fertile guaranteed. Cook strain direct. Circular free. Try me first. Walter Bardsley, Neola, Iowa.

Send a $5.00 money order to W. T. Remlinger, Ottoville, Ohio, for setting Single Comb Buff Orpington eggs and raise some prize winners. Satisfaction guaranteed.

Thorobred Orpingtons — Buffs, pen, $2.00 per 15. Range, $1.00 per 15; $5.00, 100. Whites, Kellerstrass strain, $2.50 per 15. Mrs. S. W. Pfister, Hiawatha, Kansas.

Single Comb Buff Orpingtons (Cook's strain) direct. Good colors, good size, good shape. Write for mating list. Riddle & Sons, Le Roy, Ill.

Send me an order for 50 S. C. Buff Orpington eggs at $2.50. I can please you. $4.50 per hundred. Mrs. Judson Lyman, Concord, Mich.

Orpingtons—White

Single Comb White Orpingtons, Kellerstrass strain. I furnish you the foundation for top-notchers in cocks, cockerels, hens, pullets, baby chicks or eggs. Send me what you feel you can invest in any of the above, and if I don't please you, you can have your money back (with a smile). Write for mating list. Mrs. W. H. Vreeland, Pattonsburg, Mo.

Crystal White Orpingtons—After June 1, 1912, we offer 50 pullets, $3.00 value, at $1.50; 50 pullets, $5.00 value, at $2.50; 50 yearling hens, $10.00 value, at $5.00 each. Baby chicks at 30c, 37½c and 60c each. All eggs at half price. Mountain View Ranch, 8 Sugar St., Salt Lake City, Utah.

Kellerstrass White Orpingtons. I won nine prizes in class of fifty-three shown by eight exhibitors. Birds score to 95½. Mating list. Fifteen eggs, $3.00. Express prepaid. Edward Buss, Janesville, Wis.

White Orpingtons of Quality. Eight grand pens. Eggs shipped anywhere. Catalogue describes each. Noted winners and layers. F. Bullington, Secretary, White Orpington Club, Richmond, Va.

From $1,000 Madison Square, N. Y., and Crystal Palace, England winners, 5 pullets and cockerel, $10. Eggs very best, $1 to $5 per 15. A. M. Sinsabaugh, Wyalusing, Pa.

High Class White Orpingtons. Eggs, $1.50 per setting. Here's your chance to get good stock or new blood cheap. Book your order early. Will H. Melzer, Effingham, Ill.

Single Comb White Orpingtons, Kellerstrass strains. Stock for sale, eggs $2 per 15, $5 per 45, $10 per 100, express paid. Chicks 30c each. K. I. Miller, Box 2, Lancaster, Mo.

Single Comb White Orpingtons, Kellerstrass strain. Have won at Altoona, Williamsport, Scranton. Eggs, $2.00, $3.00, $5.00 per 15. D. A. Strayer, Box D, Coalport, Pa.

Best pen of White Orpingtons in Texas. Winners at our largest shows. Imported. Eggs, $12.00 for 13. Texas Orpington Farm, Box FG, Flatonia, Texas.

Crystal White Orpingtons, eggs $5, $3 and $2 per 15. Incubator lots from utility stock a specialty, $7.00 per hundred. Mrs. Jess Burford, Waveland, Indiana.

Crystal White Orpingtons. My foundation stock is from a $100.00 trio, and Kellerstrass eggs. Eggs, 10c, $8.00 per 100. Mrs. Ethel Cook, Andover, N. Y.

Extra fine S. C. White Orpingtons. We are booking eggs for early delivery. Write your wants. Granite State Poultry Yards, Box 52, Nashua, N. H.

Single Comb White Orpingtons exclusively. Eggs, $1.50 and $2.00 per 15; $8.00 per 100. Gilbert W. Schnably, McKeesport, Pa.

Partridge Rocks

Partridge Rock eggs at $2.00 per 15; order direct from this ad or write for description of our stock. Ells Poultry Farm, Charlotte, Mich.

Plymouth Rocks—Barred

Pilgrim Strain Barred Rocks are great layers and prize winners. This means profit and pleasure. Chicks, eggs and stock sold. Catalogue shows photo of prize winners. Every customer mentioning The Fruit-Grower gete free two eggs from prize winners. Rhodaround Farm, Fairfield, Conn.

Ostrich Plume Barred Rocks, best blood lines of the world, show record unexcelled. Cockerel and pullet mating eggs, $3 for 15; $5 for 30. Mating list free. J. A. Ayers, La Plata, Mo.

Challenge Laying Strain of Barred Rocks and White Legborns. They lay the year round. Breeders for sale. Valuable circular free. Mrs. E. M. Hart, Route 32, Irondequoit, N. Y.

Barred Rocks, Reds, Buff Orpingtons. I. R. ducks and pheasants at reduction. Also cut prices on eggs. Prompt shipment. Julia E. Wise, New Market, Iowa.

Choice Barred Rock Cockerels, $1.50 to $2.00 each; eggs, $1.00 per 15 or $5.00 per 100; farm raised. Bred to lay. Dradie Dunbar, Columbus, Kansas.

Ringlet Barred Rock eggs, bred from E. B. Thompsons direct; 13, $1; 26, $1.75; 50, $3; 100 lots, $5. E. H. Barden, North East, Pa.

Plymouth Rocks—Columbians

Columbian Plymouth Rocks, best of layers, large size and good color. Eggs $3 per 15, $5 per 30. George Pinta, Ft. Atkinson, Wis.

Plymouth Rocks—White

High Class White Rocks, Fishel strain. 15 eggs, $1.00; 100 eggs, $5.00. Also pure White Indian Runner Ducks, eggs for sale in season. George Lehmkuhl, Box 33, New Bremen, Ohio.

White Plymouth Rocks of highest quality. Eggs and stock for sale, at reasonable prices. Orders booked for spring delivery. Mrs. O. V. Sherpy, Northfield, Minnesota.

Halbach White Plymouth Rocks. Eggs for hatching from winners at State Poultry Show, St. Joseph, Mo.; $2.00 per 15. Robt. G. Knipple, South St. Joseph, Mo.

White Plymouth Rocks. Fine large birds, good shape, color and head points. Eggs, $1.50; $1.00 per 15. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

White Rocks; males, $3.00, two $5.00; females, $2.00, six $10.00. White Holland Turkeys. D. E. Gray, Specialist, Route 5, Groveland Sta., N. Y.

Pure Bred White Plymouth Rock eggs, $1.00 per 15; $3.50 per 100. Baby chicks, $10.00 per 100. Miss Louie B. Galt, Appleton City, Mo.

Rhode Island Reds

S. C. Rhode Island Reds, ours lay in winter. Tomkins strain, 27 prizes on 30 entries. Trenton, Mt. Holly, Red Bank. Farm raised, great size, type, color. Eggs that hatch $2.00 per 15. Reneville Poultry Yards, Box 3941, Keyport, N. J.

S. C. R. I. Reds, eggs, farm range, choice laying strain $1.00 per 15, $5.00 per 100; pen No. 1, prize winners, $3.00 per 15. Special mating pen, $2.00 per 15. Indian Runner Ducks, eggs, $1.00 per 12. W. C. Farley, Emington, Ill.

Single-Comb Rhode Islands. Eggs, $2.00 and $3.00 per 15. From beautiful stock. Sale Cocks and Cockerele. H. V. Reynolds, Manager, Peerless Yards, 2186 East 43rd street, Cleveland, Ohio.

Our 200-egg strain Rose Comb Reds, brilliant red color, no slate or white. Good comb and wing, long bodies, blood red eyes. Win wherever shown. John Mierley, Ottumwa, Iowa.

You will need the new Rhode Island Red Journal, devoted to the Reds exclusively. Contains a wealth of practical hints about poultry raising on the farm. Send 25c for one year's subscription. Red Journal, Readlyn, Iowa.

Single Comb Rhode Island Reds. Best high bred utility stock from world's leading strains. Eggs only, per setting, $1.50 to $2.00. Burt Roberts, Milan, Mo.

Rhode Island Reds, both combs. (Sibley strain), large size, red to the skin. Good shape, good layers. Write for mating list. Riddle & Sons, Le Roy, Ill.

Michigan Royal Red strain Single Comb Reds that are red. Ninth year. Heavy winter layers. 15 eggs, $1.50 and $3.00. C. W. Southworth, Dowagiac, Mich.

Webb's Single Comb Reds. Ten years experience. Layers and winners of state cup, etc. Free circular will explain. E. M. Webb & Son, Waukesha, Wis.

Red Cherry Strain, Rose or Single Comb. Very best eggs from prize winners for sale at $1 per 13; $5 per 100. Dr. A. N. Sensalaugh, Wyalusing, Pa.

Wyandottes

Black and White Wyandottes—Stock and eggs for sale. Black Wyandottes won first and second Hen and Grand Champion Male at Springfield, Ill., state show. Eggs $3 per 15. G. D. Duncan, Alton, Ills.

Wyandottes—Buff

Best for farmer or fancier. Eggs from prize winning, special winter laying beauties, $2.00 per 15; $10.00 per 100. L. D. Van Rensselaer, Kent, Ohio.

Wyandottes—White

White Wyandottes. Eggs from show winners exclusively, which several scored to 96; never defeated, won 53 premiums, 3 shows, 19 1st and 2d. Eggs, $1.00 and $2.00 per 15. Write for photos in mating list. You'll buy sure if you do. J. H. Willis, Jeweler, Norris City, Illinois.

At recent Utica, N. Y. show in hot competition with 110 White Wyandottes, seven out of nine birds I exhibited won. Will give better value than anyone. Try me. Send for mating list. Stock for sale. A. H. White, Glenwood Ave., Syracuse, N. Y.

Excelsior White Wyandottes won ten ribbons Grand Rapids 1911 show, four at Holland, December, 1911. Winners whenever shown. Good cockerels. Eggs for hatching. John M. Hoogerhyde, Bates St., Grand Rapids, Mich.

White Wyandottes. Fine line-bred Dustin stock. Winners St. Louis, Portland, Muncie. Fifteen eggs, $2.00; thirty, $3.50. Utility, fifteen, $1.00; hundred, $5.00; circular free. Herbert Smith, R. F. D., Bluffton, Ind.

Peterson's Superb White Wyandottes. Great silver cup winners, fine layers. Winners Chicago, St. Louis, Galesburg and other shows. Send for catalogue. Wm. A. Peterson, Box F. G., Galesburg, Ill.

White Wyandottes, Superb strain. Winners at Altoona and Greenburg, Pa. Large, pure white, heavy laying birds. Send for mating list. James A. Bender, Box C, Coalport, Pa.

Rowland's Invincible White and Columbian Wyandottes are royal winners. Stock and eggs for sale. A satisfied customer or money refunded. Frank Rowland, New London, Ohio.

White Wyandottes, prolific laying strain. Tested eggs from vigorous stock will secure good hatch, $1.50 per 13, $8.00 per 100. Wm. F. Schaffner, Lansdowne, Pennsylvania.

White Wyandottes, prize winners, heavy laying strain. Special mated pens. Eggs, $2.00 for 15. White Cochin Bantams. I. A. LeMaster, Bushnell, Ill.

Miscellaneous Poultry

Empire Poultry Yards, Fort Plain, N. Y., breeds Single Comb White, Brown and Buff Leghorns; also Houdans, Rumpless fowls, Indian Runner Ducks, Pearl Guineas, Buff Cochins, Light Brahmas. In Bantams, Black, Reds, Red Pyle, Buff Cochins and Golden Sebrights. Winners, famous for shape, color and egg production. Eggs, $2.00 setting. Mention Fruit-Grower.

Eggs for hatching from high scoring prize winners. Barred and White Rocks, Buff, Brown and White Leghorns, White and Silver Laced Wyandottes, Black Minorcas, White and Buff Orpingtons, S. C. Rhode Island Reds. Write for prices. Lebanon Poultry Yards, Lebanon, Neb.

Young's Strain Single Comb White Leghorns, Single Comb Rhode Island Reds, Buff Rocks and Duck Wing Games. Bantams, $1.00 and $1.50 per 15 eggs; $5.00 and $7.00 per 100. Bred for eggs and show room. Your satisfaction is our success. E. G. Yocum, Souderton, Pa.

Single Comb White Leghorns, Young's and Wyckoff's strains direct. 15 eggs, $1.00; 100, $5.00. Crystal White Orpingtons, Kellerstrass strain; 15 eggs, $2.00; 100, $9.00. White Indian Runner Eggs, 12, $4.00. White Feather Farm, New Bremen, Ohio.

Rose Comb Brown Leghorn, Single Comb Buff Orpington, 15 eggs $1.00; 30, $1.75. Indian Runner Ducks, 13 eggs, $1.00; 26, $1.75. White African Guineas, 15 eggs, $1.25; 30, $2.00. Honey Creek Poultry Farm, Kahoka, Mo.

Kellerstrass White Orpingtons, Fishel White Plymouth Rocks, that are prize winners and money makers. Eggs, $2.00 per 15; baby chicks, $25.00 per 100. Satisfaction guaranteed. John McKibbin, Goshen, Ind.

Choice eggs for hatching from 52 varieties of chickens, ducks, geese, turkeys, 130 premiums at one exhibit. Largest poultry farm in northern Iowa. Stamps for catalog. E. & J. W. Trettin, Grafton, Iowa.

White Wyandotte and Pekin Duck eggs, 15, $1.00; 30 or more, 6c each; best 2 pens headed by males we refused $100.00 each, 15, $3.00; 30, $5.00; quality, not quantity. Mrs. Doom, Ashland, Neb.

Kellerstrass White Orpingtons, Buff Orpingtons, Black Minorcas, Columbia Wyandottes, Rhode Island Reds. Choice cockerels for sale. Eggs in season. W. S. Chalker & Sons, Waters, Mich.

Single Comb Buff Orpingtons, Buff Leghorns and White Leghorns. Eggs for hatching, $1.00 per setting of 15. Also some good cockerels for sale at $2.00. Henry Y. Shirk, LaPaz, Ind.

Eggs for hatching. Exhibition pen. B. P. Rocks, $3 per 15. Utility flock $5 per 100. Toulouse geese eggs, 25c each. White guineas, $1 per 15. Mrs. I. B. Geiger, Route 2, Ida Grove, Iowa.

White Rock eggs, $3.00 per 100. Farm range White Holland Turkey eggs, $3.00 for 12. Brown Leghorn eggs (from separate farm), $3.00 per 100. Mrs. Henry Hanman, Browning, Mo.

White-Crested Black Polish, White Wyandottes, White Orpingtons. Breeding pens of the best. Eggs, $5 to $10 per 15. Stock in season. Edward F. Waldron, Dighton, Mass.

Eggs—White Runner ducks, Partridge Rocks, White and Fawn Runner ducks, Single Comb Brown Leghorns. All winning stock. Write J. E. Gault, Chippena Lake, Ohio.

Barred Rocks, Brown Leghorns, Silver Laced Wyandottes and Reds. Eggs from pens, $1.50 for 15. Write for free catalog. Address Sunnyside Poultry Farm, Owensville, Mo.

Black Langshans, Buff Orpingtons. Single Comb Rhode Island Reds. Winners of 96 ribbons, 15 eggs, $2.00. Baby chicks, 25c. C. R. Smith, Burnt Prairie, Illinois.

Stock, eggs, baby chicks. From winners at Springfield, Jacksonville, Pittsfield, Illinois, 1911. Write for circular. Southern Slope Poultry Farm, Box A, Jacksonville, Ill.

Rhode Island Whites, unequaled as layers. Also Rhode Island Reds, Rose Combs, Poland China hogs. Eggs and stock for sale. W. A. Elam, Mulberry Grove, Ill.

Pearl Guinea Eggs, 25 for $3, 50 for $5, 100 for $10. Valley View Farms, Orchard Park, N. Y., Rural Box 22.

Infertile eggs replaced without cost. Fishel's White Rocks, $1.50 per 15; Wyckoffe S. C. White Leghorns, $1.00 per 15. Arthur Bear, Route 10, York, Pa.

If you want Orpingtons, Reds, Leghorns, Wyandottee, Rocks; males or females; we can save you money. Write us anyway. Lee Harris, College View, Neb.

Ribbons to burn, winners every show. S. and R. Comb Reds, S. C. White and Black Orpingtons. $2.50 per 15. Dr. W. H. Craft, Coalport, Pa.

Chicks

Baby chicks, 10c to 20c; stock, $1.25 to $5; eggs, $5 per 100 up. Rhode Island Reds, both combs. White and Columbian Wyandottes, White and Buff Orpingtons, Pekin, Rouen and Indian Runner ducks, Toulouse geese, Bourbon Red turkeys. Catalogue free. G. A. Mitchell, Dept. B, Ridott, Ill.

Indian Runner Oucks. Fawn and White. White egg strain. And Single Comb Reds. For size and color they have no superior. Eggs per setting or by hundred. Write for prices. Mrs. Z. T. Biggerstaff, Edgerton, Mo.

Mammoth Pekin Oucks, winners at Chicago, Minneapolis, Wisconsin State Show and Fond du Lac. Eggs, $1.50; $1.00 per 12; $3.00 per 50; $5.00 per 100. Circular free. Jos. H. Kitchen, Eldorado, Wis.

Runners—English-American-White. Prize winnere. Perpetual motion white egg machines, outlaying hens. Eye-opener circulars. Write your wants. Special, Reds, Partridge Rocks. J. Newell, Girard, Ill.

Fishel Strain White Runners, Walton Strain English, American Fawn and White Stendard Bred and for pure white eggs none better. Thirteen eggs, $1.00 up. Wooldridge & Grape, Englewood, Ill.

Indian Runner Oucks, tested layers, moneymakers. Rhode Island Reds, big boned, red eyed, rich even glossy reds. Barred Rocks. Zebra barring. Reinharts Farms, Ottumwa, Iowa.

Pearl White Eggs from light Fawn and White Indian Runner Ducks. Also Single Comb Rhode Island Red eggs. De Graff strain. Mrs. Ivan Jacobs, Sellersburg, Indiana.

Mammoth Pekin and Indian Runner Ducks. The birds for the fruit grower. Eggs, $1.50 for 12; $3.00 for 30, $4.50 per 50. Paul & Gordon Griffith, Fredericktown, Mo.

Indian Runner Oucks—Fawn and White, stock for sale. Eggs $2 per 15, $5 per 45, $10 per 100, express paid. Ducklings 30c each. K. I. Miller, Box 2, Lancaster, Mo.

Indian Runner Ducks, Fawn and White. Eggs $1.00 per 15. J. W. Fretz, Bosworth, Mo.

White Indian Runner Oucks, Fishel strains, trio, $25.00. Eggs, $4.00 per 12; $7.50 per 24. Henry Schowe, Jr., New Bremen, Ohio.

Oucks and Geese

Indian Runners, American standard; English Waltons, pure white. Pene mated by expert judge. Stamp brings mating list, judges' testimony. My new booklet "Road to Success." Mrs. D. C. Teasley, Anderson, Ind.

Turkeys—White Holland

Large White Holland Turkeys; 32 pound toms; 19 pound hens; 16 pound pullets. Eggs, 13, $2.50; 50, $7.50; 100, $15.00. Circular free. J. C. Hodges, Waterloo, Ind.

Turkeys—Mammoth Bronze

Mammoth Bronze Turkeys, the big kind eggs, $4.00 per 11. J. W. Fretz, Bosworth, Mo.

Pigeons

Pigeons—Three pairs guaranteed extra homers, $5.00. Leg Bands, ten cents dozen. Cleaning tools, dollar a set. Kirkbride, 102 East Park Ave., Haddonfield, N. J.

POULTRY SUPPLIES

Dirk's Red Mite Killer. One coating kills all mites. No more will appear during the season. Two dollars per gallon, express prepaid. Booklet free. M. E. Dirk, Box L, North Baltimore, Ohio.

FARM LANOS FOR SALE

Arizona

Free Homesteads in the Artesian Belt. Finest fruit land. Good climate, good water, good markets, on railroad. Address Secy. Commercial Club, San Simon, Arizona.

Arkansas

Ideal Fruit and Poultry Farm—26 1-3 acres, half mile from Hiwasse, 22 acres in 8, 10 and 18-year-old orchard, Gano, Jonathan and Winesap, 25 Elberta peach trees bearing; 4 1-3 acres nice grove and pasture. No buildings, but fine site. Land lies fine and trees are full of fruit. Will give guarantee, backed by collateral that it will produce 2,000 bushels of fruit this season and there should be twice that much. Price $2,500, $500 cash, balance in yearly payments of $500. Other properties. Write Banks and Adcock, Hiwasse, Ark.

Famous Springdale fruit district; money-making orchard home, two miles out; fine improvements; clover pasture; strong corn land; 32 acres, of which half in bearing apple, cherry, pear and peaches; $4,000 for quick deal; buyer gets half fruit crop. Also 15 acres, fair improvements, fine strawberry soil, $1,000; possession. Fredericks Realty Company, Springdale, Washington County, Ark.

200 Acres Elberta Peach Land adjoining the big orchards at Highland, Pike County, Arkansas. Price, $30.00 per acre cash. Green & Millwee, Prescott, Ark.

Peach Farm For Sale—3,000 Elberta trees, set with fruit. C. A. Towne, Clarksville, Ark.

California

California Irrigated Lands—Famous Gridley colonies; tracts to suit; easy terms; improved farms; best homeseeker's proposition in California. Write for particulars. Gridley Land Co., Gridley, Calif.

Colorado

If you want a part of one of the very choicest tracts of fruit land on earth, where conditions are ideal for growing fruits and for a home, then send for copy of a beautiful booklet describing Morrisania Ranch, Grand Valley, Colo. This is not cheap land—it sells for $300 per acre, including perpetual water right, but it is worth the money. It may be that some member of your family needs the benefit of Colorado's climate for some form of lung trouble. Get a tract of this land and establish your home there before it is too late. The ranch contains 880 acres, and only part of it is for eale, for we will develop the remainder for our own use. Shall we send you the booklet which describes the place? Write me if interested. James M. Irvine, Editor The Fruit-Grower, St. Joseph, Mo.

Oouble Your Oollars. Buy Apple and Potato lands in Western Colorado. Government irrigation. Profit producing prices. Best climate. Reliable information. Crop statistics given under oath. Olinger & Knapp, 1712 Champa St., Denver, Colo.

Cuba

Rich soil, ideal climate. Abundant rainfall, best transportation; 20 acres, $600, $10 monthly. Map and literature free. S. O. Sanderson, 184 Palace Bldg., Minneapolis, Minn.

Florida

For Sale—Forty acres of the finest virgin hummock land, located at Wildwood, Sumter County, Fla. Terms, $1,200.00, half cash. Charles Weiland, 1929 California Ave., St. Louis, Mo.

Homes In Healthy West Florida, $20 per acre. Part pay in crops. "Facts About Florida" free. W. S. Reeve, Pensacola, Fla.

Idaho

For sale or exchange—Canyon Co., Idaho, orchard. Ten acres set to apples; Jonathans, Winesaps and Ronio Beauty. Address C. W. Renshaw, Rock Valley, Iowa.

Missouri

Opportunity for orchardist and farmer—Commercial orchard and dairy farm; 185 acres, Southern Missouri, Ozark country; railway alongside; splendid water, climate, scenery; adjoins growing town, with sure future; over 40 acres in orchards and small fruits; 1,000 apple trees, 1,600 pear trees, 300 peach trees, 1,600 grape vines, all six years old, carefully selected; 3 acres in strawberries; abundance other small fruits; about 85 acres timber and woods pasture; bottom land for alfalfa and corn; necessary buildings. Man with $3,000 or more cash, for first payment, can soon make balance out of place. Address R. D. Culver, 729 Victoria Building, St. Louis.

North Carolina

Come South. Mountain section, altitude 2,250 feet. Mild winters, cool summers. Dairying, fruit growing, diversified farming. Cheap lands. Information Bureau, Hendersonville, N. C.

Oregon

We claim that the Umpqua Valley is "The Best in the West." Let us tell you why it is the best for you. Roseburg Commercial Club, Roseburg, Oregon.

Texas

Fruit Ranch Sacrificed. Finest in Rio Grande Delta. Never enows. Value, with buildings, crops, stock, tools, etc., over $25,000, for $15,000, with $5,000 down, balance easy terms. Box 14 A, Donna, Texas.

Utah

Alvin, Texas, choice orange, fig, strawberry, truck and general farming lands. The best of soil, climate, markets and social advantages. Sea breezes. Send for free booklet. E. C. & J. F. Webster, Alvin, Texas.

For Sale—A bearing Albermarle Pippin and Peach orchard, in Albermarle Co., Va., the best fruit section of the U. S. Five consecutive crops and very promising for this year. The Albemarle Pippin is the late Queen Victoria's favorite of all apples and is the highest in quality. A beautiful land in the most beautiful belt of the U. S. A chance. Write Sam'l B. Woods, Charlottesville, Va.

Washington

Choice 40 acres in best apple district of Northwest. Apples raised to perfection without irrigation. Cool summers, mild winters, no blizzards or cyclones. Railroad and steamboat transportation. Write for description. J. M. Wheeler, White Salmon, Wash.

REAL ESTATE AGENTS

To buy, sell or exchange property, any kind, anywhere. Address Northwestern Business Agency, Minneapolis, Minn.

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace Bldg., Minneapolis, Minn.

NURSERY STOCK

Pedigreed Nursery Stock—If you want to plant trees that are sure to bring big returns in the future, write for our great new book, "Pedigreed Horticulture," the handsomest catalog of the year, giving complete information regarding pedigreed trees. We propagate all nursery stock from individual trees which have a record of bringing in big profits from the orchard. Do not fail to investigate. Write today. Our book is free. Winfield Nurseries, Winfield, Kan.

Gibraltar—Canada's New Black Raspberry. Large and hardy. Greatest yielder at experimental farm; six strong plants, 50c; fifteen, $1.00, postpaid. Send for circular. N. E. Mallory, Blenheim, Ont., Canada.

Grow $3,000 in your back yard as a side line, while you work—while you sleep. Raise Golden Seal. Sure crop. No hazard. Rising market. Information for stamp. Chas. G. Dodge, Albany, Wis.

Allen Peach (New) big yellow freestone, free catalog of all kinds of nursery stock. W. A. Allen & Sons, Geneva, Ohio.

FRUIT PACKAGES

Wright's Fruit Package Co. Berry boxes, crates, apple boxes, fruit packages. Ewald's folding berry boxes beat them all. West Minneapolis, Minn.

AGENTS WANTED

Local representative wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L420, Marden Building, Washington, D. C.

LIVE STOCK

Milch Goats—Swiss and Spanish breeds. G. H. Wickersham, 1244 St. Francis Ave., Wichita, Kansas.

DOGS AND PET STOCK

Scotch Collie Puppies. Pedigreed stock. $5.00 and up. Dog, Hare and Poultry catalogue. Belgian book, 5 stampe. Falling Poultry Farm, La Fargeville, N. Y.

Shetland Ponies or any of the leading breeds. Cattle, sheep, hogs or dogs. Send 4c for illustrated catalog. J. D. Stodghill, Shelbyville, Ky.

Collies for farmers. Pedigreed stock, pups $7.50 to $10.00; grown dogs, $15.00 up. Several bred females. W. D. Weaver, Harrisonburg, Va.

PATENTS

Valuable Free Book on Patents, telling how to protect and turn your ideas into gold, sent free. Fitz Gerald & Co., 821 F St., Washington, D. C.

Send For Free Booklet—All About Patents and Their Cost. Shepherd & Campbell, 500M Victor Bldg., Washington, D. C.

MISCELLANEOUS

Kodak Films Developed 10c per roll, any size. Prompt attention given mail orders. Prints 2¼x3¼ to 3¼x4¼, 3c; 4x5 to 3¼x5½, 4c. J. M. Manning, 1062 Third Avenue, New York City, Box M.

Have you read "How to Succeed?" It is the greatest satire ever written on the get-rich-quick craze, 15c postpaid. A. Ruhnau, Dept. 10, 280 Columbus Ave., New York, N. Y.

Buyer Wanted—For peach crop. Twenty-five thousand bushels in prospect. Fruit thinned. Packages furnished. Labor plentiful. Francis Burgevin, Spiro, Okla.

Get the Best Write us today for our remarkable offer on **Monarch Hydraulic Cider Press** —alleizes—guaranteed strength and capacity. Also Gasoline and Steam ENGINES, Threshers, Saw Mills. **Free Catalog** Write for it today

MONARCH MCHY. CO., 642 Hudson Terminal, New York

Are You Interested In pleasant, permanent and profitable agency work? We offer a position as exclusive distributing salesman either all or spare time for the Automatic Combination Tool, a Fence Builders Device, Post Puller, Lifting and Pulling Jack, Wire Stretcher, Wrench, etc. Used by Contractors, Teamsters, Farmers, Factories and others. Weighs 24 lbs., lifts or pulls 3 tons. Write for offer and county desired.
AUTOMATIC JACK CO., Box 99, Bloomfield, Ind.

Sectional Cold Storage Buildings for the Storage of Fruits and Vegetables.

A manufacturing company in St. Louis, Mo., makes a sectional cold storage building, which from all appearances, seems to be just the thing for enterprising fruit growers. The buildings are now being used by breweries at distributing stations for their products in towns where they have customers who buy in carload lots.

The entire house is made at the factory in sections which are 3 feet 10 inches wide and 7 feet 4 inches high. These sections are bolted together by an interlocking process. The roof, gable ends, are also in sections, all properly marked, so in erecting the building it is merely a matter of building a wood foundation and placing the parts together.

The principle of the sectional building is that it can be made larger or smaller and moved from one location to another without injuring the construction or the insulation. The sectional building is not an experiment, as it has been on the market for a number of years, and today there is approximately about 10,000 of them in use, all giving the very best of satisfaction.

To those who have no facilities for storing their crops, such a building makes a splendid structure for holding perishable fruit until a market can be found, as well as for pre-cooling, before shipping to distant markets in refrigerator cars. Some of our readers may be using such a structure as this, and we are anxious to hear from them as to how they like the building. We also want to hear from all others who are interested in erecting for themselves such a storage plant which we understand costs in the neighborhood of $500.

We are Headquarters for
BARRELS AND KEGS

APPLE BARRELS—BUY EARLY

There will be a big demand for apple barrels this season, and you should enter your order early and avoid the rush. We also furnish flour, meal and poultry barrels. New Oak Cider and Pickle Barrels and Kegs, 5 to 50 gallons. Secondhand Whiskey Barrels. Soft Wood Sorghum Barrels and Kegs. Baskets, Berry Boxes, Cooperage Stock, Headliners and Bungs.

Write, telephone or wire us. Our stock is the best in the land, and prices are right.

J. A. SHCROER & COMPANY
Telephones 257 St. Joseph, Mo.

AUTOMOBILE BARGAINS

We offer a Handsome New White Steamer, five-passenger car, cost $2,000.00, used only to demonstrate, at $800.00 cash if taken at once.

Handsome new foredoor roadster at a bargain. Write at once for particulars. We can save you big money on a car.

Please mention The Fruit-Grower when you write.

LESLIE MOTOR CAR CO.
1301 Frederick Ave., St. Joseph, Mo.

Secure and Profitable

These essentials of a good investment are combined in our

7% First Mortgage Gold Bonds

Paying Interest of 7%

payable every six months in coupons attached, which can be collected through your local bank. Issued in denomination of $100, and fully protected by the entire assets of the company. These bonds are dated July 1, 1907, and run ten years.

Write for full details and booklet.

THE FRUIT-GROWER
St. Joseph, Missouri
Capital Stock, $100,000.00, Fully Paid

FOR SALE

Several Orchards in the Famous

ALBEMARLE PIPPIN

district of Roanoke County, Virginia, one of the few localities where are found, in small tracts, the soil, climate and general environment adapted to the production of first grade Pippins. The same section produces also red apples of splendid coloring and rare flavor, notably the Winesap, Black Twig, York Imperial and Ben Davis varieties. Orchards in this section have a heavy crop this season. Here are some bearing orchards that are now for sale:

2,800 trees on 38 acres, with 5 acres wooded; Pippins, reds and 500 young chestnut trees which brought, last crop, $7 per tree; 20 minutes walk from trolley line at Salem.

800 trees on about 20 acres; Pippins; 6 miles from shipping point; brings $500 per acre annually.

6,000 trees on 115 acres; mainly Pippins; age 9, 10 and 11 years; 7 miles from shipping point.

14,000 trees on 288 acres; reds; age 11, 12 and 14 years; one mile from shipping point; estimated crop for 1912 20,000 barrels.

With its transportation facilities and varied resources (prominent among which are the orchards) Roanoke County occupies an imporant position commercially; with its combination of water, valleys, rolling foothills and rugged mountains, it ranks among the first in the East in point of scenery and healthful climate; and with its four colleges, efficient public school organization, and access, past and present, to the outside world, the enlightenment and culture of its people are above the average. Why not buy an orchard in this splendid section and make your future home with us? A card will bring full particulars. Address Box 11, Salem, Va.

Two Practical Booklets FREE

These booklets should be in every farmer's library

Practical Suggestions for the Fruit Grower, by Prof. J. C. Whitten, Department of Horticulture, Missouri State University, and **Corn and Alfalfa,** by Dr. S. M. Jordan, of the Board of Agriculture, Missouri State University.

Issued by the
Immigration Department

Missouri Pacific Iron Mountain

"Only the man who has succeeded is competent to tell others how to succeed." These booklets have been prepared by men who are experts in their line and are practical in their treatment of the subjects mentioned.

Write today—a postal will do—and both booklets will be sent you by return mail.

J. N. ANDERSON
Immigration Agent
ST. LOUIS
MO.

MISSOURI PACIFIC IRON MOUNTAIN

Crop Reports For May

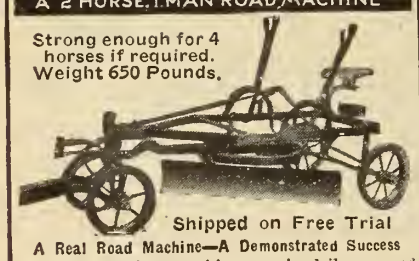
LOCATION	STRAWBERRIES Condition of Average	Plantation	Prospects	BLACKBERRIES Condition of Average	Plantation	Prospects	PEACHES Condition of Average	Plantation	Prospects	APPLES Condition of Average	Plantation	Prospects
ARKANSAS—												
Boonville	Small	Fair	Good	.....	.....	.....	Small	.....	Very good	Small	Fair	Poor
Russellville	Small	Fair	Poor	Small	Bad	Poor	Medium	Fair	Excellent	Small	Fair	Poor
Morrilton	Small	.....	Good	.....	.....	.....	Small	.....	Excellent	Small	.....	Poor
Fayetteville	Large	Fair	Excellent	Medium	Fair	Excellent	Large	Good	25%	Large	Medium	Excellent
Rogers	Small	Good	Good	Small	Fair	Fair	Medium	Poor	Poor	Large	Good	Poor
Farmington	Large	Good	Good	.....	.....	.....	Small	Poor	Poor	Large	Good	Excellent
Highfill	55	Good	Fine	.....	.....	.....	None	.....	.....	300	Medium	Good
Judsonia	3000	Good	Fine	.....	.....	.....	None	.....	.....	None	.....	.....
COLORADO—												
Grand Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	Fine	Excellent
Hotchkiss	Small	Good	Excellent	Small	Good	Excellent	Large	Good	Excellent	Large	Excellent	Excellent
IDAHO—												
New Plymouth	Small	Good	Excellent	.....	.....	.....	1200	Good	Excellent	.....	.....	Excellent
ILLINOIS—												
Neoga	.....	.....	.....	.....	.....	.....	.....	.....	No buds	10,000	Good	Good
Louisville	.....	.....	.....	.....	.....	.....	Small	.....	Buds dead	Large	Fair	Good
Batchtown	.....	.....	.....	.....	.....	.....	.....	.....	Buds dead	Large	Fair	Good
Fulton	35	Bad	Poor	Small	Bad	Poor	Small	Bad	Dead	Medium	Fair	Poor
Creal Springs	Small	.....	Good	.....	.....	.....	.....	.....	Buds dead	Large	Poor	.....
Carmi	Medium	Good	Good	.....	.....	.....	Medium	Medium	Buds dead	Large	Good	Good
Plainville	Small	.....	Fair	Small	Poor	Very bad	50	Very bad	None	200	Good	Good
Quincy	Small	Fine	Good	.....	.....	.....	.....	Poor	Buds dead	200	Fair	Fair
INDIANA—												
Marshall	Small	Good	Fine	.....	.....	.....	.....	Bad	None	Fair	Good	Light
IOWA—												
Glenwood	Small	Fair	Poor	Small	Bad	Poor	Small	Good	Good	Large	Fair	Good
Harlan	90	Good	Excellent	100	Fair	Fair	.....	.....	.....	35	Good	Light
Hamburg	Small	.....	.....	Small	Bad	.....	.....	.....	None	500	.....	Good
Randolph	.....	.....	.....	.....	.....	.....	.....	.....	.....	40	Good	Fair
KANSAS—												
Council Grove	.....	.....	.....	.....	.....	.....	.....	Good	Excellent	.....	Good	75%
Ottawa	.....	Fair	Good	.....	Poor	Good	.....	Bad	Buds dead	.....	Good	Good
Mound City	Small	Good	Good	Small	Fair	Fair	.....	.....	Buds dead	.....	Good	Good
Winfield	Small	Fair	Good	Small	Bad	Poor	Small	Good	Good	Small	Good	Fair
Cedar Vale	Small	Good	Good	Small	Bad	Small	Large	Good	Good	Medium	Fair	Fair
Edwardsville	Small	Fair	Good	.....	.....	.....	50	Poor	None	300	Fair	Good
Hiawatha	Small	Good	Good	Small	Good	Fair	Small	Fair	Good	Medium	Good	Excellent
Hutchinson	Small	.....	.....	Small	.....	.....	Small	Good	Good	10,350	Finest	Best ever
Leavenworth	50	Good	Excellent	Medium	Fair	Good	Medium	Fair	Buds dead	Medium	Fair	Excellent
Manhattan	Small	Fair	Good	Small	Fair	Poor	Medium	Good	Fair	Medium	Fair	Excellent
Parsons	Small	Poor	Poor	Small	Poor	Poor	Small	Good	Excellent	Small	Good	Good
Tonganoxie	.....	.....	.....	.....	.....	.....	.....	.....	.....	800	Excellent	Good
Wathena	1200	Good	Good	300	Good	.....	25	.....	None	1000	Good	Good
Wichita	Small	Poor	Fair	Small	Poor	Fair	Small	Poor	Fair	Medium	Good	Good
KENTUCKY—												
Bayou	.....	.....	.....	.....	.....	.....	Small	Bad	Buds dead	Medium	Fair	Good
Lewisport	Small	Fair	Good	Small	Bad	Bad	Medium	Bad	Buds dead	Medium	Fair	Good
Bardwell	Small	Good	Good	Small	Good	Good	Medium	Poor	Poor	Large	Poor	Good
MASSACHUSETTS—												
Rowley	Medium	Medium	Good	Small	Fair	Fair	Medium	Good	Good	Small	.....	Good
MICHIGAN—												
South Haven	Large	Good	.....	.....	Dead	.....	.....	.....	Poor	.....	.....	.....
MISSOURI—												
Koshkonong	40	Fair	Fair	.....	.....	.....	5000	Good	Buds dead	75	Good	Fair
NEW YORK—												
Benton	.....	.....	.....	.....	.....	.....	.....	Good	Good	.....	Good	Excellent
Valois	Small	Fair	Good	Small	Fair	Good	Large	Fair	Good	Small	Fair	Good
NORTH CAROLINA—												
Taylorsville	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	Fair	Good
OHIO—												
Batavia	Medium	Good	Good	Small	Bad	Poor	Medium	Bad	Poor	Medium	Good	Good
Proctorville	Medium	Good	Good	Small	Good	Good	Medium	Good	Good	Large	Good	Good
OREGON—												
Hood River	600	Splendid	Good	.....	.....	.....	.....	.....	.....	3,592	Splendid	Good
Salem	Small	Good	Good	Large	Good	Good	Medium	Bad	Poor	Medium	Good	Good
PENNSYLVANIA—												
Mifflintown	Small	Good	Fair	Large	Good	Excellent	Large	.....	None	Large	.....	.....
Light Street	Small	Fair	Good	Small	Good	Good	Large	Good	Good	Medium	Good	Good
WEST VIRGINIA—												
Lucile	Large	Fair	Good	Large	Fair	Good	Small	Fair	Poor	Small	.....	Good

"It's Time To Mend Your Ways"

Bad Roads are made Good Roads
In the best and easiest way with

THE GLIDE GRADER DITCHER LEVELER No 1
A 2 HORSE, 1 MAN ROAD MACHINE

Strong enough for 4 horses if required. Weight 650 Pounds.



Shipped on Free Trial

A Real Road Machine—A Demonstrated Success

Over 2,000 of these machines are in daily use and proving our claim. "The best all round road machine made." Will dig a V-shaped ditch 2 to 3 feet deep. Indispensable for leveling and preparing irrigated land and for other various kinds of general work.

Write us TODAY for Booklet and special good roads matter. All Free.

Glide Road Machine Co., 508 Huron St., Minneapolis Minnesota

APPLE BOXES

If you want to find a ready market for your apples and at a much better price, pack them in standard bushel BOXES. They cost no more than barrels if you buy them from us. Now is the time to make your arrangements. Our mill capacity this year 500 cars. We ship all over the United States. Write at once for size and price delivered to your station. L. J. NELSON & COMPANY,
39th and Pacific Sts. Omaha, Neb.

RIGHT NOW
is the Time to Send for Our Price List on
FRUIT TREES
Varieties True—No Disease—We Pay the Freight
For Price List Address
NEW HAVEN NURSERIES
Box 125 New Haven, Mo.

EXCELSIOR SWING STANCHION
30 Days' Trial—Stationary when open
Noiseless, Simple, Sanitary, Durable
The Wasson Stanchion Co.
Box 23 Cuba, N. Y.

ELBERTA PEACHES FOR SALE

We have the fruit farm—7,500 (seven thousand five hundred) peach trees, in Oklahoma, on the M. K. and T. R. R. Ready for market about July 10. Make us an offer.
M. W. PEARSON, 452 Century Bldg., St. Louis, Mo.

THE NEW YORK MARKET

If growers of fruit or vegetables who are intending to ship their products to the New York market could come here occasionally and see for themselves they would understand better what to do. They would learn, too, why it is that so much of what they ship fails to bring a profitable figure. It requires a knowledge of this market, of its needs, of the peculiarities of its people, to enable a shipper to be certain that his products will command the highest price. And, unfortunately, that knowledge can be acquired only by first-hand investigation. The papers can help some. Indeed, it is the purpose of this column to point out some of these facts from time to time, and thereby make it easier for growers to receive full values for what they offer.

One of the striking examples this spring has been strawberries. The price held up for weeks longer than usual. Suddenly it dropped, and it became possible to buy good, sound berries in the retail market, shipped from Southern points, at 10 cents a box, or three for a quarter. If this is the retail price, it is not difficult to understand that the figure which is paid by the wholesaler to the shipper must fall below the profit range. Some growers have told the writer that there is no money in strawberries in nearby fields at 10 cents a box. Of course, they have to figure higher land values and expenses than the grower in the South, but the conditions are perhaps equalized by the higher freight rate which the Southern shipper must pay.

Some of these berries, evidently delayed, reached the market in bad condition. If, under such circumstances, there were some way of re-sorting them before they go on the market, as the retailers do,

We Offer This $15.00 Canner and $2.00 Capping Steel For Only $8.00 or 3 For $22.50 During June

This canner is used by the government in the canning clubs. Miss Vallie V. Woodruff, of Converse, S. C., employed by the government, writes us as follows: "Out of 14 girls who exhibited their product, 8 of them used Farm Canning Machines, and not one of them lost a can of anything, either tomatoes or other vegetables or fruits, but every one of the others lost from 30 to 78 cans." Under the same instructor those using our canner had perfect success, while others using different makes loss was heavy. Every customer who purchases this canner is delighted with it, for it is so easy to operate.

It comes ready set up for operation, and you can be canning on it out under the shade of the trees in 20 minutes after you take it out of the shipping crate. Needs neither cook stove nor furnace to operate it on. It burns ordinary stove wood and works any kind of glass or tin cans. Daily capacity 400 to 1,000 cans. Shipping weight, 50 pounds. This outfit complete consists of 1 canner, 1 capping steel, 1 soldering counter, 1 can tray, 2 lifting hooks, 1 charcoal furnace, 1 pair can tongs, and a book of instructions, all for $8.00, or 3 for $22.50. We will refund the purchase money to any customer if this canner fails to do perfect work. We quote on cans at the factory as follows:
100 2-pound cans, $2.25; 250, $5.00; 500, $8.50 100 3-pound cans, $3.00; 250, $6.00; 500, $11.00.
Above prices include crating and solder hemmed caps. Cut this ad. out, send to us with $8.00 for one outfit, or $22.50 for 3, and get a canner that will do your work to please you.
FARM CANNING MACHINE COMPANY, Dept. Fruit-Grower, MERIDAN, MICHIGAN
If you live in Georgia send your order to G. L. Eubanks, Union City, Ga.

THE ROGUE RIVER VALLEY SOUTHERN OREGON is the ideal home spot of the Northwest, as well as the best fruit district on earth. No matter where you live, you will benefit by removal to this valley. Our "best buy" for June is a 20-acre orchard, one mile out, with ten acres bearing Newtown Pippins, with young pear tree fillers among the apples and in addition about 7 acres set to 3-year-old pears. About one acre strawberries. Price $12,500, half cash. Good terms on balance. Vested water right. No cost for maintenance. High school one mile away. Immune from frost. Nice crop of Newtowns in 1912.
ROGUE RIVER LAND COMPANY, 407 M. F. & H. Block, MEDFORD, OREGON
Ten Years in Business—Not One Dissatisfied Customer.

A fine commercial apple orchard in the Palouse country, 6 miles from Moscow, Idaho. Orchard nearly all bearing; house, barn, fruit house, tools. Will return 25 per cent on investment yearly. Part of the orchard that had sweepstakes car at Spokane last year. Price, $12,000. Address L. F. Henderson, Moscow, Idaho.

Valuable peach orchard for sale in the famous Ozark fruit belt. Arkansas, near county seat and railway shipping station. Farm has 190 acres, 70 acres in mature Elberta peach trees, numbering 9,000 trees; also 200 cherry trees and 75 apple trees; best orchard in the county. Trees thrifty and prospects for next year's crop never better. One full crop of this orchard would pay $18,000 to $20,000. Price $10,000. A remarkable bargain. For full particulars, address G. G. care Fruit-Grower.

For Sale or Exchange—For good farm, a $3,000 stock of good; clean merchandise, in an oil field; doing a $10,000 annual business; building of six rooms and large basement, $500; twelve miles to railroad. S. E. Ray, Fifteen, Ohio.

WHITMAN'S HAY PRESS
40 Years Standard of the World

New Model Steel Beauty ALL STEEL

Let us prove that our New Model is the Strongest, Most Durable, Most Economical and Simplest Hay Press in the World—does the best work—has greatest capacity—saves time, labor and trouble—contains exclusive feature found in no other press—with or without self-feed, pull back and hopper condenser—fully guaranteed—we make largest line of Hallers in the world. Write today for big free catalog.
WHITMAN AGRICULTURAL CO., 6995 S. Broadway, St. Louis

Publications on Bee Culture

The numbers listed below are but a sample of what we can supply in the line of booklets and books of more than ordinary interest.

The Bee Keeper and Fruit Grower. A 15-page booklet giving actual facts regarding the value of bees to fruit, and showing how bee keeping may be doubly profitable to the fruit grower. Fruit growers are realizing as never before the necessity of having honey bees in close proximity to their blossoming trees. Free.

Gleanings in Bee Culture. A semi-monthly magazine, the leading exponent of bee culture in this country. To new subscribers we will furnish it six months for 25 cents. Ask to have your subscription start with the March 15th issue, which is a special bees and fruit number and will give you some valuable facts about these two industries.

The A B C of Bee Culture. A complete textbook of over 600 pages. Fully illustrated and containing full information on every subject relating to this most fascinating industry. Price $1.50, postpaid.

Catalogue of Bee Keepers' Supplies. The 1912 edition is particularly interesting and attractive. It will tell you how best to make a start with bees and give prices on all equipment necessary. Will be mailed free on request.

The A. I. Root Company
Box 199 MEDINA, OHIO

STANDARD APPLE BARRELS

Several subscribers have asked us to publish the provisions of the Sulzer bill, which provides a standard size for apple barrels and also gives specifications of fruit which is to be branded according to the provisions of the bill. The essential provisions of the bill are as follows:

That the standard barrel for apples shall be of the following dimensions when measured without distention of its parts: Length of stave, 28½ inches; diameter of head, 17⅛ inches; distance between heads, 26 inches; circumference of bulge, 64 inches outside measudement, representing as nearly as possible 7,056 cubic inches.

That the standard grades for apples when packed in barrels which shall be shipped or delivered for shipment in interstate or foreign commerce, or which shall be sold or offered for sale within the District of Columbia or the territories of the United States shall be as follows: Apples of one variety, which are well-grown specimens, hand picked, of good color for the variety, normal shape, practically free from insect and fungous injury, bruises and other defects, except such as are necessarily caused in the operation of packing, or apples of one variety which are not more than 10 per centum below the foregoing specifications, shall be "U. S. Standard Size A," if the minimum size of the apples is two and one-half inches in transverse diameter; or "U. S. Standard Size B," if the minimum size of the apples is two and one-fourth inches in transverse diameter, or "U. S. Standard Size C," if the minimum size of the apples is two inches in transverse diameter.

That all barrels packed with apples shall be deemed to be below standard if the barrel bears any statement, design or device indicating that the barrel is a standard barrel of apples, as herein defined, and the capacity of the barrel is less than the capacity prescribed by section one of this act, unless the barrel shall be plainly marked on end and side with the words "Short barrel," or with words or figures showing the fractional relation which the actual capacity of the barrel bears to the capacity prescribed by section one of this act. The marking required by this paragraph shall be in block letters of size not less than seventy-two point block gothic.

That barrels packed with apples shall be deemed to be misbranded within the meaning of this act—

First. If the barrel bears anwy statement, design or device indicating that the apples contained therein are "U. S. Standard Size A," "U. S. Standard Size B," or "U. S. Standard Size C," as the case may be, and the apples do not conform to the requirements prescribed by section two of this act.

First. If the barrel bears any statement, design or device indicating that the apples contained therein are "U. S. Standard Size A," "U. S. Standard Size B," or "U. S. Standard Size C," as the case may be, and the barrel fails to bear also a statement of the name of the variety, the name of the locality where grown, and the name of the packer or the person by whose authority the apples were packed and the barrel marked.

That any person, firm or corporation, or association who shall pack or cause to be packed apples in barrels or who shall sell or offer for sale such barrels in violation of the provisions of this act shall be liable to a penalty of one dollar for each such barrel so sold or offered for sale, to be recovered at the suit of the United States in any court of the United States having jurisdiction.

This bill is very similar to the Lafean bill, which was before the last Congress, except that the Sulzer bill makes no reference to boxed apples nor to apple boxes. The opposition to the Lefean bill was largely from the territory where boxes are used as apple packages almost exclusively, and this new bill will not have any opposition from that quarter.

This new bill allows a margin of 10 per cent for defective fruit. Northwestern growers contended that this was too great; that the "A" grade should be apples practically perfect in every respect. At the same time, this new standard will be so far ahead of present methods of grading and packing apples in barrels that it will be a distinct advance. Of course, there are growers who pack fruit in barrels as carefully as the the Westerners pack in boxes—but they are in the minority. It would seem, therefore, that the new bill, if enacted into law, will be a good thing to encourage better grading and packing of apples.

Cutworms.

Tomatoes, cabbage, sweet potatoes and other vegetables and garden plants, and especially those which are started under glass and transplanted, are subject to serious injury by cutworms. They appear sometimes in great numbers in spring and early summer and frequently do severe injury before their ravages are noticed. The method of attack is to cut off the young plants at about the surface of the ground, and as these insects are of large size and voracious feeders they are capable of destroying many plants in a single night, frequently more than they can devour. During the past two years these insects, working generally throughout the United States, destroyed hundreds of thousands of dollars' worth of crops. By the timely application of remedies, however, it was demonstrated by the Department of Agriculture through field agents and others of the Bureau of Entomology engaged in the investigation of insects injurious to truck crops and sugar beets in some of the principal trucking regions, notably in tidewater Virginia, in southern Texas, in the vicinity of Rocky Ford, Colo., in southern California, in the vicinity of Sacramento, Cal., in Stark County, Ind., and in some other regions, that these insects can be readily controlled, large areas being successfully treated. The usual method of control is by the use of poisoned baits.

Take a bushel of dry bran, add one pound of arsenic or Paris green, and mix it thoroughly into a mash with eight gallons of water, in which has been stirred half a gallon of sorghum, or other cheap molasses. After the mash has stood several hours, scatter it in lumps of about the size of a marble over the fields where the injury is beginning to appear and about the bases of the plants set out. Apply late in the day so as to place the poison about the plants over night, which is the time when the cut worms are active. Apply a second time if necessary.

When cutworms occur in unusual abundance which happens locally, and sometimes generally, in some seasons, they exhaust their food supply and are driven to migrate to other fields. This they do, literally in armies, assuming what is called the army-worm habit. At such times it is necessary to treat them as we do army worms. While the methods which have been advised are valuable in such cases, these remedies may be too slow to destroy all the cutworms and we, therefore, have to employ other methods. These include trenching, ditching, the plowing of deep furrows in advance of the traveling cut worms to trap them, and the dragging of logs or brush through the furrows. If the trenches can be filled with water, the addition of a small quantity of kerosene so as to form a thin scum on the surface will prove fatal. In extreme cases barriers of fence boards are erected and the tops smeared with tar or other sticky substances to stop the cutworms as they attempt to crawl over.

Clean cultural methods and rotation of crops are advisable, as also fall plowing and disking. Many cutworms can be destroyed where it is possible to overflow the fields. This is particularly applicable where irrigation is practiced.

Silage As An Inter-Crop For Orchard.

James E. Philbrick, Gossville, N. H., says that in his young apple orchards he always plants ensilage corn and gets a heavy yield; ensilage is fed to stock and the manure is put back on the land and trees make a wonderfully vigorous growth. Mr. Philbrick says that he at first tried top-dressing the ground in the young orchard, but believes this is a mistake, for where soil receives a top-dressing the roots of trees come near to the surface to get the plant food; they are then in the way of the plow and in a very severe winter will be killed or injured by low temperatures. Now he trenches around his trees and puts the manure in the trenches, covering with a plow. This method induces roots to go down, and there is no tearing of the roots in plowing, nor is there any winter injury.

Mr. Philbrick believes in careful pruning of trees, and finds that by pinching off the new growth of twigs he can induce throwing out of fruit spurs farther back on the limb, and not on the tips merely.

"The Fruit-Grower is the best source of information I can find."—D. Kluttz, Virginia.

Get your neighbors to subscribe.

Books That Should Be in the Farm Library

Here is a list of the Best Books that can be obtained pertaining to Fruit Growing, Gardening, Poultry and Bee-Keeping. Each one is full of good, sound, practical information and written by a specialist. Each one is invaluable. No home is complete without good books. The successful farmer knows it is better to profit by reading and learning of successful methods others have used, than to learn by his own experience. The prices quoted are the very lowest, yet you may obtain any of them FREE.

HERE IS OUR OFFER

Any book listed at 50 cents sent free for securing 1 yearly subscription
Any book listed at 75c to $1 sent free for securing 2 yearly subscriptions
Any book listed at $1.50 sent free for securing 3 yearly subscriptions
Any book listed at $2.00 sent free for securing 4 yearly subscriptions
Any book listed at $2.50 sent free for securing 5 yearly subscriptions

These must be at our regular rate $1.00 a year

GARDENING

The Principles of Vegetable Gardening
By L. H. Bailey, $1.50
Treats of equipment and capital, making hot-beds, cold-frames, soil and its treatment; seeds; laying out and management of the garden. Discusses treatment of each kind of vegetable.

Vegetable Gardening
By Samuel B. Green, $1.00
A manual on growing of vegetables for home and the market. Well illustrated.

The Forcing Book
By L. H. Bailey, $1.25
The most complete treatise on the forcing of crops under glass during the winter. Discusses greenhouses, hotbeds, temperature, light requirements.

Bean Culture
By Glen C. Sevey, $0.50
A complete treatise on growing beans on a commercial scale. Treats of soils; seed selection; insects and diseases; harvesting methods.

Tomato Culture
By Will W. Tracy, $0.50
A complete treatise on tomato growing, soils for maximum crop; hot-beds and cold-frames; starting the plants; cultivating; staking; production for canning.

Home Vegetable Gardening
By F. F. Rockwell, $1.00
A book which tells what the average man wants to know in order to raise a successful crop of vegetables in his garden. A book that will answer every question and prove a reference of unfailing value.

Manual of Gardening
By L. H. Bailey, $2.00
A complete manual on planning and planting the flower, fruit and vegetable garden, and decorating the home grounds.

The Landscape Garden Book
By Grace Tabor, $2.00
This book shows just how to plan the home grounds; how to plant the trees so that they will give the most value in shade and beauty, how to group sbrubs, etc.

FRUIT GROWING

The Nursery Book
By L. H. Bailey, $1.50
A complete guide to the multiplication of plants. A standard work for nurserymen. Revised and enlarged.

Bush Fruits
By F. W. Card, $1.50
The purpose of this book is to furnish reliable descriptions of cultivated varieties and the necessary instructions on the cultivation of bush fruits.

American Fruit Culturist
By Thomas, $2.50
A standard work on fruit culleading varieties of cultivated fruit, together with principles of successful cultivation and marketing.

Systematic Pomology
By F. A. Waugh,$1.00
A volume presenting clearly and in detail the whole methods by which fruits are studied, giving a comprehensive treatment of the subject.

Popular Fruit Growing
By Samuel B. Green, $1.00
A thoroughly practical book treating on the factors of successful fruit-growing, orchard protection, insects injurious to fruit, fungous diseases and spraying.

Principles of Fruit Growing
By L. H. Bailey, $1.50
A complete treatise on the practice of fruit growing, comprising an inventory of fruits and a full discussion of the tillage, planting and fertilizing fruit lands and the protection of fruit plants from disease, frosts and other dangers.

Fruit Harvesting, Storing and Marketing
By F. A. Waugh, $1.00
A practical guide to the picking, storing, shipping and marketing of fruit, evaporating, canning, cold storage, fruit package laws, etc. Illustrated.

The Fruit-Growers Guide-Book
By E. H. Favor, $1.00
A guide to the cultivation of orchard fruits, giving methods of selecting location, soils, planting, varieties to use, packing, marketing, combatting diseases, etc.

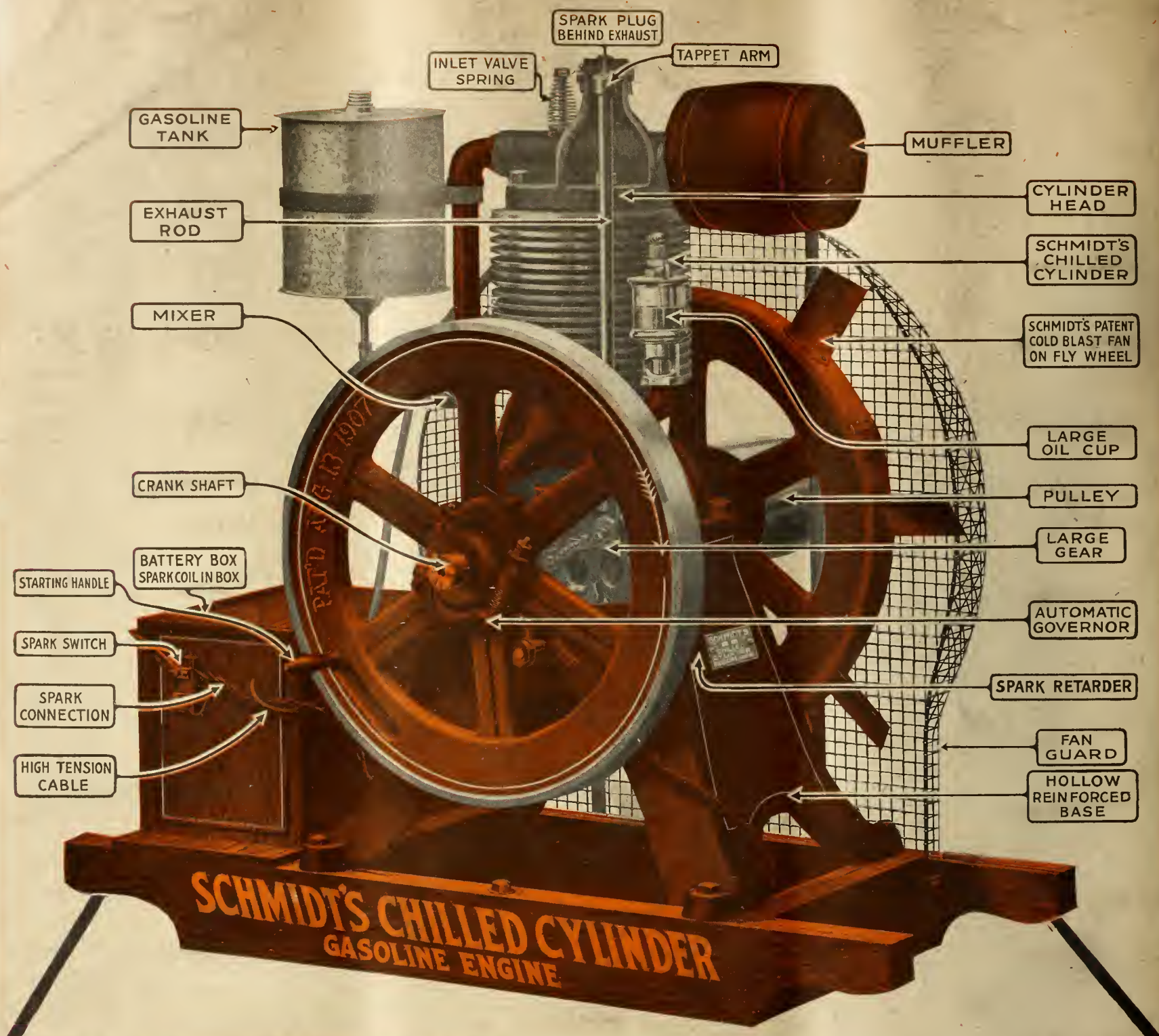
POULTRY

Duck Dollars	$1.00
Corning Egg-Book	$1.00
Turkey Secrets	$1.00
$100,000 a Year from Poultry	$1.00
The Million Egg Farm	$1.00
Poultry Secrets	$1.00
The Wyandottes	$1.00
Rhode Island Reds	.75
Poultry Houses and Fixtures.	.50
Plymouth Rocks	$1.00
The Leghorns—All Varieties.	$1.00
Ducks and Geese	.50
Eggs and Egg Farms	.50
Artifical Incubation and Brooding	.50
The Bantam Fowl	.50

BEES

ABC & XYZ of Bee Culture	$1.50
Advanced Bee Culture	$1.00
Cook's Manual of the Apiary.	$1.30
Doolittle's Queen Rearing	$1.05
How to Keep Bees (Anna B. Comstock	$1.20
The Bee People (Margaret W. Morley)	$1.60
The Honey Makers (Margaret W. Morley)	$1.60
Life of the Bee (Materlinck).	$1.50
The Townsend Bee Book (For Beginners and Experienced Bee Keepers)	.50
First Lessons in Bee-keeping Newman?Dadant. A valuable little volume for the beginner	.50

THE FRUIT-GROWER Book Dept. St. Joseph, Mo.



$7.50 And You Keep This Great Engine

Yes, sir, that's right—you keep this engine for $7.50, a wonderful gasoline engine offer, an offer without a parallel. We ship you Schmidt's Chilled Cylinder Gasoline Engine on your simple request without an order or any promise from you. You use the engine 10 entire days, use it all you want to. Then if you don't want it, send it back at our expense. If you do wish to keep it, pay us **ONLY $7.50 FOR THE 3 H. P. AND THE REST ON EASIEST MONTHLY PAYMENTS. WE SEND YOU THE ENGINE FREE,** to prove that it is the greatest labor saving and power producing engine on earth. Your choice of 1½ H. P., 3 H. P. and 7 H. P. engines. We want you to see for yourself that it is better than any other engine that costs twice and three times as much. The only engine with the marvelous, powerful **CHILLED CYLINDER.** The only engine for farm use with a **SPARK RETARDER.**—Schmidt's Chilled Cylinder Gasoline Engine that has revolutionized the gasoline engine industry.

10 Days Trial FREE

This is the first genuine free trial offered on gasoline engines for farm and shop use. We want you to see that women and children can run this engine. Use the engine to run any machinery you have—the pump—separator—washing machine—corn sheller—grinder—anything, and remember the engine is ready to run when you get it—complete and ready to run. Your daughter, wife or son can run this engine so easily you will be surprised and delighted. Send the free coupon and we will send you prepaid our sensational offer and our very useful book, "How to Use Power," free.

Free Catalog Coupon

Schmidt Bros. Co. Engine Works, Dept. 366X Davenport, Iowa

Gentlemen:—Please send me absolutely free, postpaid, your engine catalogs, wholesale price on easy payments, all information about your free trial offer on Schmidt's Chilled Cylinder Gasoline Engine, also a copy of your free book, "How to Use Power on the Farm or in the Shop," all free and postpaid.

NAME .....

ADDRESS .....

No Money Down

The only engine good enough to send out on **actual free trial** without a cent down in any way and then sold to you on easy payments if you want it. Let us tell you about the Chilled Cylinder and spark retarder. Write for catalogs and get wholesale price.

Easy Payments

If you like this engine after trying it out for ten whole days you can keep it and take long time to pay for it on **easy monthly payments.** If you decide that the Schmidt Chilled Cylinder Engine is the greatest engine on earth all you need send us is $7.50 after the free trial. If you don't want to keep the engine for any reason whatever after using it free for ten days, just send it back at our expense. Now put your name and address on the coupon and mail it to us or drop us a card, and we will send you all particulars of this stupendous offer free. Don't forget that when you send us your name you get the book "How to Use Power" also free.

5 Years Guarantee

Schmidt's Chilled Cylinder Gasoline Engine is absolutely guaranteed for 5 years in every piece and part. The biggest bank in Iowa backs our $1,000 challenge offer.

How to Use Power

To all those who write promptly to us, we will send our valuable and useful book "How to Use Power" free. Send us your name and address today and get this book.

Send Coupon

Get all particulars of this amazing offer before you think of buying any engine from anybody. Learn all about **this wonderful new type economy engine,** so easy to handle. Get our catalogs before you obligate yourself to anybody or make any decision. Learn about the wonderful Chilled Cylinder, learn how useful the engine will be to you and to the women folks on the farm. Learn how many things you can do with a chilled cylinder engine and how to save all dealers' profits for yourself. Send your name today. Fill out the coupon or drop us a postal card. Act quickly; write now.

Schmidt Bros. Co. Engine Works, Dept. 366X, Davenport, Iowa

34.63
WE

"The National Farm Magazine"

Vol. 23 No. 7 JULY, 1912

THE WESTERN FRUIT-GROWER

ST. JOSEPH, MISSOURI

Copyrighted, 1912, by The Fruit-Grower, St. Joseph, Mo.
Title Registered in U. S. Patent Office.

Ten Cents a Copy
One Dollar a Year

A Little View of Headquarters on Morrisania Ranch.

MORRISANIA

Has Good Fruit Crops Again This Year

Not a bud was injured by frost, and all fruit trees, from apricots and sweet cherries to winter apples, have set full crops. This is the regular thing for Morrisania, however, for only once in twenty years have fruit buds been hurt by late spring frosts.

Morrisania's freedom from frost injury is one of the strong points in favor of your buying here. One good fruit crop in a season when other districts have suffered from frost injury will more than pay for your land. And Morrisania has had many fruit crops when other districts have lost all their fruit. And don't forget that no orchard heaters have ever been used—or needed—at Morrisania.

Freedom from frost injury, however, is only one of the strong points in favor of Morrisania.

MORRISANIA HAS BEST OF SHIPPING FACILITIES

Located on main line of two railroads, Morrisania's shipping facilities are of the very best. The best shipping associations in the country are near at hand to handle all fruit crops, and our growers give little attention to the marketing end of the business.

IT'S EASY TO PROTECT MORRISANIA'S FRUITS AGAINST INSECTS

Morrisania is peculiarly located; there being no other bearing orchards near. If our growers use care in spraying their trees, two good sprayings will hold codling moth in check—and no other insects have to be fought, and no fungous diseases of any kind. We have no peach borers, no plum curculio, no San Jose scale at Morrisania.

MORRISANIA'S APPLES ARE OF HIGHEST QUALITY

They ripen when nights are frosty and have the snap and crispness of apples grown in Northern states. They are unexcelled for keeping qualities. Our Jonathans keep in our cellar until July, and Winesaps keep until apples come again.

IF YOU WANT HIGH-GRADE FRUIT LAND, SEE MORRISANIA NOW

Only a few tracts remain to be sold; they will be taken up quickly if those who want high-grade fruit land, or who need Colorado's wonderful climate for health's sake, will visit Morrisania. The place speaks for itself and will bear the closest inspection. Go see Morrisania for yourself. Low rates to Colorado points are now in effect, and you will enjoy the trip. For any additional information, address

Morrisania Land & Orchard Co., GRAND VALLEY, COLO., or Box 1277, St. Joseph, Missouri

THE WESTERN FRUIT-GROWER

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Volume 23 ST. JOSEPH, MISSOURI, JULY, 1912 Number 7

Spring was rather late in coming to us, but after it arrived it has forced the spring work more than usual. All crops have long been planted and are now doing splendidly. The orchards have all had one good spraying and the second is being applied. Irrigation of the fields now occupies much attention, while the poultry, hogs and the garden have not been overlooked, as the prospects are for as large a crop from this source as from the apple orchards.

Our Spraying Operation.

As was mentioned in these notes last month, the very cool weather held back the crops of all sorts to an unusual lateness, and the first spraying was not begun until May 27th, or sixteen days later than last year. The same spraying plan was followed at the first spraying this year as was so successfully used last season, and the present indications are that the results will be equally satisfactory. Out of several hundred apples which have been cut open and examined for the young worms of the codling moth, only one has so far been found to contain a live worm. There is plenty of time still for the worms to appear, yet from the thoroughness with which the first application was made, the chances are that not many apples at harvest will contain worms of the first brood.

Here at Morrisania Ranch we use three power sprayers, only one of which is equipped with a tower, and each machine of a different make. The experience of previous years is repeated again that where more than one machine is needed there is an advantage in having them of the same style and make. As it is, we must keep a supply of the several grades of packing and repair parts for each machine, whereas if the sprayers were all of the same kind, so that the parts would be interchangeable the expense of maintenance would be materially lessened.

A tower is another feature of a sprayer which cannot be dispensed with where thorough spraying is done. In making the first application this year, the foliage had not developed to such an extent that the clusters of flowers in all parts of the tree could not be easily seen, and our workmen were very careful to see that a dose of the poison was put into each cluster. This was accomplished without much inconvenience with even those machines not provided with a tower. But as we are making the second spraying, the foliage has become thick and heavy and it is almost impossible to reach the high limbs in the center of our trees. On this account we are having our one machine with a tower go over the orchard and "touch up" the centers of all the trees so as to avoid the possibility of missing these apples in the high tops. We are doing this on the theory that every apple not sprayed this time is doomed to be a wormy apple.

A Mistake.

We found in our spraying experience where we made a very serious mistake last winter when trees were being pruned. In the oldest orchard at Morrisania are a lot of trees of miscellaneous varieties of apples, including a lot of summer varieties. When the orchard was pruned last winter we left most of these trees unpruned, for Morrisania is hardly the place to grow summer apples profitably, unless enough trees are planted to furnish carlots of fruit. We thought that by not pruning these trees, which are not profitable, we would save money, but we now believe we made a mistake.

When we came to spray these trees —and of course they all had to be sprayed—we found that it was almost impossible to do a good job of spraying, because of the dense growth of wood in the center of the trees. Because of this condition, we feel sure there will be more worms in these trees than should have been, notwithstanding we put more mixture on the trees and more time was consumed in doing the work.

From our experience, we are convinced that if one would grow high-grade fruit in an orchard which contains trees of worthless varieties, the latter should be pruned just as carefully as the profitable trees, or they should be cut down. The extra time and materials required in spraying these unpruned trees would have more than paid for the pruning the trees needed.

Shade Crop Doing Only Fairly Well.

The alfalfa which was planted in the orchard as a shade crop is doing only fairly well. Had it not been so badly damaged by the teams and sprayers when the first spraying was done the stand would be heavier, but on account of the plants being small at that time and the ground being dry, the little plants suffered materially. However, there are enough remaining to make a reasonably good stand over practically the whole orchard. The alfalfa was planted with oats as a nurse crop, and the seed drilled only one way, the spaces between the trees being broadcasted. In this way it is impossible to do any cultivation whatever until the alfalfa is plowed under in the fall of 1913. What seems to me now as being a better method of planting to alfalfa is to either delay the seeding until all of the spraying has been finished, or else seed the alfalfa in rather wide rows, say about four drills wide, leaving space between these rows or beds to cultivate with a one-horse cultivator.

Summer Pruning.

Most of the trees in the bearing orchards at Morrisania Ranch were pruned rather heavily the past spring, and on this account a vigorous crop of water sprouts are appearing. Should these be left to grow throughout the entire summer the trees would be such a mass of foliage before harvest that the fruit would receive but little sunlight and consequently be but lightly colored if colored at all. A water spout is not a harmful thing but merely an indication of good vigor in an otherwise healthy tree and serves as an outlet for the food material sent up by the roots. Where trees are mutilated, as in cases of heavy pruning, there is always a big crop of these sprouts. Most of them appear in the scars which have been left where twigs or sprouts were removed years before and are the outgrowth of buds, or rather bud tissue which has remained in an embryonic and dormant condition within the bark. This is one of nature's provisions for the reformation of the top of the tree in case of necessity, and at the base of every shoot or twig, in what is really the axils of the bud scales of the bud which formed the shoot there is to be found this embryonic tissue which in time may develop into a new branch, we call a "watersprout." But there is also to be found sprouts coming out of the bark at places where there is no evident trace of a former twig or even leaf. These sprouts come out at unexpected places and are purely adventitions in their origin; that is, they are formed from embryonic tissue within the bark which has formed spontaneously.

But whatever the origin of these sprouts, they are of considerable annoyance in a bearing tree and must have attention. In our case, if these sprouts were left to grow in their own way during the summer, we should have far more pruning to do next spring than we had this past year in order to avoid that possibility, and to eliminate the shading which these sprouts would make this summer, we are rubbing them off now. They are very soft and tender now, and to rub the hand over a branch now, destroys them and does away with them more quickly and far better than could be done next spring with the pruning shears. Besides it allows the nourishment which would have gone for their development to be directed into the desirable branches and the fruit spurs in other parts of the trees.

BLACK TWIG TREES IN BLOOM AT MORRISANIA.

Side Crops Doing Well.

The pig crop at Morrisania Ranch has continued to enlarge, until we now have about 130 thrifty little fellows of this spring's farrowing. While we are not strictly in the hog business, we find a decided advantage in having a good supply of our own meat-producing animals. Hard working farm hands require a large amount of meat, and with such a force as we maintain throughout the summer, and particularly at packing time, it takes a good supply of pork and beef to fill the demand. These hogs which we now have are grade animals, but they are exceedingly thrifty and serve as the most economical method of disposing of certain of our crops. For instance, instead of planting apple trees directly into newly cleared sage brush land, we plant bald barley the first year. The hogs are fed the barley,and the land is put in far better condition for receiving the trees the following spring. This year we have a considerable acreage of this grain, together with some oats and corn that will be used exclusively in feeding our hogs and other live stock.

Garden Stuff Very Late.

The garden vegetables of all kinds have done exceedingly well, considering the unusually cold weather which followed the seed planting. But some crops have had rather trying experiences not only because of the cold and snow of the early season, but because of the insects which have followed. Cutworms have been found in immense quantities, and caused a loss of much of the cucurbits that sprouted. Flea beetles have also been very numerous and it has taken careful watching to keep ahead of these pests. As soon as their work became evident, our gardener, Mr. Buteyn, prepared poisons which disposed of considerable damage which would otherwise have come. The flea beetles have really been more annoying than the cutworms, and they damaged a number of tomato plants before their presence was discovered. The tomatoes were promptly sprayed heavily with lead arsenate and this put a stop to the flea beetle depredations to that particular crop.

Several persons have mentioned the difficulties they have had in trans-

ROME BEAUTY TREES LOOKED LIKE HUGE BOUQUETS.

planting such vegetables as cucumbers, cantaloups, squash, watermelons, etc. Each of these vegetables have been successfully transplanted here this spring, and the plants are growing thriftily. How their production will compare with those not transplanted remains to be seen. The seed for these plants were sown in tin cans and boxes in the hotbed, and have been carried along until they have made one or two true leaves and the weather warmed up sufficiently for setting them in the open. The cans were then taken to the field, the soil knocked out without disturbing the roots any more than possible, and then set in their permanent position and watered. They have transplanted as easily as cabbage or tomatoes.

Paper Packages for Fruits.

The article in the May issue of The Fruit-Grower asking for opinion of our readers of the value of packages made of corrugated paper for handling fruits, has awakened much interest among those interested in fruit packages.

D. Breitenstein, secretary of the Missoula (Mont.) Chamber of Commerce, writes as follows:

"The article in the May issue of The Fruit-Grower regarding a new apple package was read with much interest. Last fall the Missoula Chamber of Commerce had a large exhibit of fruits at the land show in New York and also at the land show in St. Paul. At these exhibitions, through the courtesy of the Hinde & Dauch Paper Company, Sandusky, Ohio, we secured several thousand corrugated paper boxes of different dimensions, and used them as apple packages. We made all our experiments with packages holding less than a bushel, and we believe this form of package for small quantities of apples will be quite an advantage.

"For instance, at our apple shows we had packages that would hold from a dozen apples upwards. These apples were in many cases donated to visitors, which gave them an opportunity to test the flavor of our McIntosh apples. These containers also made splendid packages for express shipments. We made a specialty of putting up in these boxes twelve, eighteen, twenty-four and thirty-six apples. Some of these packages were shipped to foreign countries, and our reports are that the apples arrived in splendid condition.

"While experience has not taught us whether it is advisable to use bushel boxes, we believe that for a fruit grower or dealer who would care to make a specialty of fancy apples in small packages, this would be an excellent way to put up their fruit. The large orchard companies here use thousands of these boxes in sending sample apples to their customers all over the United States."

W. A. Irvin, Springfield, Mo., has also used these packages in an experimental way, and he makes the following report:

"I used the corrugated paper boxes to a limited extent during last season, with rather poor success, as the fruit-stand man and grocer fought them to a standstill. However, I believe that when we get parcels post, the consumer can be reached direct, and his apples delivered in these boxes. I packed these paper boxes in a wooden box, the latter being 11x11½x18½ inches. Four of the cartons held twelve apples each and three held sixteen fancy apples each. These packages retailed at from 25 cents to 35 cents each, with a discount of 25 per cent to the retailer. I would not use these paper packages without a wooden protector, for dampness affects the paper unfavorably."

This is the kind of reports we want. Mr. Irvin's suggestion that these packages be used in reaching the consumer direct is a good one, and a very practical one, when we get parcels post. Another argument for working for this measure. Perhaps the reason the fruit dealers were opposed to his package is that the commission to the retailers amounted only to 25 per cent. A lot of them are not satisfied with this profit in the conduct of their business, and their opposition in this case may not have been directed toward the package as much as against the commission allowed.

Canning Suggestions.

The greatest objection most of us have against putting up home-made fruits in the summertime, is the length of time that must be spent in a hot kitchen, just at the time of year when one longs most for the cool of the veranda.

A celebrated Frenchman has been making experiments in canning, on the theory that longer exposure to a very much lower temperature will accomplish the same results as a short, rapid boiling. I do not think he has yet given the housekeeper any practical results, but here is a new method of canning along the same lines, that, is tested, tried and true—and almost too good to believe. It will work with every kind of berry and also with peaches. The harder fruits, like pears and quinces cannot be canned by this method.

The fruit is canned, absolutely without any boiling, and the best of it is that your jar of strawberries, for instance, which, in ordinary canning has a detestable habit of shrivelling and losing its color, under this method comes out with plump, red berries, full measure and delicious in flavor.

Fill your jars—any kind will do, the old screw-tops or the most modern alike—with fine, fresh berries, shaking them well, so as to fill the jars very solidly with fruit. You can do this on the veranda. You will need the kitchen stove just long enough to heat several kettles of water to the boiling point. Make a syrup, any sweetness you usually use. A cup of water to a cup of sugar is good, but it need not be so sweet as this. Put the syrup on to boil. Try to estimate about how much you will probably need for the number of jars you have filled with fruit, but be sure to have enough. If you have any left over you can put it in a jar and treat it the same as the fruit and save it for your next canning.

Pour about an inch of warm water in a large shallow baking pan. Set the jars full of fruit in the pan and place in the oven a few minutes, while the syrup comes to a good boil. The jars should be warmed through just enough so as not to be in danger of cracking when you pour the boiling syrup over the fruit.

Fill the jars brim full with the hot syrup and seal up tightly, just as if you were all through your canning.

Put a couple of hot, wet towels in the bottom of the wash boiler. You are not going to cook the fruit, so do not put the boiler on the stove. Set it in any convenient place in the kitchen or the back porch. Place the jars on the hot towels. They are not going to rattle against each other, as in ordinary wash-boiler canning, so you may set them quite close together.

Now pour a kettleful of boiling water into the wash boiler, letting the water flow in against the metal side of the boiler, rather than directly on the glass jars. Add boiling water until the jars are covered and there is at least two inches of water over the tops. If the boiler is fairly full of jars, let the water stand three or four inches over the tops. The more jars there are, the less water it takes to cover them.

Adjust the cover of the wash boiler carefully, then throw an old quilt or blanket over the boiler and go back to your cool veranda. Your canning is done.

Leave the boiler undisturbed for twenty-four hours and then remove the jars. Tighten covers of screw tops, if necessary. If you have a leaky jar, due to a defective cover or rubber, you will have to boil the fruit in the ordinary way to save it, but unless the jars are defective, the canning will be perfect. The fruit will keep perfectly and will look and taste better than by any other method. I saw dozens of jars of fruit, canned by this method, shipped from New York to Georgia last winter, without spoiling a jar, even under this rather rough treatment. ROSE LOMBARD.

Georgia.

You asked in The Fruit-Grower for May that anyone who had used a home canner write and tell about it, so I will tell you about mine. There were always a few vegetables going to waste in my garden; more would ripen at one time than the family could eat, but not enough to stop a team from work and send it to town.

I could can fruit in glass jars, but I never had much success with vegetables in glass. I did not like to see things going to waste, when I knew we would need to buy vegetables in winter, so I got a little canner that fits on my cook stove and does not take up much room. It holds six three-pound cans, and I also got 300 cans, the solder and directions for using came with them. I followed directions carefully, and never lost a can, and at the end of the year I had 300 cans of the best fruit and vegetables we ever ate. The vegetables were as good as fresh ones. They did not taste like the canned vegetables you buy out of the store.

I put up peas, spinach, beets, string beans, tomatoes, corn, okra, eggplant, sweet potatoes, pumpkin and a mixture of corn tomato and okra that is fine for soups. The work was not hard and I did not need to have any help, as I only put up a few cans at a time.

When I was preparing vegetables for dinner, it did not take much longer to fill six cans and they would cook while the dinner was cooking. It was only the work of a few minutes to solder them. Some of the children are always glad to help solder the cans. I find it much less work to can fruit in the tin cans than in the glass jars, as I can sit on the porch in a cool place, peel the fruit and fill the cans, for none of the fruit has to be heated before it goes in the cans.

MRS. ELLA EASTERLING.

Arkansas.

Subscription expired? Don't miss big special issues. Renew today.

OUTDOOR LIFE

Will Not Offset the Ill Effects of Coffee and Tea When One Cannot Digest Them.

A farmer says:

"For ten years or more I suffered from dyspepsia and stomach trouble, caused by the use of coffee (Tea contains caffeine, the same drug found in coffee), until I got so bad I had to give up coffee entirely and almost give up eating. There were times when I could eat only boiled milk and bread; and when I went to the field to work I had to take some bread and butter along to give me strength.

"I doctored steady and took almost everything I could get for my stomach in the way of medicine, but if I got any better it only lasted a little while. I was almost a walking skeleton.

"One day I read an ad for Postum and told my wife I would try it, and as to the following facts I will make affidavit before any judge:

"I quit coffee entirely and used Postum in its place. I have regained my health entirely and can eat anything that is cooked to eat. I have increased in weight until now I weigh more than I ever did. I have not taken any medicine for my stomach since I began using Postum.

"My family would stick to coffee at first, but they saw the effects it had on me and when they were feeling bad they began to use Postum, one at a time, until now we all use Postum." Name given by Postum Co., Battle Creek, Mich.

Ten days' trial of Postum in place of coffee proves the truth, an easy and pleasant way.

Read the little book, "The Road to Wellville," in pkgs. "There's a reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true and full of human interest.

A. A. MYERS SPRAY PUMPS

ALL KINDS NOZZLES, FITTINGS, ETC.

We manufacture Spray Pumps for every need, from the small hand and bucket pumps to the large power outfits. Send for catalogue and prices of Pumps, Hay Tools and Barn Door Hangers

F. E. MYERS & BRO.,
160 ORANGE ST., ASHLAND, OHIO

In writing advertisers please mention The Fruit-Grower.

The CLEANEST CUT—BRIGHT, ATTRACTIVE—OUR

Western Soft Pine FRUIT BOXES

DON'T SPLIT, LIGHT, STRONG—Nail easy. Send on post card your name, address, kind and quantity wanted. Then we will send you sample of wood and prices, your station.

Washington Mill Company
SPOKANE, WASHINGTON

Apple Boxes

THE WESTERN WHITE PINE BOX the high-class package for apples. Growers: This box lumber doesn't warp in sun, rain or in cold storage. Provide for wants early to meet the large apple crop. Address

California Pine Box & Lumber Co.
San Francisco, California
GINOCCHIO-JONES FRUIT CO.,
Agents for Missouri. Kansas City, Mo.

Apple Boxes

Cabbage Crates and all kinds of Packing Boxes. Corrugated paper Pads for Barrels

INMAN BOX COMPANY
201 Delaware KANSAS CITY, MO.

KEES FRUIT PICKER

GATHERS APPLES, PEACHES, ETC. as carefully as by hand with less work. Saves climbing ladder. No fruit out of reach. No wires to injure fruit or tangle in branches. Fruit drops into cloth bag, which can be filled before lowering. Price complete, except long handle (a fish pole will do), 75c. postage paid. Your money back if not O. K. Circular sent on request. Address Box 425.

F. D. KEES MFG. CO. BEATRICE NEBRASKA.

MONARCH CIDER HYDRAULIC PRESS

Proved capacity, great strength, all sizes. Write for FREE catalog today.

Also Gasoline and Steam Engines, Threshers, Saw Mills. Get our prices.

MONARCH MCHY. CO., 642 Hudson Terminal, New York

Do You Want a Home in the

Beautiful Ozarks

of Missouri, in the Famous Strawberry Land

Apples, Peaches, Pears, Grapes, Raspberries, etc., all grow excellently. Ideal location for the dairy and poultry business. We offer for sale 60,000 acres of land in 40-acre tracts or more, cheap and on easy terms. Located in Stone and McDonald counties. For further information address

McDonald Land & Mining Company
Rooms 301-2 Miner's Bank Building
Joseph C. Watkins, Mgr., JOPLIN, MO.

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. Hanson & Son, Hart, Mich.

MAKE MONEY IN BEANS

With Proper Cultural Methods Beans Could Be Made a Paying Crop in Nearly Every State

Beans—Yes, Beans!

It is time that the American farmers woke up to their importance as a profit-bringing special crop. We used to hear in days gone by, the expression that a certain soil was so unproductive that it "wouldn't grow white beans." In fact, beans were more or less despised and passed over for other crops. But the farmer who has studied his market page of late has begun to take notice on the bean question.

Beans are steadily growing in popularity. More people are eating them every year. Food manufacturers are spending literally millions of dollars to educate people to the delicious, wholesome quality of baked beans, as a dish for everyone.

The question right now is whether the farmers of America are going to allow a big proportion of the handsome profit that beans are bringing to go to European importers—or are they going to rightfully claim them as their own.

The answer is: Grow more beans! Home beans are invariably preferred.

But every year the domestic production is far short of supplying the home demand. This domestic crop is around 8,000,000 bushels annually. It should be at least 10 to 12,000,000.

The prices have gone up amazingly in recent years. With hand-picked beans bringing $2.60 a bushel, the prospect of $3.00 beans is exceedingly favorable. Pretty fair profit from land that's "only good enough to grow white beans."

It is a mistake to believe that beans can only be grown profitably in the states which are now producing the greater portion of the crop—New York, Michigan and Californiaa. Hundreds of thousands of bushels of beans are grown in Maine, Wisconsin, Ohio, Pennsylvania, Iowa—in fact, the successful production extends as far south as Florida. There are also heavy bean-producing sections in Vermont, Illinois, Indiana and Minnesota. In fact, beans can be grown and matured successfully in all Northern latitudes, and many southern states have demonstrated successful bean-growing soil.

Authorities tell us that any soil that will grow wheat and corn is adapted to the profitable production of beans. Experiments have proved that beans yield better on old land than on new. An inverted clover soil is ideal for beans.

A common rotation for large bean-growing sections is clover, beans, wheat. Bean experts recommend deep plowing—not less than six inches—to prepare the soil for beans. As to planting time, it is a wise rule to wait till the soil is thoroughly warmed; cold ground is death to the success of a good bean.

The planting time recommended by the most successful bean growers of New York and Michigan is between June 5th and June 20th. This time, of course, depends entirely upon geographical location, and the condition of the ground.

The object to be kept constantly in mind is to plant the seed at such a time as will enable the plants to start growing quickly, and to keep growing until they reach maturity, without suffering a setback. With such a crop as beans, there is nothing gained by hurrying to get the seed in the ground in the spring. Planting too early makes a poor stand and uneven ripening of the dry beans.

Planting in drills gives better satisfaction than in hills, and particularly where the crop is used in an orchard. The drills are made from two to three feet apart with the seed dropped from four to six inches apart in the row, depending on the variety that is grown. The amount of seed needed per acre varies slightly, running from two pecks to one and one-half bushels per acre. Seeding too heavily makes a heavy stand of plants, with a smaller proportion of beans than where the seeding was less.

Planting is, of course, done in the same manner as all other field crops; that is, by means of drills, and cultivation kept up during the season, not only to keep down the weeds, but to warm the soil, liberate plant food and conserve the soil moisture. On account of the intensive culture which is needed, this crop is most excellent for planting in the young orchard, or in old orchards, which have the trees wide enough apart to allow intercropping. Since the bean is a legume it takes nitrogen from the air and adds it to the soil, making the soil richer and better in just the same way that clover or alfalfa does. Then, too, in many of the lighter soils, an application of commercial fertilizer is frequently necessary to promote the best development of the beans, and this in turn is helpful to the trees.

BEANS BETWEEN TREES IN THE PEAR ORCHARD OF MR. H. SPITZBERGGEN, MICHIGAN

As a crop for the young orchard beans come as near being the ideal as anything that can be grown. They have not the disadvantage of corn, in that they do not shade the trees, and they do have the advantage over many other kinds of crops, since they add nitrogen to the soil, making it richer in that valuable element. Then the grower has the choice of such a wide assortment. There are white beans, black beans, red beans and speckled beans, round or flat, big or little, and all with plants which are either bush or climbing.

For field planting the bush beans are more desirable, and particularly where the crop is grown in the orchard. The pole or climbing beans are more of a garden crop than a field crop, when grown for any other purpose than as seed for planting.

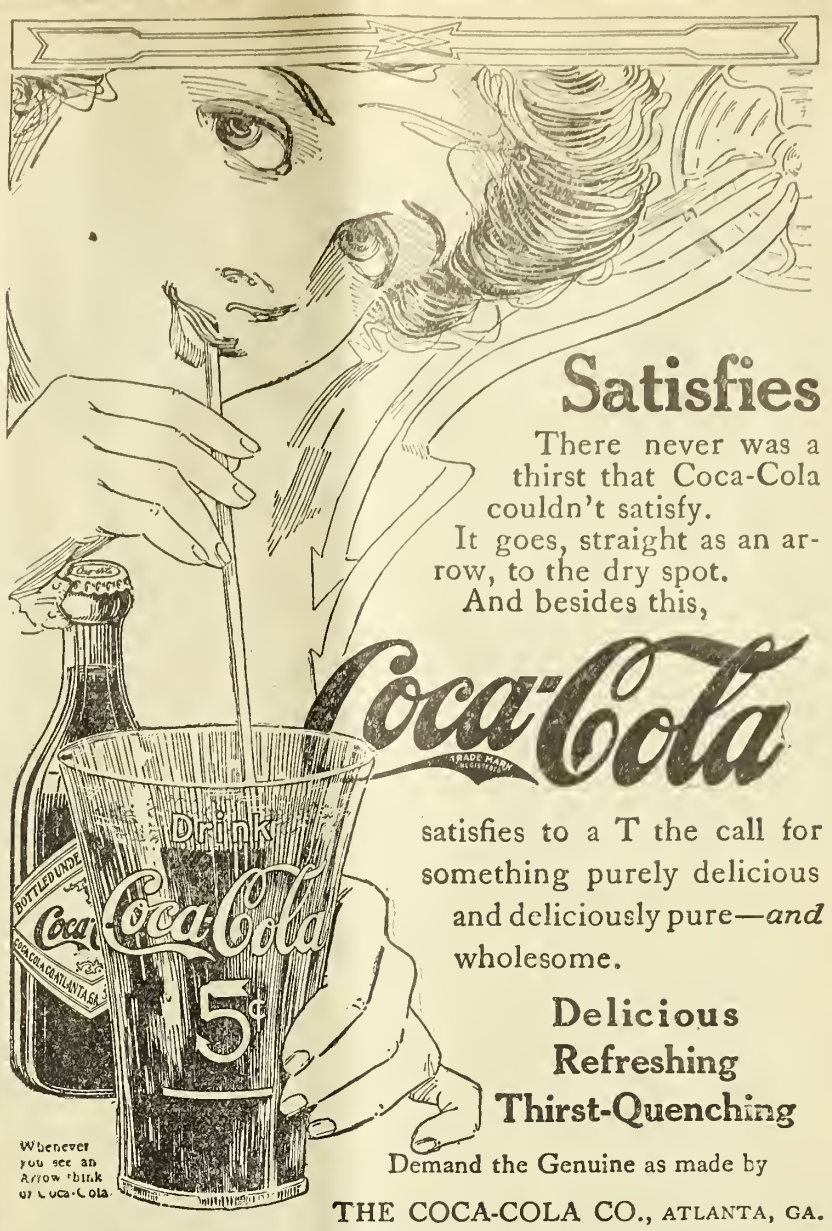
As a field crop beans are harvested by a special machine, a sort of digger, which cuts the plants off just beneath the surface of the soil. These "pullers," as they are called, take two rows at a time, and the plants are thrown into windrows of two, three or four rows, either with a pitchfork or with a side delivery rake. Here they are allowed to lay. Following the digger, men must pass with pitchforks and shake the plants free from the soil, which would discolor the beans in case they should get wet before being threshed. The discoloration of the dry beans materially reduced their selling value, and every precaution is taken to keep the seeds bright.

In large operations time and labor is saved in this part of the harvesting work, by using a side delivery rake for gathering the plants into windrows, and also by the use of a hay loader for stacking the vines on the wagons which haul to the thresher. The threshing is done with the flail, by treading out with horses or with a modern threshing machine. An ordinary grain separator can be generally modified so as to shell beans, by making a few changes in the concaves.

One of the greatest difficulties in handling such a crop as beans on a large scale is to get the plants properly dried for threshing. This must be done as quickly as possible, so as to avoid the discoloration of the beans which, in the case of white varieties, takes place very easily. They must first be shaken free from the soil when gathered by the puller and stacked in loose windrows. In dry weather it is easy enough to get the vines to cure properly, but in wet, muggy weather, drying is a difficult job and sometimes necessitates handling the straw several times in order to get it to dry sufficiently for threshing. In addition to this comes the diseases and insects which affect the plants, pods and seeds These are annoying enough, but are generally easy enough to control to make the bean crop one well worth growing and one which should be far more generally used than it is at the present time.

Order fruit packages early, for there is going to be a great scarcity in some lines. This is especially true of barrels and bushel baskets for peaches. Southern floods destroyed a lot of material from which these packages are made.

Ask your neighbors to subscribe for The Fruit-Grower.



Satisfies

There never was a thirst that Coca-Cola couldn't satisfy.
It goes, straight as an arrow, to the dry spot.
And besides this,

Coca-Cola

satisfies to a T the call for something purely delicious and deliciously pure—*and* wholesome.

Delicious
Refreshing
Thirst-Quenching

Demand the Genuine as made by
THE COCA-COLA CO., ATLANTA, GA.

Free Our new booklet, telling of Coca-Cola vindication at Chattanooga, for the asking. 3-J

ANSBACHER'S

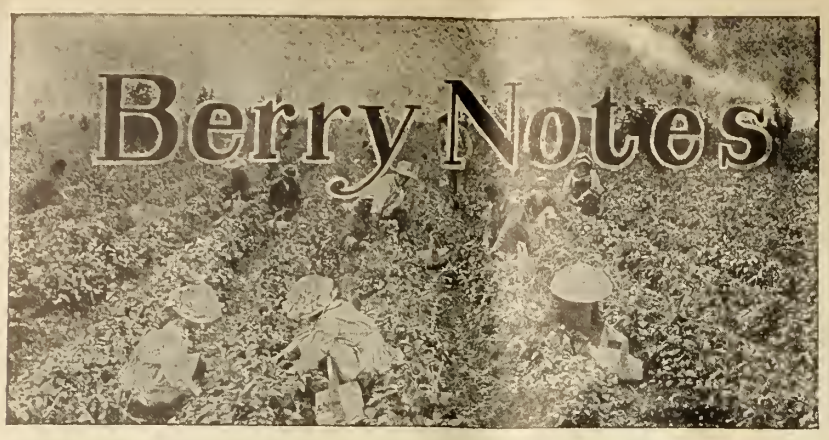
"Triangle" Brand

ARSENATE OF LEAD PASTE

is over 99% Pure!
Free from All Grit!
Greatest Ease in Mixing and Spraying!
Covers, Adheres to and Protects all that it touches!
Kills Pests Before They Damage Fruit or Foliage!
Dealers in all districts and
A. B. ANSBACHER & CO.
NEW YORK CITY
Write at once for our free booklet
"The Science of Spraying"
525 Fifth Ave. NEW YORK

Rubber Stamps You need Rubber Stamps for marking berry boxes, crates, stationery, etc. Send for free catalogue.
Gardner Office Supply Co. SPPINGFIELD MISSOURI

PEACH SEEDS FOR SALE
1911 AND 1912 STOCK. Write for Prices and Samples.
THOS. R. HAMAN, 1514 Oliver Sreet, Baltimore, Md.



The Himalaya blackberry finds an advocate in the June Fruit-Grower from Texas, but a fruit grower of that state writes me that it is worthless with him. Yet the fact that there are three varieties of it and only one claimed to be hardy—the Giant—complicates matters. But it seems there is another point of attack, even when hardiness has been admitted. The Texas advocate says the berry is "over half an inch in size," presumably the longest way, which is conceding that it is inferior in that respect. J. T., in the May issue, is quite eulogistic in tone, but, dwelling on the question of hardiness, avoids any specific statements as to the character of the fruit. He referred to Professor Eustace of the Michigan Agricultural College as a close observer of the Himalaya, of having photographs of "vines in every stage of development," and as having stated that "the Giant Himalaya is beyond doubt the hardiest cane berry available for commercial purposes in the United States." The inference of readers would naturally be that Professor Eustice enter-

earliness, its productiveness and length of season, extending far into the period of the late kinds. It is often possible to pick a gallon of this sort without moving from your tracks. It is vigorous, with an excellent manner of lateral growth and though complaint is made of its damage by rust, I am constrained to believe that this is largely due to lack of fertility and cultivation. Coming ahead of all others of its class, the Harvest is always in great demand at good prices, selling here at never less than 10c per quart box for the first week or so. Later on when the larger kinds come in, the Harvest's still abundant yields may be used to supply the canning trade while the big berries go best at retail. Were I restricted to one blackberry, it would certainly be the Harvest.

In a recent letter, T. B. Bundy, who never tires of praising the Robinson, admits that it winter-killed with him, but I agree with him that it is worth planting anyhow, for such a winter only comes once in ten years or so. I

EARLY KING BLACK BERRY, OUR BEST SECOND EARLY VARIETY.

tains a very high opinion of the Himalaya. I therefore wrote to that gentleman asking his opinion of the commercial value of this berry and here is his reply:

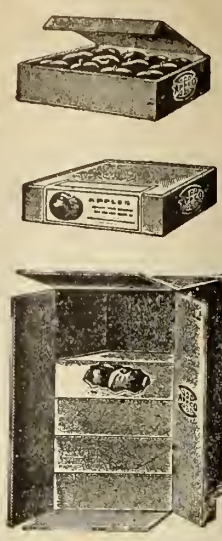
"The Himalaya blackberry was hardy with us last winter and that was a very severe winter. I have not seen the plant in the gardens of the man who is sending it out this spring, but I did last spring, and it appeared to stand the winter successfully, although that was not a hard winter. The bush is certainly very vigorous, but when I saw the fruit last July I was disappointed in it. None of it was much more than nubbins, and I could not see that it had any commercial value at all."

It may be that the Himalaya is successful on the Pacific coast, and it may be that it is worth growing in the South, but so far as the rest of the country is concerned, I have so far failed to find any evidence that it is of value. It would certainly be most imprudent to plant this berry in any number with the expectation of large profits.

The Early Harvest blackberry is now ripening this 15th of June, and as usual, is well laden. This is undoubtedly the most valuable of all known varieties when we consider its

notice my Robinsons that were killed down have sent out quite a number of fruit stalks from the few inches of old wood next to the ground that survived. My one vine of Sorsby's May was hardy, but its berries, while showing color, are not as early as those of the Harvest. The McDonald withstood the winter very well and again proves as early as the Harvest, its first berries coloring even ahead of that variety, but it again shows the effects of want of pollination. Its perfect berries are as large as the largest dewberries. My spring setting of it is growing nicely and being set with pollenizers will show conclusively next year its value here. I have great hopes of the McDonald. If it can be made productive here, it would be hard to estimate its value. The Kenoyer, too, would be worth having, but its berries are nothing but nubbins. The Wilson shows the same weakness, though not to the same degree. The new Watts has taken the rust in two widely separated plantings, thereby confirming what a Kansas correspondent said of it. It looks like it might be as susceptible as the Kittatinny without all the good qualities of the latter. The King, the best second early, though injured some by the winter, is showing its usual fine, large sweet berries that can be sold on the market for dewberries. The picture shows their characteristics

I note that the same firm that is booming the Himalaya blackberry with all sorts of extravagant statements, such as recording sales of $54 worth of berries from two plants, is also lauding in the same kind of terms the Superlative raspberry. They speak of having imported it in 1907, as if that were its first trial in this country. As a matter of fact, the Superlative has been listed by certain Eastern nurseries for many years, and the reason why it is no better known is because it has failed to succeed in this country. It is indeed probably a finer berry in France and England than anything we can show here, but it has failed to take kindly to our soil and climate and has therefore made no progress all these years in popular favor. I bought plants for trial on two occasions some years ago and they were too weak and sickly in growth to be of any value. It is possible that in certain locations and under high culture it may be worth raising, but it did not prove so here, and I advise readers of The Fruit-Grower not to be lured in parting with good money for this variety. If you must try it, confine your experi-



APPCO Shipsafe
Standard Apple Packing

No. 1. The APPCO Dozen Box ready to close.
No. 2. Closed and Sealed with grower's label.
No. 3. To Ship—six 1-doz. boxes are enclosed in an Appco Shipsafe.

NO REFRIGERATION against cold should be necessary. No bruising or marking of any kind.
LOWEST FREIGHT RATE. Approved by the Interstate Commerce Commission.
Write for "Fruit Bulletin" for prices and particulars on how to protect your fruit.
Appco Corrugated Caps for barrels, 14 to 16½ inches. Per 1,000, - - - - - - - - - - $7.00
Appco Corrugated Box Lining, for any size box. Per 1,000, - - - - - - - - - - - 6.00

APPCO CAPS are better. SAMPLE sent on request.

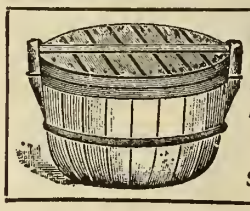
American Paper Products Co.,
251 Bremen Avenue, St. Louis, Mo.

THE IDEAL
Corrugated Paper
CUSHION
For Packing Apples

Absorbs the shocks in travel, and apples are delivered unbruised and as round and solid as the day they were packed. These add a tone of distinction, and cleanliness to any shipper's product, and the cost is so proportionately low that it will pay packers to investigate by simply sending for our catalogue and price list.

THE HINDE & DAUCH PAPER COMPANY
Department "3" SANDUSKY, OHIO

Apple Barrels and Boxes
Barrel Material, Supplies, Presses Picking Ladders, Etc. Second Hand Whiskey Barrels and Kegs
Hauber Cooperage Co., Kansas City, Kan.



Baskets Fruit Packages and Berry Boxes
TREE PROTECTORS A SPECIALTY
Address 146 Arsenal Street
St. Louis Basket & Box Company, St. Louis, Missouri

APPLES
We want to hear from you as to what you will have in EARLY AND LATE APPLES.
Write and tell us what you will have in PEACHES, PEARS, PLUMS, Etc. Ask for Booklet "G."
MYERS, WEIL & COMPANY, 750 Broadway, CLEVELAND, OHIO

Sanitary Cherry Picker
A labor, time and money saving device.
Manufactured by
Traverse City Wagon Works
A. J. PETERTYL, PROP.
TRAVERSE CITY, MICH

We Want Apples
PEACHES AND GRAPES
State what you have now or will have to offer
BRUSH & SON, Pipestone, Minn.

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing
Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*
M. BRUNSWICK & CO., Rochester, N. Y.

ments to one or two plants and your loss won't be serious.

The same firm lists the Mammoth blackberry, describing it as bearing the largest berries they ever grew (?) and as ripening long before any other blackberry. They admit that in their section—a far Northern state—"it is a little tender." I should rather say so, when it can't stand the latitude of Southern Missouri. The Mammoth blackberry belongs to the same class as the Loganberry and Phenomenal dewberry, all of them unsuccessful in the Northern and Central states and their value unproved, so far as I can find, even in the South.

Our Cumberland blackcaps gave us for the first picking the largest berries I ever saw of that large variety, due, I suppose, to good weather and soil conditions. We try to keep all our small fruit plantations well cultivated and free from weeds, stirring the soil once a week or whenever a crust forms, but late in the summer when the canes begin to fill the middles and crowd out the cultivator the crab grass sometimes gets the start of us and the rows stand untilled during the fall. I am convinced that such conditions is largely responsible for the dying back of the canes during the winter. The wood matures too soon and the flow of sap is checked and discouraged. What is left is evaporated by the winter sun and the cane dies. In the shade of a tree this does not happen. The best panacea should be a heavy mulch applied soon after the fruiting season or cultivation continued right on through the fall. Either of these should insure a late growth and a good circulation right on up to winter. If your canes have not been doing satisfactorily, try one or both of these methods. The difficulty with late cultivation is the obstruction of the canes as they grow long. This can be obviated by enclosing the plants between two wires, which I have read about but never tried. I have tried one low wire but the tying up was not a success. Some good results are reported from tying to one or two high wires, grape trellis fashion. Under this system the canes would not be pinched back but allowed to grow as long as they pleased. I should like to give this a trial and shall try to do so on a small scale.

The strawberry season was not the success that was promised by appearances in early spring. Although there was an absence of severe frosts and and long cold rains, there were universal complaints of rough imperfect berries. The Marshall was a failure, as it has regularly been of late years, but the Chesapeake replaces it very satisfactorily, approaching it very nearly in both looks and quality. The Chesapeake, however, is not very productive, not more so than the Gandy, but it will win customers wherever its flavor is tested against any of the ordinary standards. If you are selling to a local market, and especially, if you are selling to private customers, the Chesapeake will bring you compliments from all classes, and you need fear no defections along your route to competitors unless they have the the same berry.

The berry that especially distinguishes itself for show this year was the Nettie, a seedling of Black's sent out at the same time as the Joe. The Nettie is really a little later than the Gandy and is really considerably more productive as anyone will admit who tries it. Its berries will average a little larger than any variety I am acquainted with and their late season of course makes them good sellers. Against this we may set the facts that their color is not deep enough and their quality not as high as could be wished but for all that you can depend on it that you will have no trouble in disposing of the Nettie's big berries—try it.

Missouri. L. R. JOHNSON.

The Strawberry Crop of 1912.

Again the berry season has come and gone for Southern Missouri. The yield so far as can be ascertained at present is not up to that of the Judsonia district. The report of the O. F. G. association is not out yet, so the number of cars moved by that company cannot be given at this writing. One weekly paper announced that the Springfield district had sent out 700 cars. This no doubt was a guess, and the estimate is probably far wide of the true number. Even if the "district" were taken to include Republic, Billings, Logan and Marionville, the number will certainly fall far short of that number.

As usual several changes in the yield prospects developed during the picking season. At blooming time the outlook was promising for a bumper crop. Heavy cold rains and several light frosts, with cold winds, the first week in May, cut the crop apparently one-third to one-half. Two dry spells cut the last three or four pickings very materially. Judging by the output of Billings, the crop of South Missouri was little more than half what it should have been, the average being about 50 crates per acre.

In conjunction with a rather disappointing yield, prices were lower than those of any previous season since I have grown berries for the market. The average price per crate for berries shipped in ice cars can not be accurately given, as returns are not all in at this writing (June 19.), but will probably not exceed $1.30. Prices for earlies, over-ripes and late pickings after the refrigerator cars ceased moving, brought better prices in Wichita than were obtained from the car shipments. Most of our express shipments were sent to W. S. Payne, and sold for $2.00 to $2.50, which returned us $1.47 to $1.93.

The superiority of the Aroma berry for this section was again demonstrated this season. Evening Star, side by side with Aroma fell behind. Gandy rusted but produced a good many berries. Mr. Bubach's Mellie produced an immense quantity of berries rather too soft for car berries and many of them small. Blaine rusted, Cardinal fell down, and a dozen other varieties failed to do anything worth mention. Several varieties which were mixed in with an order sent me by a big dealer two years ago still bother in the new field. Not one of them is worth one cent a hundred. I estimate my loss from that lot of mixed plants at $100.

Missouri. WINN COMBS.

Iris, The Flower For the People.

Just after his Iris had bloomed this season, Rev. C. S. Harrison, York, Neb., wrote us enthusiastically in praise of this flower, of which he has more than 180 varieties. He says he has never seen any display of flowers more beautiful than was made by his iris this season. He continues:

"A careful selection of varieties gives you blooms for a month, and I defy any flower to beat them. I cannot begin to name the good varieties, but call attention to several which should be in every collection.

"Fairy is a beautiful variety and as fragrant as a rose, filling the air with a delightful perfume. Tall, imposing and graceful, this variety puts on a garb fit for a queen.

"Speciosa is a charming flower, and as fair as a rose; seen at a distance, a collection of this variety looks like a bed of roses.

"Perfection is a remarkable variety; petals two inches broad, are of purplish blue, like velvet, with a changeable sheen on reflex side like the finest silk; the flower has a tall stem and the plant has great vigor. It is a kingly flower, overlooking the others.

"Sappho has light purple petals, very wide and large. This has a brilliant reflex and is a grand flower.

"Cypriana Superba is the largest flower of all, petals of the richest glittering purple and of massive size. You look on it and are spellbound by its beauty.

"But we cannot name all varieties. Some are dwarf, others are three to four feet tall; some begin to bloom with the tulips, others bloom well into June; in color they range from snowy white to deepest purple. The iris is the farmers' flower, for several reasons:

"First, because the country is waking up as never before to an appreciation of the beautiful; second, the iris is a healthy plant; they need the least attention of any of the perennials, and when the flowers are gone the foliage is attractive; third, the plants cost but little and multiply rapidly; fourth, they have a long blooming season. The more I see of the iris the more I am convinced of its great value for the masses. Five dollars invested in iris will produce a wonderful show of bloom in a very short time after planting.

"I have a manual on growing the iris which I will send to anyone sending 2-cent stamp to pay postage; this is a little pamphlet which has sold for 25 cents. C. S. HARRISON."

York, Neb.

We are Headquarters for
BARRELS AND KEGS

APPLE BARRELS—BUY EARLY

There will be a big demand for apple barrels this season, and you should enter your order early and avoid the rush. We also furnish flour, meal and poultry barrels. New Oak Cider and Pickle Barrels and Kegs, 5 to 50 gallons. Secondhand Whiskey Barrels. Soft Wood Sorghum Barrels and Kegs. Baskets, Berry Boxes, Cooperage Stock, Headliners and Bungs.

Write, telephone or wire us. Our stock is the best in the land, and prices are right.

J. A. SHCROER & COMPANY
Telephones 257 St. Joseph, Mo.

In your correspondence with advertisers please mention **The Fruit-Grower**

DOCTOR'S SHIFT
Now Gets Along Without It.

A physician says: "Until last fall I used to eat meat for my breakfast and suffered with indigestion until the meat had passed from the stomach.

"Last fall I began the use of Grape-Nuts for breakfast and very soon found I could do without meat, for my body got all the nourishment necessary from the Grape-Nuts and since then I have not had any indigestion and am feeling better and have increased in weight.

"Since finding the benefit I derived from Grape-Nuts I have prescribed the food for all my patients suffering from indigestion or over-feeding and also for those recovering from disease where I want a food easy to take and certain to digest and which will not overtax the stomach.

"I always find the results I look for when I prescribe Grape-Nuts. For ethical reasons please omit my name." Name given by mail by Postum Co., Battle Creek, Mich.

The reason for the wonderful amount of nutriment, and the easy digestion of Grape-Nuts is not hard to find.

In the first place, the starchy part of the wheat and barley goes through various processes of cooking, to perfectly change the starch into dextrose or grape-sugar, in which state it is ready to be easily absorbed by the blood.

The parts in the wheat and barley which Nature can make use of for rebuilding brain and nerve centers are retained in this remarkable food, and thus the human body is supplied with the powerful strength producers, so easily noticed after one has eaten Grape-Nuts each day for a week or 10 days.

"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

Ever read the above letter? A new one appears from time to time. They are genuine, true and full of human interest.

THE FRUIT-GROWER

ST. JOSEPH, MISSOURI

Title Registered in U. S. Patent Office. Bro. Jonathan—Trade-Mark—Registered

Copyright, 1912, by The Fruit-Grower, St. Joseph, Mo.

Address all communications and make remittances payable to "The Fruit-Grower," Eighth and Charles Sts., St. Joseph, Mo.

WM. G. CAMPBELL, General Manager JAMES M. IRVINE, Managing Editor
E. H. FAVOR, Associate Editor

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....J. C. BILLINGSLEA.....First Nat'l Bank Bldg.
New York Office..... A. H. BILLINGSLEA.....No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS.....821 New York Life Bldg.
St. Louis Office.....A. D. McKINNEY.....Third Nat'l Bank Bldg.
Minneapolis Office..... ROY R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents Agate Line. $7.00 per inch. Fourteen Lines to an Inch.
Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.

No advertising in class generally termed "Objectionable" accepted under any conditions. Editions mailed on first day of month. Forms close on 20th of preceding month, i. e., January forms close December 20th, etc.

An Advertisement in The Fruit-Grower will place you in touch with One Hundred Thousand of the Most Prosperous Farmers in America

SUBSCRIPTION RATES

Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c, or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list.

Remit Coin, Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 JULY, 1912 Number 7

Is Our "Big" Apple Crop at Hand?

Reports from all parts of the country indicate that the apple crop for 1912 is likely to be one of the largest ever harvested, and there are those who claim that this country will produce more apples this season than were marketed in the record year of 1896. It is entirely too early to say with any degree of certainty what this year's yield of apples will be, but it is not too early to make plans for marketing the crop, no matter how large it may be.

One thing that growers should do is to strive to produce the highest quality fruit possible. One of the best ways to increase consumption of apples is to furnish good fruit at a reasonable price. Wormy, scabby apples will soon disgust the consuming public, and it is easy to have an over-supply of this kind of fruit. Grow good apples, and a long step will have been taken in the marketing of the same.

Another thing that should be attended to at once is to see that trees which are too full of fruit are relieved of part of the burden. If apples are too thick on the tree they will be small and they are more likely to be wormy. Thin off the surplus, and you will have as many bushels, and the apples will be of better quality.

Shipping associations should co-operate with each other, in an endeavor to properly distribute the fruit. We still believe this country will consume more apples of high quality than have ever been raised, if proper distribution is had. Let's see to it that everyone has a chance to buy apples this season.

How About Your Freight Rates?

While the preparations are being made to market the fruit crops for 1912 it will be well not to overlook a very important matter, and that is the question of freight rates. Do you know how your section is situated as regards rates on fruits? There are sections of this country where fruits are allowed to rot on the ground because prohibitive freight rates prevent the shipment of the crop. The thing to do is to investigate your freight rates, and if they need adjusting, get at it at once. It takes time to secure a change in freight rates, and now is none too early to start the agitation for relief.

Agitation for Good Roads.

In every part of the country there is an agitation in favor of good roads, and every fruit grower should lend his influence in favor of this improvement. It has been repeatedly demonstrated that fruit crops usually suffer greater injury in getting from the orchard to shipping station than they do in a long ride by rail, where car-lot shipments are made. A short haul over a rough road is much more injurious to fruits of all kinds than a ride of a hundred miles or more by train. Don't assume that the only transportation problem worth considering is that which refers to freight rates. Get after the road between your orchard and town, and you will save time, save your wagons and teams, and you will save your fruit.

Parcels Post or Postal Express?

Dr. W. A. Henry has been in Washington for some time urging Congress to pass an effective parcels post bill, and while he is still enthusiastic in this work, he has come to believe that perhaps the postal express plan advocated by Representative Lewis of Maryland is the better way to secure relief from existing conditions. Bills have been introduced in both branches of Congress, based on the findings of Mr. Lewis, who has devoted years of study to this subject. Concerning this plan Dr. Henry says:

"Mr. Lewis points out that the government in carrying packages through the mails is competing with some thirteen express companies. These express companies pay the railways only about half as much as the government pays them for a similar service. Mr. Lewis holds that the express companies are parasites; that they have no economic reason for existence so long as the government is in the business of carrying packages; and that the government should assume a monopoly of the entire business of carrying parcels in order that all the people may receive equal service at the least possible cost. Finally he holds that this desirable end can be best attained by the government assuming the express function, taking over such equipment of the express companies as may be needed and the express railway contracts and continuing that business as a part of the postal system, this consolidated postal express service to be extended to the rural routes.

"When I first heard of the Lewis idea I thought it visionary, but when I found such staunch, clear-headed thinkers as Senator Gardner and Representative Goeke introducing bills and noted the rapid growth of the idea, I studied the proposition in earnest. As a result I have been forced to the conclusion that if the principles advanced by Mr. Lewis are enacted into law the people of this country will have the most perfect parcels post system of any nation.

The Goeke bill, which embodies the Lewis idea, was referred to the committee on interstate and foreign commerce, one of the strongest and ablest committees of Congress, which after careful investigation and consideration, recommended its passage. This is the first legislative victory for the Lewis plan. It was fairly won and is significant of the advanced position to which Congress is rapidly moving in regard to parcels post legislation.

"The National Grange has unqualifiedly endorsed the postal express plan as have the state granges of Maryland, Maine, Delaware, New Jersey, New York, Pennsylvania, West Virginia, Michigan, Ohio, Kentucky, Colorado, Souh Dakota, Nebraska, Idaho, California, Oregon and Washington. Letters and petitions favoring 'postal express' as against 'parcels post' are pouring in upon Congress in an ever increasing flood as the people awaken to the basic facts enunciated by Lewis and well expressed in the Gardner and Goeke bills. One does not have to move far in this study until he reaches the conclusion that this country can never have a satisfactory parcels post system until the government has a complete monopoly of the carriage of all packages as it now has a monopoly in the carriage of letters."

Those who want more detailed information on this subject should write to their Congressmen for House Report No. 597, on "Postal Express."

Electric Light for Farm Homes.

L. T. Perrill of Kansas Agricultural College recommends that more farmers investigate the possibilities of having their own electric plants for furnishing light and power, and he offers strong arguments for the independent electric system. He says that farmers will shortly be as much interested in these lighting plants as they are now in automobiles. This is demonstrated by the fact that at the last state farmers' institute in Kansas more than 400 farmers inspected an electric plant and were much interested in its operation.

Mr. Perrill continues: "The common rural lighting outfit offered for sale includes a dynamo to generate the electricity, a gasoline engine to run the dynamo, a switchboard, and a storage battery to store electrical energy to be used by the lamps and small motors without running the engine. A good, complete system can be purchased and installed for less than $500, not much more than one of the dangerous gas plants costs. This can be lowered if the farmer has a gasoline engine or wires his house himself. Electric lights will lower the insurance rate.

"A one-horsepower engine, or an additional horsepower to any engine, will run a dynamo large enough for a ten-ampere outfit. A ten-ampere outfit is satisfactory for the average farm. When the large power is to be supplied by the gasoline engine, the dynamo can be run at the same time, requiring a little more gasoline, but no more time. Under such circumstances, the cost of electric lights will be as close to nothing as it is possible to have good lights.

"The dynamo, switchboard and battery are shipped ready to set up. In most cases, a good electrician should be secured to install the dynamo and cells and do the wiring.

"A ten-ampere battery will operate all the lights required for a seven or eight-room house, as well as lights for the outbuildings. In addition, a small vacuum cleaner, electric toaster, wringer, washing machine, sewing machine, fan or electric iron can be used.

"The farmer, after determining the number and sizes of lights he desires in each room, must estimate the number of hours they will burn in the morning and evening. These figures can be obtained from the number of hours that artificial light is used now. It must be remembered that the electric system should be large enough for the heaviest average load demanded from it, which is some time in the winter. This does not mean that the battery should have sufficient capacity to run all the lights on the place at one time for any length of time. On special occasions, as parties, the dynamo can be run in parallel with the batteries. A switchboard to permit this should be purchased, always.

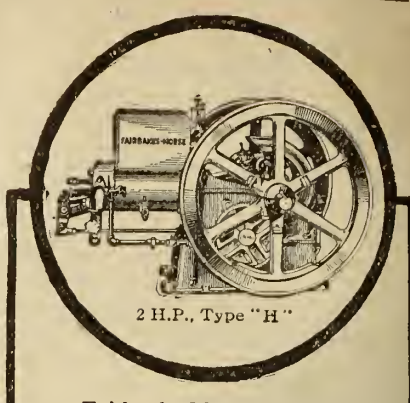
"The average house with seven rooms, cellars and closets, should burn less than three hundred watts a week. The storage battery of a ten-ampere outfit will produce three hundred watts without recharging. It takes eight hours to charge the battery after it has been discharged, completely.

"The cost of wiring the house will vary between forty and one hundred dollars, depending upon the amount and grade of wiring and the fixtures used. A house can be wired cheaper when it is being built than at any other time. The cost of upkeep is slight.

"Another electric outfit is called the 'direct-connected.' The generator in this system is connected to the engine directly instead of by a belt, as in the ten-ampere plant. A direct-connected system will cost between eight and nine hundred dollars, because a special engine must be furnished to obtain an even speed and smooth lights. As there are no storage cells, the engine must be run whenever the lights are used, which would be unhandy in the mornings on a cold winter day. As the generator in this outfit has a higher voltage than the storage battery system, the wires can be strung farther from the generator.

"Other systems have been tried, as well as combinations of the several types. These two, however, are the most successful for the farmer, with preference given to the storage battery outfit."

Ask your neighbor to subscribe for The Fruit-Grower.



2 H.P., Type "H"

A Fairbanks-Morse Engine will give you the kind of service you counted on when you planned to buy an engine. It fulfills every purpose for which you so much need reliable power.

Fairbanks-Morse Engines

do more. They give you years and years of low-cost service. They are absolutely guaranteed as to material, workmanship and power.

The Fairbanks-Morse is a four cycle, long stroke, perfectly balanced, smooth running engine that develops full power at slow speed. There's no racking or pounding; no overstrain to carry the load. It stands up where other engines fall down.

Engines built for operation on gasoline, kerosene, gas or low grade oils. Vertical and horizontal types.

Write for Catalog No. NA 953 and state size you need

Fairbanks, Morse & Co.

Chicago St. Louis Kansas City

The Handiest Rig on the market for nailing Box Apples

The Edgemont LID PRESS

Price $11

Send for Circulars

H. PLATT & SONS

Como Montana

CONSERVATION OF WATER

The difficulty that every farmer experiences in ordinary row irrigation is to so control his supply that the water flows down each row at the same rate and with sufficient velocity so that when the water reaches the lower end of the row the upper end has had time to be sufficiently moistened for the water to reach the roots of the plants. In order to accomplish this, every field should have a ditch running along its highest part, properly laid out. This will be best accomplished by making openings through the side of this ditch through which the water runs into the rows, level; that is to say, fixing them so that when a dam is put in, which brings the water over the bank and forces it through the openings, the water will run through each opening with the same velocity and therefore have the same head. It will, therefore, be a paying proposition to make these openings permanent.

A box made of lumber or concrete with openings in the side, each section set level, with a drop at the end of each section so that by placing the dam at the end of the section, the same quantity of water is discharged through each opening and finds its way to each row and is sent down each with the same velocity and the same quantity of water is supplied to each row. This quantity can be regulated by increasing or decreasing the head on each opening, and with this arrangement it will be found that labor, time and water will be saved.

Another thing, after an irrigation by means of the row method, many farmers have found it advisable and profitable to harrow across the rows. This fills the ditches and the ground that is saturated with loose earth, which forms a "dust mulch" and thereby prevents excessive evaporation from the rows, while if this is not done the bottom and sides of the ditches take on a crust, the particles become packed together and excessive evaporation takes place. For the next irrigation it will be necessary to again run the cultivator through the rows in order to form the ditches for another application of water, and by the time this second irrigation occurs the plants will be so far advanced that it will be impossible to harrow a second time, but the first harrowing can be done with very little damage to the crop, in fact it is a benefit to the crop even though some of the plants are destroyed.

E. B. HOUSE.
Colorado Experiment Station.

Gas Engine Economics on the Farm.

The present stage of perfection of the gasoline engine, and the good name which it is making for itself with all those who use it, are attracting a great amount of attention from a large and increasing number of the farming community. While it is not true that the gasoline engine may be applied advantageously to all the machinery on the farm which it is possible to run with mechanical power, it is true that a large part of it which is now run by hand or horsepower could be much more conveniently and economically done with gasoline engine power.

In selecting a gasoline engine, there are two important factors to be considered—first, the make of engine, and second, the power of engine. In deciding the first factor, the average farmer does not always possess sufficient knowledge of gas engines to judge the merits of two different makes. The claims and arguments of competing manufacturers, agents and dealers are so contradictory and confusing that, unless one is an expert, their statements throw little light on the subject.

As precautionary statements in regard to the make of engine, I will say: Do not try an engine which is still in the experimental stage. Buy an engine which to your personal knowledge is giving first-class satisfaction with its users. Do not buy an engine which is exceedingly cheap. Buy an engine for which repairs can be had without sending the length of the continent for them.

In deciding upon the size of an engine one must depend entirely upon the machinery to be run. The most economical condition of gas engine operation is attained when the engine is run at full load, that is, when the machine which is driven requires the full power of the engine to drive it. This condition cannot always be obtained because it is generally the case that several machines requiring different power must be driven by the same engine. However, by using forethought in purchasing new machinery for different classes of work about the farm, the different machines can usually be selected of such capacity that the same power will be required to run each of them, and hence an engine purchased of just sufficient power to run them. Manufacturers of power driven machinery give in their catalogues the capacity of their machines and also the amount of power required to run them.

It is often the case on a large farm that it is more economical to have two engines of different power. For instance, have one engine for pumping water, turning the grindstone, driving shop tools, etc., and a larger one for grinding feed, cutting ensilage, etc.

F. H. ROSENCRANTS.
Colorado Agricultural College.

Ask your neighbors to subscribe for The Fruit-Grower. They'll thank you.

Government Homesteads

Easy to Get Now

NEW LAWS ENACTED

Everybody entitled to a homestead, wants one, of course, but until the recent law was passed, a homesteader was required to live continuously on the land five years before he could get title.

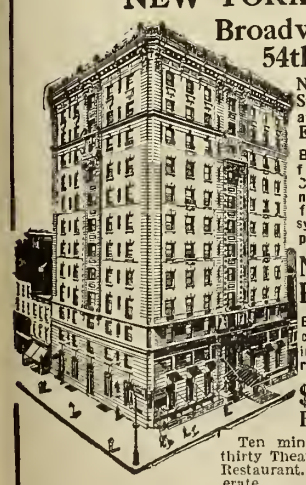
Now it is altogether different and irrigated farms, or as much as 640 acres of unirrigated farm land, can be taken up on a new and liberal plan. Not only can you prove up and get title in three years time, but you are permitted to leave your homestead five months each year, so you can go home or earn money with which to buy stock and get your homestead farm going.

This is very important and opens up a splendid opportunity to men young and old, to get well fixed. Write and tell me which you are interested in, irrigated or unirrigated land? And I will tell you all about the new law, all about the farm land in Nebraska and Wyoming that the government will grant you, all about the conveniences to free timber and coal and other advantages near by some of these lands; and I will tell you just how to join one of the cheap excursion parties that the C. B. & Q. Railroad Co. will run twice a month to enable you to see and locate on a homestead to be your very own. Then I will send you without charge a folder with maps and pictures, telling all about the crops that can be raised on these farms of Uncle Sam's that are waiting for you, and I will help you in every way possible, because I am paid to do so by the Railroad Co. Make up your mind to go on one of these excursion parties, see the wonderful western country and look over these homestead lands. It's about the last chance anyone will get. D. Clem Deaver, Room 324, Q. Bldg., Omaha, Neb.

HOTEL CUMBERLAND

NEW YORK

Broadway at 54th Street



Near 50th Street Subway Station and 53rd Street Elevated.

Broadway cars from Grand Central Terminal and cars from new Pennsylvania station pass the door.

New and Fireproof

Best Hotel accommodations in New York at reasonable rates

$2.50 with Bath, and up

Ten minutes' walk to thirty Theaters. Excellent Restaurant. Prices moderate.

Send for Booklet

HARRY P. STIMSON
Formerly with Hotel Imperial

The Right of All the Way

Railroad service and telephone service have no common factors—they cannot be compared, but present some striking contrasts.

Each telephone message requires the right of all the way over which it is carried. A circuit composed of a pair of wires must be clear from end to end, for a single conversation.

A bird's eye view of any railroad track would show a procession of trains, one following the other, with intervals of safety between them.

The railroad carries passengers in train loads by wholesale, in a public conveyance, and the service given to each passenger is limited by the necessities of the others; while the telephone carries messages over wires devoted exclusively for the time being to the individual use of the subscriber or patron. Even a multi-millionaire could not afford the exclusive use of the railroad track between New York and Chicago. But the telephone user has the whole track and the right of all the way, so long as he desires it.

It is an easy matter to transport 15,000 people over a single track between two points in twenty-four hours. To transport the voices of 15,000 people over a single two-wire circuit, allowing three minutes for each talk, would take more than thirty days.

The telephone system cannot put on more cars or run extra trains in order to carry more people. It must build more telephone tracks—string more wires.

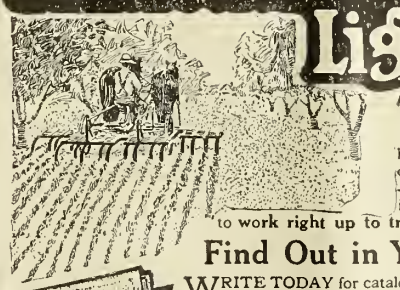
The wonder of telephone development lies in the fact that the Bell System is so constructed and equipped that an exclusive right of all the way, between near-by or distant points, is economically used by over 24,000,000 people every day.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

You will confer a great favor upon us as well as the advertiser if you mention The Fruit-Grower when writing.

Find Out About the Forkner Light-Draft Harrow!



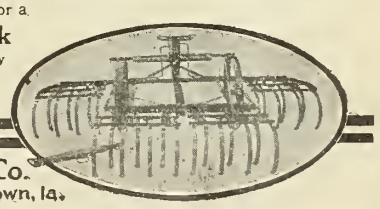
THIS low-priced harrow for orchards and vineyards—and general use—is a world-beater. Wonderfully light of draft—weight carried on wheels, not on horses' necks. Great worker—20 to 30 acres a day with one team—and every inch of soil cultivated thoroughly—lifted and turned in long wavy level. Best of all—it hangs low and has great extension—making it a snap to work right up to trees without horse or driver disturbing boughs or fruit.

Find Out in Your Orchard—At Our Risk!

WRITE TODAY for catalog and 30 day trial offer. Pick the machine suited to your soil and orchard and use it for a month—and send it back if you don't find it the finest cultivator made.

Send for This Free Book

"Modern Orchard Tillage"—written by highly successful orchardist—contains information that may be worth hundreds of dollars to you Sent for the asking.



Light Draft Harrow Co.
907 E. Nevada St. Marshalltown, Ia.

You will confer a great favor upon us as well as the advertiser if you mention The Fruit-Grower when writing.

J. H. Hale, the "Peach King," writes: "THE DOUBLE ACTION 'CUTAWAY' is a splendid tool. I use it in polishing off my peach orchards several times a year. A good pair of horses handle it all right."

The genuine "CUTAWAY" tools are used and endorsed by successful orchardists from coast to coast and bay to gulf.

In orchard work the driver can cultivate under the trees and below the low limbs, the horses not interfering with the branches. The double levers give the driver full control of tool at all times. For regular farm work the gangs can be drawn together.

CUTAWAY DOUBLE ACTION ORCHARD HARROW

Every orchardist and fruit grower should have one or more of these labor savers and fruit makers. They will positively pay for themselves in one season. To investigate is to be convinced.

Thorough cultivation makes large crops. Stirring the soil lets in the air, sunshine and new life, and kills foul vegetation. The "CUTAWAY" disk slices, stirs, lifts, twists and aerates the soil. CLARK'S "CUTAWAY" TOOLS run lighter and do better work than any other machine. Lasts a lifetime.

Send today for new catalog, *"Intensive Cultivation."* Of course, it's free.

CUTAWAY HARROW COMPANY
968 MAIN STREET HIGGANUM, CONNECTICUT

You will confer a great favor upon us as well as the advertiser if you mention The Fruit-Grower when writing.

PRUNING Book by Professor Bailey. Tells everything about pruning. You need it. Price $1.50. The Fruit-Grower, St. Joseph, Mo.

FRUIT GROWING IN ARID REGIONS. A New Book, by Paddock and Whipple. $1.50. The Fruit-Grower, St. Joseph, Mo.

TO KILL OUT CHICKWEED

Thorough Cultivation the Best Method—Sulphate of Iron a Satisfactory Remedy

Keeping chickweed out of strawberry patches probably is the greatest problem the strawberry grower has to face today. This has been one of the leading questions since strawberries have been grown commercially.

In the first year, as a rule, chickweed is not bothersome, but late in the fall, after the hoeing and cultivating are discontinued, or early in the spring when it is impossible to cultivate, the pest makes its appearance.

There are two types of chickweed. One has a smooth leaf, is light green in color and attains a very rapid growth; the second is more stocky, having a long, hairy, dark green leaf, and this type has a tendency to grow more in bunches than does the former, thus making it easier to clean out by hand. The first type is the hardest to combat, and at the same time is the most common. Both types will succumb to the same treatment.

Chickweed is a plant which thrives best in wet weather, and of course is seriously damaged by drought. Where it grows in a thick mat within the row, it will hold the moisture collected during the night or from a rain until 10 or 12 o'clock in the day. This causes much injury to both green and ripening fruit.

As has been stated, during the first summer, while the berries are being hoed and cultivated, the chickweed does not become a source of extraordinary annoyance, as it is rather a tender plant and cannot stand much disturbance. During the fall the strawberry plants get so thick in the rows that it is impossible to use a hoe to any advantage. Then is the time the little chickweed makes its appearance, especially if the fall is a wet one. As soon as the chickweed plant has reached a height of about two inches it begins to branch out, covering the strawberry plants and producing seeds in abundance which, falling to the ground, germinates immediately, growing up through that already in evidence. This, of course, produces a thick mat which will choke out any other growing plant. The prevention of this, to a certain extent, is by hoeing dirt on to the row in early fall, to break down and cover the little chickweed plants. At this season strawberries will stand considerable dirt covering and still grow up through the dirt .

A small amount of chickweed is really a good thing in a strawberry patch during the winter, but only a small amount, because it would not be wise to have enough so that the berry plants would be smothered. A little of the chickwed plants prevents heaving, and is more or less a sort of cover crop or protection against the cold winter weather.

Now comes the real problem, how to get rid of the chickweed, which has been a good thing during the period of low temperatures, but which in the spring becomes a nuisance. Hitherto there has been no other method than the laborious one of getting down on ones hands and knees and pull the plants out with ones fingers. Already I have shown how it can be controlled the first year, perhaps leaving enough for all the good effects during the winter. But during the warm spells in the winter chickweed grows rapidly, and especially in early spring. So I have carried on investigations on spraying chickweed in the spring with sulphate of iron to meet this situation.

These experiments were undertaken at Webster, N. Y. It was known to begin with, that sulphate of iron would kill chickweed and strawberries as well. Thus, the object of this experiment was to find if possible, a time when the berry patch might be sprayed to kill chickweed and leave the strawberry plants uninjured; also to discover what strength of sulphate of iron solution would be most effective. Three solutions were employed as follows: one pound to a gallon of water; one and a half pounds to a gallon of water and two pounds per gallon of water, which we will call respectively 10, 15 and 20 per cent solutions. Each solution was applied to small plats. The first plat was sprayed thoroughly, but not overdone, while the second plat was drenched. The first spraying was done April 3, 1911. The second spraying occurred about a week later and the third just before the blossom buds appeared.

The results were that on the first spraying the 20 per cent sulphate of iron solution killed all the chickweed and took all the leaves off the strawberry plants as it did all the others, but it did not kill the plants. They came on greener and fresher than before. The 15 per cent solution killed all of the chickweed and the 10 per cent solution some of it only. There were no benefits from drenching the plants with the solution, thus showing that the making up for lack of strength of solutions by applying an extra amount cannot be accomplished.

Chickweed comes up from seed and covers the ground before the end of the blossoming period. Thus, while the spraying was effective, it was done too early. The second spraying produced about the same results as the first, it of course, caught a week's additional growth of chickweed. The third spraying was the one which produced the most effective results, showing that the 10 per cent solution is not quite strong enough, but that the 15 to 20 per cent solution is about right. All the leaves of the plants were taken off in the previous experiments, but the crowns were uninjured, even when drenching was resorted to. The time of blooming was delayed probably from four days to a week. This will vary with the time of spraying and the season. If the weather is clear and sunshiny, the chickweed will be killed in two to four days, and the strawberry leaves will be black and the whole patch will look as though it had been burned. As the crowns are uninjured, fresh green leaves soon appear. They grow exceptionaly fast, shading the ground so that the chickweed does not reappear to any extent.

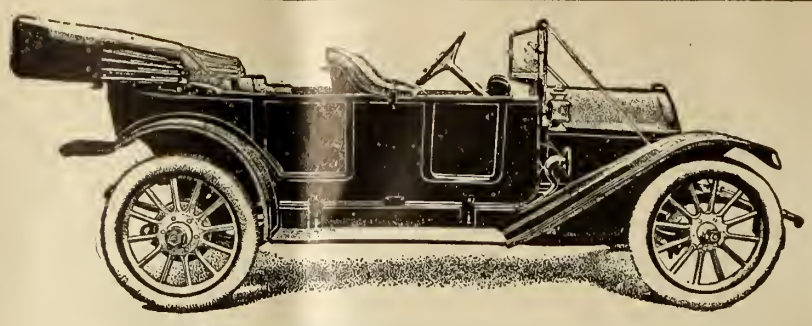
As previously observed, it is not possible to make a 10 per cent solution of sulphate of iron equal to a 15 or 20 per cent solution by applying an extra amount. Either a 15 or 20 per cent solution must be applied evenly and just enough to thoroughly wet all the chickweed through to the ground. It may be applied with a broadcast sprayer, carrying a nozzle over every row. In these experiments, however, a hand pump and a "Tiger" nozzle were used. This combination gave a very fine, forceful and effective spray. No chickweed will be killed below where the spray goes. I do not think that sprinkling would be satisfactory. In a day or two after the spray is applied the patch should be gone through and the thick bunches of chickweed raked off with an ordinary garden rake or similar tool. Otherwise it will die down, forming a dense mat and will smother the plants beneath it.

New York. B. B. ROBB.

W. A. Irvin, Springfield, Mo., believes that if strawberry growers in the Missouri-Arkansas berry district will provide a way to irrigate their berry fields in case of drouth, the strawberry will long be a money-maker for them.

The Grand Junction (Colo.) fruit district reports more and better spraying being done this season than ever before. There was a scarcity of sprayers for the first spraying after the bloom fell, but most orchards were sprayed in good time.

The peach crop this season is largely confined to the states where peaches are extensively grown, and high prices are not to be expected. One estimate has it that 17,000 cars of peaches wil be shipped, not counting California. That's a lot of peaches, surely.



My Personal Guarantee Backs Every STAVER Car

There are as many different kinds of automobile guarantees as their different makes of cars. Of course, they all *read* just about alike—*the difference is in the way they are lived up to.*

Some manufacturers—not many—look upon a guarantee as a thing to be wriggled out of. Others, maybe with all the good-will in the world, just shove the responsibility over on the dealer, or, possibly on some subordinates in their own office.

6 Models 35 H. P. and 40 H. P. **STAVER** $1650 to $2250

CHICAGO

I couldn't afford to do business that way, even if I wanted to. Every STAVER car has a 33-year-old reputation back of it that it has *got* to uphold. Every farmer in the country knows that STAVER carriages have never had an equal. Even if our factory should burn to the ground and every bank that holds our money should fail, this reputation would still be worth millions of dollars to us. I could turn over the entire manufacturing and selling end of my business to competent men and feel pretty safe. But—

I'm going to take care of the STAVER reputation myself.

When you buy a STAVER car, I want you to feel that I, *personally*, am just as much interested in that car's behavior as you are. I want you to feel that you don't have to depend on the word of *any* subordinate—"the boss" is not only willing but anxious to take *all* the responsibility himself.

It took me *five years* to produce a car that I was willing to stand back of. I know that the STAVER is an amazingly fine car and all I ask is an opportunity to *prove* the fact *to you.*

Just drop a postal or letter and I'll send you the new STAVER catalog, the story of the wonderful performance of the STAVER in establishing the Transcontinental Roadway, and a copy of the Transcontinental Route Book—all with my compliments. Address me personally.

HARRY B. STAVER, President

Staver Carriage Co.

Dept. 453B

76th and Wallace Sts. Chicago, Ill. (86)

$29.50 Buys This Elegant Top Buggy.

WARRANTED FOR Five Years.

Retail Price $60.00. Buggies, Surreys, Spring Wagons, Farm Wagons. We have cut out our Jobbers, our Wholesalers and our Retailers and offer YOU their profit. Write today for our

Free Catalog and Delivered Prices.

Mutual Carriage & Harness Mfg. Co.

Station 35-J East St. Louis, Ill.

Split Hickory Vehicle

1912 Big FREE BOOK is Ready

Write a postal—Phelps pays the postage to you.

H. C. Phelps Pres.

Phelps 2 Year Guarantee

—Shows You the Biggest Selection of Buggies in America —Saves You Big Money

PHELPS' shows you more styles this year in his big book than ever before. And every buggy price saves you big money—$25 and up. Send a postal—get the Book—let Phelps talk through it to you direct—the way he has sold 150,000 farmers. Let him show you in photographs how a good buggy should be made—and what made of. Phelps knows. They're all highest grade—over 125 styles—every kind—auto seat Buggies, Surreys, Runabouts, etc.—all sold direct to user on 30 Days' Free Road Test—2 Years Guarantee. Don't you want the book? A Postal gets it. H. C. Phelps, Pres.

THE OHIO CARRIAGE MFG. COMPANY Station 46, Columbus, O.

Largest Factory in the World Selling Vehicles Direct.

Split Hickory Vehicles

On 30 Days FREE Road Test

Harvey Bolster Springs

Get more money for your vegetables, fruit, eggs, milk and live stock by delivering them in first class condition.

HARVEY BOLSTER SPRINGS make your wagon a spring wagon—make it last longer and prevent damage to produce in hauling to market. They are the *Standard Springs of America* and are sold under our positive guarantee to give satisfaction. Ask for special proposition.

HARVEY SPRING CO., 736-17th St., Racine, Wis.

GUARANTEED

THE BOSTON MEETING

The annual meeting of the American Association of Nurserymen, Boston, Mass., June 12 to 14, was a very enjoyable affair and the attendance was good, but little business was transacted. Everyone was too busy seeing the sights in and around Boston to give much attention to the sessions of the convention.

Thos. B. Meehan was elected president for the coming year; J. B. Pilkington, Portland, Ore., vice-president; John Hall, Rochester, N. Y., secretary; Charles Yates, Rochester, N. Y., treasurer. Portland, Ore., was selected for the next meeting place, and the date of the 1913 meeting will likely be selected so that the rose carnival will be held during the convention.

One bit of business transacted at Boston is of interest to fruit growers of the country, and this was the indorsement by the nurserymen of a bill now before Congress providing for more stringent inspection of imported nursery stock, and giving a board composed of heads of departments of the Department of Agriculture the right to quarantine against any foreign country which is infested with any very destructive insects or any dangerous plant diseases. For many years the fruit growers' associations of the country and the nurserymen have been trying to agree upon an inspection bill which would be fair to all concerned, but until now they have not been able to get together. The pending bill is a little more stringent than some of the Eastern nursery importers wanted, and a little less stringent than was demanded by some of the organizations of fruit growers. It is believed, however, that when this bill is rightly administered it will safeguard the interests of nurserymen and fruit growers alike.

This bill is now before Congress, and the new legislative committee of the nurserymen's association was instructed to work for its passage. The stand taken by the nurserymen this year is a distinct advance over any action previously taken, and it is an indication that they are coming to see that their interests are identical with those of the fruit farmers.

At one of the evening sessions Messrs. Shaw and Sears of the Massachusetts Agricultural College gave illustrated lectures on varieties of apples especially adapted to New England. In his address Professor Sears referred to pedigree trees, and said that he believes the evidence is in favor of the theory of taking scions from trees of known value. He referred to the work which has been done at Ottawa, Canada, to substantiate this theory. He also made a plea for planting one-year apple trees, and said that New England growers are just coming to appreciate their advantages. He further said that he had found but little difference in planting trees grown near at home and those shipped from more distant nurseries, provided the trees coming the longer distances were well packed, so that roots did not dry out in transit.

The entertainment features of the Boston convention were most enjoyable. The entertainment committee, of which Mr. Manning was chairman, cared for the visitors in fine style, and everyone enjoyed their visit to the Boston convention.

Fire Blight.

There has been so much complaint of blight this season the following circular on the subject, from the Missouri Experiment Station, will be interesting:

Fire blight attacks the pear, quince and apple. It is a bacterial disease, the bacterium entering the young, tender parts of the tree, especially the flowers in the spring, and killing back the new growth. This bacterium multiplies principally in the growing layer under the bark, destroying the twigs. It is quite serious in the pear, but seldom injures the apple trees permanently, except in the case of a few Russian varieties. Where it spreads in apple orchards it may not be seen there again for years.

There is no direct remedy for this blight. Much can be done, however, to prevent its spreading. Prevention consists in cutting out and burning the blighted twigs of the tree. Where it is spreading generally through a large orchard, of course, this is impossible to do in summer. It is best to fight it by cutting out blighted parts of pears where they are growing in the neighborhood, as it usually spreads from the pear to the apple. While it often gets so abundant that one cannot cut it out during summer, the disease lives in only a very few of these blighted parts over winter. Where a twig has entirely died from the blight in summer, no living parts of the disease will be there to spread the blight next spring; in a few places, here and there, however, the blight will live over winter, especially in the pear trees, but occasionally in the apple also.

The best way to prevent the blight is to learn to recognize these winter pockets of blight, usually on the trunk or main limbs, but sometimes on the twigs, and cut them out in early spring before they begin to exude their honey-like secretion. These winter blight pockets can all be cut out and burned in early spring before the trees come into blossom and the blight usually prevented.

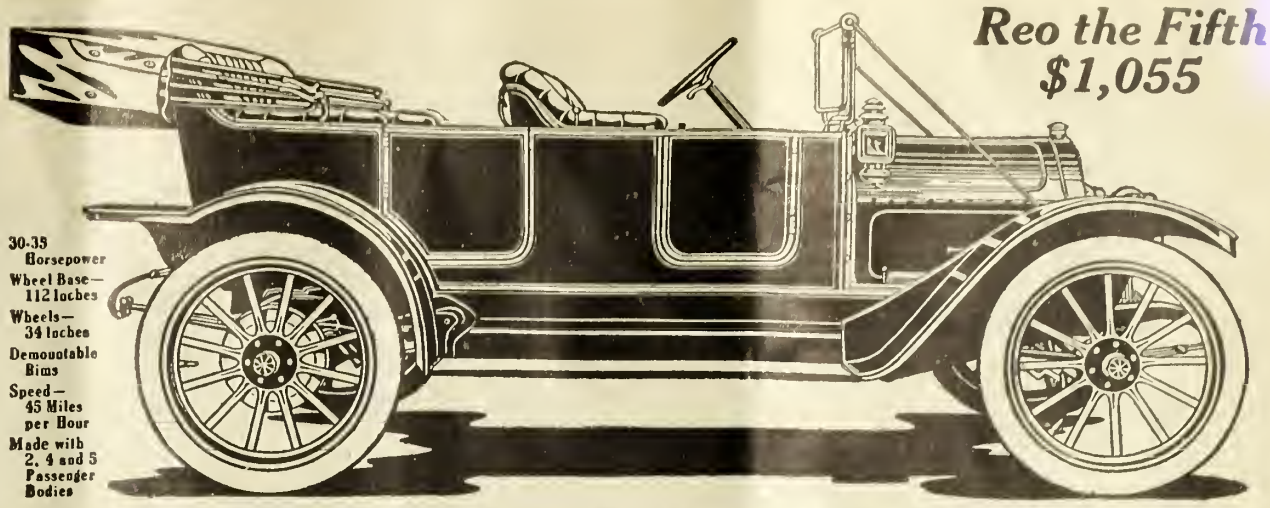
Dynamite for Digging Holes for Trees.

I have seen a good deal about blasting the holes in which fruit trees are to be planted, and would like to have the experience of some reader of The Fruit-Grower who has followed this practice. I want to plant some trees next spring, and will try dynamiting the holes, if this has been found a good plan by other readers of The Fruit-Grower.—H. B. Cooper, Springdale, Ark.

The same mail that brought this letter brought another from W. A. Irvin, Springfield, Mo., from which we quote:

"I have used dynamite for digging holes for trees, and am still using it with satisfactory results. It is a good plan to use in replanting an old orchard. In my fifteen-year-old orchard there were rocky spots where the subsoil plow failed to penetrate when the orchard was first planted, and two or three replantings since, where holes were dug with pick and shovel, have not been successful. Dynamite did the work all right.

"There is little danger in handling the dynamite, but great care must be used in handling the caps which explode it. I use half a stick of Red Cross dynamite for opening a hole in which a tree is to be set, and a whole stick is used to blow out an old tree. My men cut the fuse the length wanted, insert one end of the fuse in the cap, and bore or gouge a hole in the dynamite, in which the cap is inserted; the dynamite is then tied fast in the hole. A crowbar is used to punch a hole in the soil to depth of about two feet."



Reo the Fifth
$1,055

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip-cover, windshield, gas tank and speedometer—all for $100 extra. Self-starter, if wanted, $20 extra.

The 1912 Sensation

By R. E. Olds, Designer

Five Times Oversold in May

I have built automobiles for 25 years. Reo the Fifth is my 24th model.

I have watched all the ups and downs of Motordom—all the comings and goings, the successes and failures.

But I never saw a demand like that which developed for Reo the Fifth this year. In April and May we could easily have sold five times our factory output.

My Final Car

Month after month I have told you the story, so you know why this call has come.

I built this car as my final creation, as the capsheaf of my career.

In this car I embodied the best I had learned from 25 years of car building.

This car marked my limit. Every detail showed the best I knew.

I analyzed all steel that went into it. I tested the gears in a crushing machine with 50 tons' capacity.

I used Nickel Steel axles—Vanadium Steel connections. I equipped the car with 13 Timken bearings.

To every part I gave big margins of safety. The carburetor I doubly heated for low-grade gasoline.

I Watched It

Then I took personal charge of the building, for I pledged my good faith on this car.

I saw that the parts were ground over and over, until we got utter exactness. I saw that each car got a thousand inspections.

The engines were tested for 48 hours. Each finished car was tested over and over, until it proved utterly perfect.

We did all this with every car, in the midst of the April rush. We do it today, and shall always do it so long as I build this car.

The Center Control

Then we equipped this car with my new center control. All the gear shifting is done by a small, round lever between the two front seats. It is done by moving this lever only three inches in each of four directions.

I got rid of all side levers, so the front doors were clear. Both brakes are operated by foot pedals.

In these ways I made possible the left-side drive.

Now nearly all makers announce for next season the center control and the left-side drive. But none can use my center control. They still use the old time levers.

The Amazing Price

Then we offered this car—the best I can build—for $1,055. And nothing on the market could begin to compete with it.

The car is long, roomy and powerful. The wheels are big. The body is finished in 17 coats. The upholstering is the height of luxury.

The demand for this car will grow and grow as the facts become better known. I believe that each car will sell twenty.

But the price of $1,055 can't last long. The price is too low for profit, and materials are advancing. Before very long advancing costs will compel us to ask something more for this car.

1,000 Dealers

Reo the Fifth is shown by dealers in a thousand towns. If you will write for our catalog, showing the various styles of body, we will tell you where to see the car. Address

R. M. OWEN & CO., General Sales Agents for REO MOTOR CAR CO., Lansing, Mich.

Canadian Factory, St. Catharines, Ont.

(9)

Cave Vs. Cold Storage.

I am selling apples at $1.25 per bu. this first day of May. Cave holding 3,000 Bu. for $500. Cave will last forever. Guaranteed to keep fruit. Ventilation perfect. For plans write to J. T. Swan, Auburn, Nebraska.—Adv.

Fruit Crop Reports For June

(Special Note.—Many Fruit-Grower correspondents failed to fill out and return the report cards we sent them about June 15, and therefore many important orchard sections are not represented in this summary. It is likely that the apple crop for 1912 will be one of the best harvested in many years, and the combined efforts of all will be needed to market this crop satisfactorily. The Fruit-Grower has undertaken to lay before its readers every month reports covering the entire country which will show just what conditions are in every district. In order to make these reports complete we need the help of everyone. If a report card is sent you, fill it out WITHOUT FAIL, and return it promptly. If any important apple-producing section is not covered by these reports, tell us about it, and if possible suggest name of some person to act as correspondent. We believe that this year's apple crop can be marketed profitably, no matter how large it may be, if we work together in arriving at facts and in trying to distribute the fruit properly. You cannot do this work alone. You need the help of all Fruit-Grower readers, and they are entitled to this co-operation in crop reporting on your part. There's nothing to lose by having the real facts known, and a lot to lose if they are not known.—Editor The Fruit-Grower.)

Crop Reports for June.

At blooming time many persons wondered if the long-expected bumper apple crop was to be harvested this year, which would eclipse all former yields. If any persons really expected such a crop, they are doomed to disappointment, for while the 1912 crop now looks promising, it is pretty certain that this country will not have anything like a record-breaking crop, although it may exceed any crop of the past six or eight years.

Weather conditions have been very unfavorable in many sections; in some of the states of the Middle West rains at blooming time prevented pollination, and apples have dropped badly; excessive moisture and low temperatures have caused apple scab to be very bad in other sections, and this same condition prevented effective spraying. In many sections insects, such as canker worms, tent caterpillar and curculio are much worse than usual, and these insects are taking heavy toll. Their work will be more apparent as the season advances and later reports will give a better idea of the extent of the injury.

In sending out cards for June we asked all correspondents to give an idea of the size of the 1912 crop, as compared with last year's crop, and also as compared with the best crop ever grown. It is significant that in all the older apple-producing sections, where the bulk of the fruit comes from, after all, no one ventures to say there will be anything like a record yield this year. When the greatly reduced acreage in these states is considered, it must be apparent that no one need fear a record-breaking crop this season

The crop this season seems remarkably well distributed. Every section where apples will grow reports some fruit, and the marketing of the crop this year will not be as much of a problem as it might have been if this were not the case.

Of the standard varieties grown in the Middle West Jonathans seem to be most scarce. Winesap seems to be giving a good account of itself wherever grown, and poor old Ben Davis is showing up well all through the Ben Davis territory. In the Northeastern apple belt Baldwin, the standard commercial variety, is most promising, so that it would seem as though there should be apples for everyone next fall—but it's a long time until fall, and many things may happen before harvest time.

The peach crop is very heavy in Georgia, Texas, Arkansas and Oklahoma, and in the states west of the Rocky Mountains. In the peach belts of the Northern states — Michigan, Ohio, New York, Connecticut, etc.—the crop varies greatly, but there will likely be plenty of peaches, even though the crop in the Middle West north of Arkansas and Oklahoma is practically nil.

Our reports were made out about June 18, and should be read with this fact in mind, for important changes may have occurred in some districts since that time. The summary of our reports follows:

The latest issue of the Crop Reporter, issued by the United States Department of Agriculture, gives the following figures concerning the condition of apple crop, as compared with June, 1911, and also as compared with the ten-year average. One thing not shown in this report, however, is the decreased acreage in many states, notably in the Middle West, from Ohio westward to Kansas, and the increased acreage coming into bearing in some of the far Western states and in Virginia and West Virginia. It is more than likely that the increased acreage in these states does not begin to approach the acreage of trees cut down in the Middle West. The Crop Reporter's figures, by states, are as follows:

CONDITION OF CROP JUNE 1

State	1912.	1911.	Ten-Yr. Av.
Maine	93	98	91
New Hampshire	90	75	84
Vermont	96	80	88
Massachusetts	85	82	85
Rhode Island	77	82	89
Connecticut	75	85	87
New York	87	80	84
New Jersey	75	78	71
Pennsylvania	66	78	73
Delaware	77	66	70
Maryland	73	68	68
Virginia	75	53	58
West Virginia	75	60	63
North Carolina	80	48	60
South Carolina	64	41	62
Georgia	65	50	57
Ohio	55	75	60
Indiana	51	72	59
Illinois	50	75	57
Michigan	81	69	77
Wisconsin	67	88	79
Minnesota	65	91	78
Iowa	83	92	68
Missouri	80	62	51
South Dakota	75	90	80
Nebraska	67	72	64
Kansas	80	60	56
Kentucky	67	55	56
Tennessee	70	45	52
Mississippi	66	42	57
Alabama	63	45	60
Louisiana	75	33	62
Texas	75	64	70
Oklahoma	78	60	67
Arkansas	81	57	61
Montana	96	85	90
Wyoming	—	82	84
Colorado	90	85	71
New Mexico	82	85	68
Utah	102	75	79
Nevada	99	30	65
Idaho	99	87	87
Washington	96	81	89
Oregon	92	75	85
California	93	77	82
	—	—	—
Average for U. S.	72	69	66

(Note—In studying the foregoing table it should be borne in mind that many states are not important apple-producing districts, and an increase or decrease in the size of crop is not material one way or the other. Taking the states which produce the largest quantities of apples, the showing is somewhat better than a year ago, but the crop indicated is by no means as large as was expected a month ago.—Editor.)

The following reports are from The Fruit-Grower's special crop reporters and are compiled from personal inspection. These reports refer specially to apples; reports of previous months have shown the districts from which to expect peaches.

Arkansas.

Imboden.—Half crop apples set. Very little spraying done; should have about same quantity of fruit as last year.—J. R.

Mena.—Most varieties of apples have set well; very little spraying done. Much better yield than last year is expected. Prospects good for fine crop peaches.—A. H. B.

Springdale.—Apples have set poorly, and are badly attacked by scab; outlook for crop is poor.—J. G. W. S.

Lamar.—Some varieties of apples have set well, others poorly; Ben Davis and Winesap promising best yields; but little spraying being done. Peach crop fine.—G. M. N.

Russellville.—Apples have set fairly well, but blight is bad; very little spraying done. Should have twice the apples we had last year, and best crop in years. Peaches fairly good crop.—C. C. M.

Cato.—Apples set well, but blight has cut short crop of some varieties. Ben Davis, Champion, Stayman Winesap promise best yields.—M. B.

Fayetteville.—Apples set well on older trees, but on young trees have dropped badly; scab is very bad in unsprayed orchards, but most growers are spraying. Crop should be large.—E. W.

Bentonville.—Old apple trees have set good crop; lots of scab, but about half our growers are spraying effectively. Ben Davis, Gano and Maiden Blush promise good crops, Jonathan only fair. Crop should be five times that of last year and equal to our best previous crop.—C. H. C.

Dardanelle.—We have the largest crop of Elberta peaches ever grown here.—F. R. R.

Camden.—We have a big peach crop and need buyers for the same.—J. M. L.

Danville.—Apples of most varieties set well, and we have prospects of largest crop ever raised here, but our growers are not spraying.—G. E. P.

Decatur.—Apples set well on old trees, poorly on young ones. Scab is bad, but most growers are spraying. Will not have over 20 per cent of apple crop, of fair quality.—E. N. P.

Jonesboro.—Apples set well; trees are affected with blight. Cherries are best crop here, and they are very fine; many new orchards being planted. Strawberry and raspberry crops were good.—H. M. C.

Siloam Springs.—Most varieties of apples set well; some scab, but most growers are spraying effectively. Crop promises as good or better than for many years.—H. W. H.

Colorado.

Palisade. — Winesap and Mammoth Black Twig trees have set light crop, other varieties moderate crop; Jonathan, White Winter Pearmain and Ben Davis are best. Our apple crop should be the largest ever shipped from here. Have big peach crop; 1,500 cars from Palisade.—J. H. D.

Dolores —All varieties of apples have set full crops, and all growers are spraying effectively. Our crop should be 25 per cent above average. Peaches, cherries and all small fruits are full crop.—C. H. T.

Delta.—Apples have set well generally, except Winesap. Growers are spraying effectively. Jonathan, Rome, Gano, Willow Twig, Missouri Pippin and Grimes promise best yields. Our apple crop should be twice as large as the best crop ever grown here. In fact, prospects indicate the best fruit crops of all kinds we have ever had.—L. W. S.

Canon City.—Apples set poorly, owing to cold, wet weather while trees were in bloom. Winesap and Ben Davis promise best crops. Leaf roller has been very destructive in parts of the valley, cutting down a splendid prospect to less than one-third of a crop; some orchards lost all fruit.—M. E. S.

Hotchkiss.—Most varieties of apples set too much fruit. Nearly all varieties promise full crop, and growers are spraying effectively. Our fruit crop will be much the largest ever harvested in this section.—T. P.

Grand Valley.—Apples set well, and all orchards are carrying about an average heavy crop of fruit. Jonathan, Rome, Black Twig and Ben Davis promise best yields.—E. H. F.

Idaho.

Boise.—Apples have set well and are growing nicely. Rome, Ben Davis, Jonathan and Winesap promise best crops. Better crop than this section has ever had before is promised.—W. M. B.

Payette.—Apples have not set as well as two years ago, Ben Davis and Rome Beauty being best. Growers spraying well. More apples will likely be shipped than last year, but not as many as two years ago.—J. D. B.

Payette.—All apples set enough fruit to make full crop. Believe we will have more than four times as many apples as last year and more than in 1910, which was our best previous year.—T. A.

New Plymouth.—All varieties set full crops and much thinning will be necessary; growers are spraying better than ever before. It looks as though we would have the largest crop of apples ever grown here.—H. M. W.

Illinois.

Kinmundy. — Apples have set fairly well, Ben Davis being best; not much spraying being done. No peaches. Plums, cherries and pears good crops.—W. B. L.

Quincy.—Apples have varied in their setting, some well, others light crop. We will have apples enough, but not an oversupply.

Kilbourne.—Fine prospects for apples. Plenty of new potatoes, selling at $2.50 bushel.—E. A. B.

Creal Springs.—About half crop of apples; everybody spraying. We should have some good apples next fall.—L. J. R.

Centralia.—Apples are extra clean, with better set than for years, although few growers are spraying; Ben Davis and Winesap are best. This refers to our own orchards, but growers generally report no apples, due to light bloom.—W. S. P.

Hardin.—Apples have set well, some scab is present; Ben Davis, Gano, Willow Twig promise best; Jonathan half a crop. Our crop is better than that of last year. —A. M.

Carmi.—Apples set moderately well, Ben Davis and Winesap being best. We will have much better crop than last year, and perhaps equal to best crop ever grown here.—E. K.

Plainville.—Apples did not set well. Crop will likely not be over half as large as a year ago, and not so good in quality. —J. C. B.

Neoga.—Apples set well, and commercial growers are keeping the fruit clean. Think we will have more apples than last year.—H. A. A.

Indiana.

Lawrence.—Apple crop very light, for we had only 10 per cent of bloom. Will not have more than 10 per cent of last year's crop, and not 2 per cent of our best year.—W. B. F.

Mitchell.—Apples promise 60 per cent of crop, generally clean at this time; more spraying than usual being done. Rome, Grimes and Jonathan promise best yields, in order named. Crop should be 20 per cent better than last year, but not more than 60 per cent of 1896 crop.—J. A. B.

Kansas.

Topeka.—Reports from all over state indicate 71 per cent of apple crop, best reports coming from counties where largest acreage is found.—W. W.

Manhattan.—Apples set fairly well; plenty of pests present, but some growers are spraying effectively. Should have double last year's crop, and three-fourths of best crop ever harvested here.—A. D.

Osawatomie.—Apples promise as good crop as we ever had, and perhaps better than any previous year.—F. P.

Ottawa.—Apples set about 80 per cent of full crop; apple blotch, scab and blight are all prevalent, and growers are having only fair success in spraying for blotch, wet weather making the fungous diseases hard to fight. Should have more apples than last year, except Winesaps.—C. H. G.

Wichita.—Apples set well; codling moth and blotch are bad, and only a few growers are spraying effectively. Winesap, Ben Davis, Maiden Blush, Grimes and Jonathan are best varieties. Will likely not have as many apples as in 1910, but of better quality, although it is early to say to what extent blotch will be controlled.—E. G. H.

Bethel.—About 60 per cent of apple crop indicated; not much spraying being done. Apples are dropping badly now.—J. G.

Edwardsville.—About half a crop of ap-

20th Century Grader

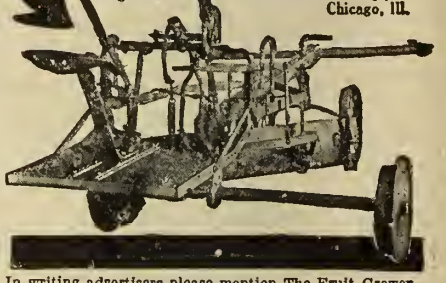
LET our Free Book tell you all the remarkable money-saving, labor-saving, time-saving advantages of this Famous 20th Century Grader over any other tool intended for the purposes. None compare on any work of grading and leveling roads, building ditches, levees, borders, irrigation laterals, leveling land, cutting sage brush and weeds, scalping alfalfa, cleaning streets and sidewalks and its many other uses.

Does 40 Men's Work—
Pays Back Its Cost In 20 Days

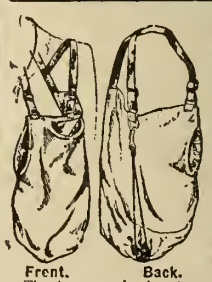
It's the original one-man machine. Thousands in use—all giving splendid service and satisfaction.

FREE BOOK
Tells All Facts and Figures

It is built of steel, lasts a lifetime. Send your name on postal for interesting free book of facts and figures—also letters and photo-illustrations from owners. Address
The Baker Mfg. Co.
530 Hunter Bldg., Chicago, Ill.



In writing advertisers please mention The Fruit-Grower.



Ideal Fruit Picking Bag

Made of heavy weight duck and so arranged as to equalize the load on both shoulders.

The openings are arranged so both hands can be used in picking and the draw string is arranged so the fruit can be let out at the bottom in emptying the bag.

The bag can be let down to the bottom of the barrel before opening the draw string, thus not bruising the fruit.

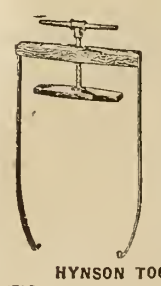
This is the best and handiest arrangement for picking fruit that has ever been offered. A trial will convince the most skeptical.

Sample Postpaid, $1. Agents Wanted

BARKER MFG. CO.
35 Ambrose Street. Rochester, N. Y

In writing advertisers please mention The Fruit-Grower.

Pack Your Apples



and other fruits with the
"NEW ST. LOUIS BARREL HEADER"
—the standard Barrel Press of the U. S. Strongest, simplest and quickest acting press made. As light and strong as steel and hardwood can make them. Thousands now in use by most successful fruit growers everywhere. Indispensible to every grower who would pack his fruit evenly and tightly before heading his barrels. Special price in quantities. Order today. Every header fully guaranteed.
HYNSON TOOL & SUPPLY COMPANY
4756 Easton Avenue. St. Louis, Mo.

Lightning Fruit Picker
FRUIT GROWERS' SENSATION
Stand on the ground and pick fruit with rapidity and ease. The tool is not topheavy by the weight of the fruit. You do not lower the tool to empty. Delicate fruits can be picked from any height without bruising. Our circular shows the Fruit Picker in operation. Agents wanted to demonstrate. It sells itself.
THE LIGHTNING FRUIT PICKER CO.
3939 McPherson Ave. St. Louis, Mo.

BUY YOUR APPLE BARRELS EARLY and pay for them in the fall on easy terms. Write for full particulars. Also new and second hand egg cases, fillers, etc., etc
P. McKANNA'S SONS, COOPERAGE, Honesdale, Pa.

PRIZE APPLES OR CIDER APPLES?

For the past four years the great state of Pennsylvania has made a special appropriation of from $30,000 to $40,000 annually to teach the fruit grower how to use Lime-Sulfur washes, and incidentally, to warn them against the use of "Scalecide," in spite of which the demand for "Scalecide" has increased from year to year and apples from trees sprayed with "Scalecide" for five years took all the first prizes at the Pennsylvania Horticultural Society meeting in 1910; three silver cups, the Adams County sweepstakes and 20 first prizes at the meeting of the same society in 1911. Which pays best? Prize apples or cider apples? "Scalecide" has no substitute. A postal request to Dept E will bring you by return mail, free, our book, "Modern Methods of Harvesting, Grading and Packing Apples," and new booklet, "SCALECIDE, the Tree-Saver." If your dealer cannot supply you with "SCALECIDE" we will deliver it to any R. R. Station in the United States east of the Mississippi and north of the Ohio Rivers on receipt of the price; 50-gal. bbls., $25.00; 30-gal. bbls., $16.00; 10-gal. cans, $6.75; 5-gal. cans, $3.75. Address, B. G. PRATT COMPANY, 50 Church Street, New York City.

H. J. WEBER & SONS NURSERY CO., WESTERN DISTRIBUTING AGENTS, NURSERY, MISSOURI

ples; but little spraying being done. More apples than last year, and perhaps half our record crop.—E. T.

Council Grove.—Good crop of apples promised; canker worms are bad, and only a few large growers spray. Crop will be about the same as last year, highland orchards having better crop, but orchards in lowhands not so much fruit. I will have about 4,000 boxes Winesap and Missouri Pippin.—J. S.

Newton.—Most varieties of apples have set good crop, but blight and canker worms are quite bad; moderate spraying being done.—R. W. C.

Tonganoxie.—Winesap, Missouri Pippin and Black Twig apples have set well, other varieties only fair; some codling moth damage, but little trouble from diseases; few growers spray. Crop should be much better than last year, and about 75 per cent of a full crop. Fruit is growing nicely and should be of excellent quality.—G. C. R.

Hutchinson.—Apples have set well and crop promises to be as heavy as has been produced in this county in past five years.—W. H. U.

Kentucky.

Lewisport.—Apples set irregularly. Crop as a whole should be 50 to 60 per cent of full yield, as against a very light crop a year ago.—E. N. A.

Tip Top.—Should be a fair crop of apples in this county, and fruit looks cleaner and better than usual. Corn is late and does not look well.—G. C. S.

Bardwell.—Apples have set well, Winesap, Black Twig, Delicious and Maiden Blush being best; growers are spraying more generally. Crop should be about half a full crop.—G. G. W.

Bayou.—Apples set well, but have dropped somewhat; we still have promise of half a crop.—G. N. McG.

Massachusetts.

Rowley.—Apples did not set well and have been hurt by insects, tent caterpillar, Brown-tail and gypsy moth being worse than ever before. Crop should be about the same as last year, and perhaps a third of our best previous yield. Peaches half crop.—J. S. W.

Amherst.—Apples have set well, and crop should be larger than last year.—F. A. W.

Ipswich.—Apple crop is very uneven, some trees loaded, others with but little fruit; tent caterpillars are very bad this year. Baldwins promise best yield, and our crop should be better than last year, but not over 60 to 70 per cent of full crop.—A. F. T.

Michigan.

Holland.—Winter apples set well, but summer and fall varieties promise light crops. Crop should be slightly larger than last year. Scale is killing many trees. No peaches; cherries light crop.—R. M.

Fennville.—Apples set very well, and crop should be as large as we have ever grown, and much larger than last year's. Baldwin, King, Wagner and Duchess promise best. No peaches, plums, pears and cherries.—T. S.

Parma.—Apples set very sparingly and crop will compare unfavorably with that of 1911. Small fruits good crops.—O. S. L.

Clinton.—Apples set well, and now promise 10 per cent more fruit than last year, or about 80 per cent full crop; too early to tell yet, however.—D. W.

Hart.—Nearly all varieties of apples set well; no damage from insects, but some scab present. Think we may have double last year's yield, but not as large as in other years. No peaches this year.—B. G.

South Haven.—Apples set fair to good; crop will likely not be as large as 1911, but will make a good ten-year average.—F. F. F.

Allegan.—Apples set well, and we should have a third more apples than last year, or about 75 per cent of full crop. Baldwins promise best.—W. H. S.

Colona.—Late apples set fair, earlier sorts very shy. Crop should be 60 per cent of 1911 crop, and about 40 per cent of full yield. Baldwin and Spy promise best.—A. B. B.

Missouri.

Columbia.—Reports to State Board of Horticulture indicate 72 per cent of apple crop for the state, Northwest Missouri having best prospects. Ben Davis, Gano and Winesap set well, but Jonathan and York Imperial set poorly everywhere. Only about 16 per cent of correspondents are spraying, but insects and diseases have not yet been very harmful.—W. W. C.

Poplar Bluff.—Apples set poorly, and indications are that we will have a very light crop.—J. N. H.

Cedar Gap.—Apples set about a full crop, and fruit is clean at this date. Indications point to about the best apple crop we have ever had.—L. E.

Chillicothe.—Apples generally set light crop, and growers are not spraying.—E. M.

Amoret.—Apples set well, and our crop should be the best this orchard has ever produced. Estimate the crop of Darby Fruit Farm will run 30,000 barrels.—J. F. R.

Richmond.—Apples set well, but pests are hurting the crop somewhat, with but little spraying being done. Crops should be about an average one.—J. S. M.

Rushville.—Apples set variably, Ben Davis, Gano, Rome, Black Twig and Winesap promising best crop. We should have one-fourth more apples than last year, or about 65 per cent of full crop.—B. F. S.

Maryville.—Apples set extra well, except Jonathan, which are very scarce. Should have three times as many apples as last year, and as good a crop as any in the past ten years.—C. C. M.

Marionville.—Apples set fairly well; insects and diseases not very harmful yet. Crop is much better than last year, but only little more than an average crop; better quality fruit should be harvested, but many growers are over-estimating the crop, as there has been a heavy drop.—W. T. F.

Pilot Grove.—Apple crop promises to be a good one, and of good quality.—J. E. S.

Dixon.—Apples set fairly well, but some are very knotty. Crop should be better than 1911, but not up to yield of 1906.—L. A. R.

Brookfield.—Apples set 60 per cent of crop; yield will likely be less than last year.—L. D. K.

Rogersville.—Apples set fairly well, but insects and scab are at work, with but little spraying being done.—A. W. H.

Parkville.—Half crop of apples promised, Gano, Black Twig and Winesap being best. Should have twice as many apples as a year ago, but still only half a crop. No peaches; cherries full.—J. H. D.

Laclede.—Apples set fairly well, but very little spraying is being done; fruit is still dropping, and we will likely not have as many apples as last year.—Mrs. C. S. W.

Seymour.—Apples set fairly well, although some orchards have full crops. This season's crop will likely equal the best crop ever grown here.—S. L. W.

Mound City.—Apples set well and are growing nicely; believe we have best prospect we have had in ten years. Season is favorable; alfalfe hay making three tons to acre at first cutting.—W. S. K.

Richland.—Apple trees set all the fruit they can bear, but little spraying is being done. Crop is better than 1911, but not as good as some years, taking the district as a whole.—E. A. S.

Ozark.—Two-thirds of an apple crop promised, which is much better than last year; but little spraying being done. No peaches.—J. H.

Beaman.—Never had a finer prospect for apples and for Keiffer and Garber pears; no peaches.—R. K. T.

Oregon.—Apples set well, and growers are spraying effectively. Crop is much better than last year, and about 75 per cent of 1910 crop. Many trees are sick, suffering from dry weather of 1911.—J. H. M.

St. Joseph.—Apples generally have set well, although just now there is complaint of dropping. Growers generally are not spraying, and scab is affecting unsprayed fruit.

Pomona.—Apples set fairly well, and crop promises 80 per cent of full yield. Growers are spraying effectively.—A. B. C.

Skidmore.—Apples set light crop, and as effective spraying is not generally done, curculio is taking heavy toll. Crop will be about one-third that of 1911, or perhaps 15 per cent of full crop.—W. W. G.

Mt. Vernon.—Apples set variahly, rain at blooming time causing poor pollination. Crop should be better than 1911, but considerably less than our best crops.—J. C. G.

Lebanon.—Apples set well, but some scab is in evidence, it being qulte bad on lower limbs of trees. Crop will be larger than 1911, because of larger acreage.—A. T. N.

Columbia.—Apples set fairly well for most varieties, and fruit is cleaner than usual. Crop is much better than last year and is fairly comparable to the best crop we ever had.—J. C. W.

Nebraska.

Falls City.—Apples set good, but not excessive, crop and fruit looks well. Crop is much better than last year's, and compares favorably with 1910; Black Twig, Ben Davis, Gano and Winesap being best.—A. F.

Table Rock.—Apples set well, but in most orchards Jonathans are light crop. Crop is perhaps double that of last year, and equal to our best crop.—O. D. H.

Johnson.—Apples promise a good crop, perhaps 10 per cent better than any previous crop, Winesap being best variety. Sprayed orchards could not promise better, but unfortunately not all growers spray.—G. S. C.

New York.

Albion.—Apple crop is generally promising, Baldwin being specially good. Growers are spraying and fruit is clean and sound. Pear psylla is at work on pear trees; Bartlett crop is short.

Sodus.—Baldwins set well, other varieties shy; growers spraying effectively. Baldwin, Greening, Spy and Twenty Ounce are most promising varieties; no Russets. Crop will average but little better than last year. No Bartlett pears.—E. B. N.

North Rose.—Apples set well, especially Baldwin and Ben Davis, and we should have about 85 per cent of last year's crop; last year we had the largest yield we ever had, on account of so many young orchards coming into bearing and the better care given older orchards.—W. L. S.

Geneseo.—Apple and peach crops promise good yields; season is late, but very promising.—S. F.

Jay.—Apples set very well indeed and at present prospect is for 50 per cent more apples than last year, and the best crop we have had in ten years. Season is late, but everything is coming along nicely.—H. T. S.

Interlaken.—Apples set well, especially Baldwin. Crop will be about same as last year, but not up to our best crops. Peach trees injured by cold, and crop is light; pears scarce.—W. A. B.

Halls.—Apples set fairly well, Greening and Baldwin being best varieties. More trouble from insects and diseases than usual. Should have two-thirds of last year's crop.—T. B. W.

Penn Yan.—Apples set very well, Spy, Greening and Baldwin making best showing. Too early for accurate estimate, but indications now point to 50 per cent more apples than a year ago, but not more than 75 per cent of the crop of 1896.—R. L. E.

Valois.—Apples did not set well, and crop will not be nearly as large as last year; Baldwin and Spy promise best yields. Grapes are making a fine growth, but many vines were winter killed. In a thirty-five-acre vineyard planted last year, many vines that started this spring have since died.—K. M. C.

North Carolina.

Waynesville.—Apples set well, most varieties being very promising, and apples are sound and smooth. We should have more apples than last year, and perhaps the best crop ever grown here. Peaches full crop. The Haywood Fruit Exchange has been incorporated to market our apples.—B. H.

Mt. Airy.—Apples set fairly well, and we should have more apples than last year, but not up to our best crop.—S. O Co.

Ohio.

Proctorville.—Apples set well, except Rome, which have 50 per cent of crop; not much injury from pests. Should have five times as many apples as last year, but not over half our record crop. Peaches, plums and pears have full crops; conditions good, except a little dry just now.—U. T. C.

Batavia.—Apples did not set very well, and some scab has developed, wet weather having interfered with spraying. Will not have over 40 per cent of last year's crop, and about 20 per cent of full crop. Pears good crop; peaches very light; grapes looking well, but few grown here.—J. H. D.

Gahanna.—One-third of crop of apples, with more scab than usual. Last year we had the best crop we ever produced, but this year will not have more than 20 per cent of the 1911 yield.—C. E. D.

Gypsum.—Apples set fairly well and a good average crop of fruit is promised, or about double last year's crop; Grimes, Ben Davis and Jonathan most promising; Baldwin very irregular. Probably 10 per cent of our peach trees winter killed; uninjured trees have good crop, for fruit buds seemed to endure greater cold than the trees.—W. M.

Oklahoma.

Chandler.—Plenty of apples set for a crop, Missouri Pippin and Winesap being best. An immense crop of peaches is promised.—J. S. D.

Sterling.—Apples did not set well, and crop will be light. Peach crop is the best ever, and grapes look fine.—J. G. M.

Ringwood.—Apples set fairly well, and we should have 90 per cent of last year's crop. Many fruit trees are burned on northwest side by an electrical storm.—H. C. G.

Guthrie.—Only a few apples, but peach crop is the most promising we have ever had. Last year's drouth killed 50 per cent of apple trees and injured the remainder.—G E.

Pond Creek.—Apples set well, but are falling badly; not as much spraying as last year, but not up to record crops. Apricot and peach crops are good.—J. I. E.

Tahlequah.—About 75 per cent of apple crop promised; Black Ben, Ben Davis and Delicious most promising. Should have double last year's crop, and perhaps the equal of our heaviest yield. Plums, cherries and peaches are all fine crops.—D. N. L.

Ada.—Apples set well; codling moth prevalent, and but little spraying being done. Several cars of peaches will be ready to send out from here the last of July.—J. R.

Norman.—Good crop of apples, and fruit is clean where sprayed; perhaps half our growers spray. Better crop of apples than last year. Peach crop is very fine, especially Elberta.—M. P.

Tecumseh.—Apples set well and promise better crop than last year. Peaches full crop.—E. . D.

Oregon.

Medford.—Apples set well, and fruit is very clean; our growers all spray, under penalty. We expect to ship about five times as many apples as last year and about three times as many as were ever shipped in a single season before. Pears are our main crop, and we expect the greatest yield in history of the valley.—A. H. M.

Salem.—Apples set fairly well, and we expect at least half a crop, or about twice as many as last year.—C. O. C.

Milton.—Apples set well, practically all varieties, but Winesap dropped badly. Should have twice as many apples as last year, and just about the same as two years ago. We should ship 200 cars of peaches and 250 cars of prunes; are now harvesting a fine crop of cherries.—W. C. H.

Mosier.—Fair crop of apples set, Newtown promising best yield. Much larger crop than 1911 is indicated, but considering increased acreage, it will still not be as heavy a crop as in 1910.—A. P. B.

Cove.—Apples set well, but many varieties shed badly. Should have twice as many apples as last year, and perhaps one-fifth more than our best crop, if the unusual rains do not cause too heavy drop.—K. J. S.

Hood River.—Apples set well, especially Newtown and Jonathan; Spitzenberg lighter crop. Should have three and a half times as many apples as last year and one-half more than in 1910.—E. H. S.

Pennsylvania.

Light Street.—Apples have set sparingly, and not much spraying is being done. Should have 75 per cent of last year's crop.—H. A. T.

Waynesburg.—Apples set well generally, and we have promise of about one-fourth crop.—A. J. VanC.

Mifflintown.—Apples set poorly, and we will not have nearly so many apples as last year. No peaches.

Vermont.

Middlebury.—Apples set well, but tent caterpillars and canker worms have caused injury; few growers spraying. Rhode Island Greening, Spy and McIntosh most promising varieties. Crop will be heavier than in 1911, and well-cared-for orchards will have as heavy crop as ever known here.—C. L. W.

Addison.—Apples set very well; tent caterpillars are causing damage, only about half the growers spraying. Crop promises larger than last year, but not up to crop of 1910.—A. T. C.

Bellows Falls.—Apples did not set very well; insects and diseases worse than usual, but growers spraying better than usual. Probably half of last year's crop, or about 25 per cent of full crop.—A. A. H

Virginia.

Crozet.—Apples are well set, and we should have perhaps 60 per cent of full crop, which is much better than last year. Mountain orchards have full crop of peaches; most of the commercial peach orchards are in the mountains, too.—W. W.

Waynesboro.—Apples set fairly well, Ben Davis, Winesap and York promising best crops, in order named. Growers are spraying, and we should have 50 per cent more apples than last year, or about 60 per cent of our best crop.—J. C.

Winchester.—Apples set very well, and we should have more apples than ever before.—B. M. K.

Washington.

Selah.—Apples set well, and spraying has been more thorough than usual; Jonathan and Rome Beauty promise best, Winesap not so good. Will probably have more apples than ever before, because of young orchards coming into bearing. This section will have the largest crop of Elberta peaches ever harvested.—E. H. P.

Greenacres.—Apples well set and very clean, Jonathan, Wagner and Winesap being most promising. Should have more apples than last year. Peaches dropping badly. Grapes fair crop; May Duke cherdy crop large.—J. C.

Chelan.—Prospects indicate a bumper crop of all kinds of fruits here.—O. R. S.

Chehalis.—Apples set fair crop, but we should have more fruit, as last year was not a good season.—J. M.

Snohomish.—Apples set good crop, and we should have twice as many apples as last year; in fact, we perhaps never had beter prospects than now.—E. C.

Sunnyside.—Apples promise the best crop we have ever grown at this end of the valley, because of young orchards coming into bearing.—N. R. J.

Chelan.—Growers are ordering boxes earlier and in larger lots than ever before, and our crop will at least compare favorably with the largest yield we have ever had.—E. S. M.

Kennewick.—We have few apple trees in bearing here yet, but they promise good crop, perhaps 25 cars. Expect 500 cars of peaches here.—E. M. S.

Puyallup.—Apples promise perhaps half last year's crop. Pears, plums and prunes 25 to 40 per cent crop. All berries are abundant crops. About six carloads of rhubarb has been canned here and three or four cars shipped fresh.

Naches.—Large crops of all fruits except pears, which bloomed heavily and then dropped.—R. N. S.

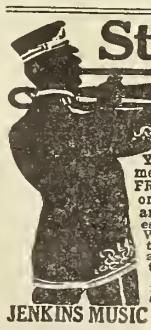
West Virginia.

Inkerman.—Apples set light crop, and codling moth and curculio are taking heavy toll, as not much spraying is done. Crop will be lighter than last year.—J. A. B.

Lucile.—Apples set fair crop, and we should have half of last year's yield.—J. M. D.

Charlestown.—Apples set only fairly well, and we will not have over half as many apples as last year. Peaches fine crop on mountain land, none in the valleys.—W. C.

Lebanon, Colo.—We have the best possible crops of all kinds of fruits, apples, peaches, pears, prunes, small fruits, etc.—S. H. P.



Start a Band

BIG PAY Easy to Learn By our New Plan

You can easily learn to play any instrument. We give a fifty lesson certificate FREE to customers. Organize a band or orchestra in your town. Lots of pleasure and you get big pay. We are one of the oldest and largest instrument houses in America. We have everything and we guarantee our goods to be right in price and quality. Send your name and address today and we will give you full particulars and free catalog explaining everything. Don't buy anywhere at any price until you hear from us. Write a letter today saying: "Please send me Free catalog of musical instruments."

JENKINS MUSIC CO., 127 Jenkins Bldg., Kansas City, Mo.

Proven Fruit Lands
Rogue River Valley
Frost Free—Shipping Point
Address
Hugo Development League
HUGO, Oregon **PEARS**

OUR HOME FOLKS

Conducted by MRS. RUTH MOTHERBY. Address all Communications to Home Editor The Fruit-Grower

The Home Picnic.

Do you enjoy picnics? We do. We never lose an opportunity to eat a picnic dinner, and we've planned for this sort of entertainment, and added to our supplies, until now our picnics are characterized as having all the comforts of home. If you come visiting us, some warm afternoon, you are more than likely to be invited to take tea with us out in the orchard, and you'll have a much pleasanter time than you would if waited upon in the house by a weary hostess.

We have a large white oilcloth cover for a home-made table standing under the trees, and we buy white paper napkins by the hundred. There is a large cheesecloth cover to put over the table until we are ready to sit down, which protects the food from flies. We had wooden plates for ordinary occasions, although we also have a full set of common white hotel dishes bought purposely for picnics. We have teaspoons of aluminum.

A long bench is placed on either side of the table, instead of chairs. We have a camper's stove, which enables us to have hot tea or coffee without building a fire in the orchard fireplace—a queer looking but very handy contrivance built by the boys to be used when an open fire for cooking purposes seems a necessity. This enables them to have a hot fire, with a small amount of fuel, and there is absolutely no danger of it spreading. This fireplace is built of brick. We have a small table, near by, which is used as a cooking table, and here the chafing dish and an alcohol stove for a teakettle may be found. We have an enormous dishpan fitted to a small wagon in which we carry the dirty dishes to the pump to be washed. It is also useful when conveying the picnic lunch to the orchard. We have hammocks and lawn seats, and plenty of cushions stuffed with excelsior and covered with oilcloth. We keep the grass in our orchard as nicely cut as a city lawn, and so always have on hand a nice little stack of new-made hay for the benefit of those to whom hay is absolutely essential to a comfortable after-dinner nap! We also have a tent, with a good floor and a strong cupboard with a lock, where we keep many of our picnic necessities.

Lest some of your readers should be horrified to hear of an orchard with grass in it, I hasten to explain that our new orchard is kept as carefully as a corn field; but we have an old orchard, growing close to our back door, which boasts a thick carpet of grass, and some fine old trees that afford plenty of shade, and this orchard brings more solid comfort to the family than all the rest of our farm put together. We love every tree, and when one of the most ancient was blown down, last summer, the children wept as if they had lost a dear friend. One huge old apple tree supports a swing, and a small platform is built in the branches of another, while a cot bed deprived of its legs swings from two branches of a cherry tree, forming a comfortable lounging place, if not an object of artistic merit. The boys were well pleased with themselves when they got that bed swung to suit them. As you may imagine, we pretty nearly live in the orchard when the weather is good, and it saves doing a lot of housework.

But I started to tell you something about our picnic lunches, for we have put up so many of them that we call ourselves experts. By "we," I mean my two daughters and myself; but there are two boys in the family and an old grandfather, all of whom shine on picnic days. The grandfather would rather cook something out of doors than eat or rest any day. He is perfectly happy when set to work, while the boys will almost quarrel to see who shall be permitted to do certain things that they'd never dream of doing in the house. They have invited the family to more than one meal out of doors that they got without help, and those meals taste very good to the tired mother, as you may imagine.

When there is to be a picnic meal, the first question usually is, "What kind of sandwiches shall we have?" When we build an open fire in that wonderful fireplace, we make ham sandwiches, using two slices of bread cut rather thin and spreading a paste between them of chopped ham mixed with salad dressing. Then we toast these sandwiches on an iron grate made to cover the open fire, turning them with a wide knife used to turn pancakes. We serve them hot, and nothing could taste better We take turns toasting them so as to serve them hot as fast as we eat them.

When the boys get a meal, they are quite likely to cook meat over the open fire, and roast potatoes in the ashes, and they have been known to make pancakes and cook them as they are wanted. They really seem to enjoy catering to the family, when they can do it in camp style.

Sometimes the girls make rolls, which they split lengthwise, removing the soft part from one half. The hollow thus formed is filled with cream cheese softened with a little whipped cream; then the two halves are put together and tied. They are very good. When company is expected and something extra nice is wanted, they stir chopped walnuts and some minced olives or pimentos into the cheese and tie the rolls together with a ribbon.

When we have a little of everything and not much of anything, we make club sandwiches, having several thin slices of bread in each, and using different meats for the separate fillings. It is really quite wonderful what appetizing mixtures can be made with lettuce, cheese, pimentos, and a very little chopped meat, or nuts, with good salad dressing. Fine blanched almonds toasted, but not salted, and ground fine in the meat chopper make very nice filling for sandwiches. We have often utilized so small an amount of meat left from a previous meal that we couldn't positively have used it as a part of a meal in the house, for the family would not have been satisfied. But, when chopped and mixed with dressing, and used as one layer in a club sandwich it has gone a long way towards making a good meal. Sometimes we use cold boiled eggs for a second layer, and crisp bacon for a third layer. But we seldom have two layers of meat in one sandwich, for we like pimentos or cheese better.

Sandwiches, fresh fruit, a slice of cake and a cup of tea make a fine picnic supper. But we usually have something hot in addition to that, because the girls want to cook something in the chafing dish, or the boys want to use their fireplace. If there are no boys and girls to enjoy themselves in this way, and you can't borrow any, just take the simpler meal out of doors—you and your husband —and enjoy yourselves. If you can't take comfort in that way, something must be wrong with you! It can't be because you are growing old, for the grandfather in our home enjoys picnics more than any of us.

LAHELIA DAVIS.

The Help Problem.

There was a short letter in this department for March that won my hearty approval. It was by Emily Mayhew, on the folly of overworking, and the only criticism that could be made concerning it was that it gave no suggestions to those who are willing to pay for help, but don't know how to get it. I agree with her that it is wrong to do work that we are able to hire done, when the world is filled with people who are in desperate need of the money we could pay for having it done. I, too, would rather wear plainer clothes, and do without luxuries, so as to be able to hire my work done, than to work myself to death to possess things that I can't take to the cemetery with me. I've known many a woman to work herself into the grave to get things that she did not live to use, and that no one valued very much after she had gone. I'm willing to work and save to get anything that will make my work easier, but I'm not going to gallop into an insane asylum in an effort to buy a carpet and a set of furniture that my neighhor might envy.

But I started out to offer a few suggestions on the help problem. To begin with, when I hear either men or women complaining that they can never find help that will do their work to please them—that they never had satisfactory help and never expect to, I set them down as cranks. They are either too mean to pay a fair price, or to recognize honest effort, or too narrow minded to know that there may be more than one right way to do a certain task. I have never had help from whom I could not learn something. I have never had help who were not glad to learn of me. But I do not antagonize them in the beginning by assuming that, because I was paying them, that they must do everything exactly as I had been in the habit of doing it. "Try your way first, if you like," I tell them, "and then we'll try mine, and we'll abide hy the results."

"But you must first get your help" says one of the class who claim that it is impossihle to find anyone to help.

It is impossihle to those who have no imagination, and to whom the word, help, brings a vision of a human machine cast in the mold of the human machines of fifty years ago. Times have changed, and so has the help question, and we who wish to become employers have got to meet the new conditions if we expect to get anyone to help us. We simply won't find anyone to put in long hours, for the meager pay and poor fare that was accepted without question a few years ago. Today, there is a spirit of independence among working people that we have got to recognize. We've also got to recognize the fact that it is better to get a little help than none at all. We have got to use our hrains, and figure out some way to revolutionize our own methods.

When the farm is not so far from a city as to make railway fare prohihi-

17¢ a Day Buys a Genuine Elburn Piano

We have other well-known Standard Pianos like the Steinway, Vose, Kurtzmann and Harwood. We sell standard, guaranteed, well-known pianos only. We have been in business many years and ours is the largest house in our territory and not only that, we are recognized and known to be one of the largest music establishments in the world. We have eleven stores scattered through the central west. We can and we will **save you money.**

Easy Terms, Low Prices, Long Time

You should get our Jenkins Plan at once; it is a wonderful money saving, satisfaction giving plan. We have thousands of satisfied customers. We can show you great bargains and make it easy for you to buy a piano. If you want a second hand, used or sample piano we can give you a special bargain. We refer to the editor of this paper, to your nearest banker, and to thousands of customers and likely to some customer you know. Don't buy or agree to buy from anyone at any price on any terms until you get the Jenkins plan, prices and particulars. We will write you fully, with description, terms and other valuable information. This will not cost you a cent or put you under the slightest obligation to buy. On a postal or in a letter just write "Please send prices and particulars about your piano offer."

J. W. Jenkins Sons Music Co., 505 Jenkins Bldg. Kansas City, Mo.

We Offer This $15.00 Canner and $2.00 Capping Steel For Only $8.00 or 3 For $22.50 During June

This canner is used by the government in the canning clubs. Miss Vallie V. Woodruff, of Converse, S. C., employed by the government, writes us as follows: "Out of 14 girls who exhibited their product, 8 of them used Farm Canning Machines, and not one of them lost a can of anything, either tomatoes or other vegetables or fruits, but every one of the others lost from 30 to 78 cans." Under the same instructor those using our canner had perfect success, while others using different makes loss was heavy. Every customer who purchases this canner is delighted with it, for it is so easy to operate.

It comes ready set up for operation, and you can be canning on it out under the shade of the trees in 20 minutes after you take it out of the shipping crate. Needs neither cook stove nor furnace to operate it on. It burns ordinary stove wood and works any kind of glass or tin cans. Daily capacity 400 to 1,000 cans. Shipping weight, 50 pounds. This outfit complete consists of 1 canner, 1 capping steel, 1 soldering counter, 1 can tray, 2 lifting hooks, 1 charcoal furnace, 1 pair can tongs, and a book of instructions, all for $8.00, or 3 for $22.50. We will refund the purchase money to any customer if this canner fails to do perfect work We quote on cans at the factory as follows:

100 2-pound cans, $2.25; 250, $5.00; 500, $8.50 100 3-pound cans, $3.00; 250, $6.00; 500, $11.00.

Above prices include crating and solder hemmed caps. Cut this ad. out, send to us with $8.00 for one outfit, or $22.50 for 3, and get a canner that will do your work to please you.

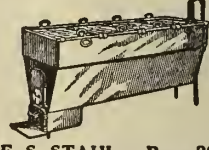
FARM CANNING MACHINE COMPANY, Dept. Fruit-Grower, MERIDAN, MISS.

If you live in Georgia send your order to G. L. Eubanks, Union City, Ga.

Make More Money Out Of Your Fruits and Vegetables

Don't let your surplus fruits and vegetables go to waste. Can them, the same as a large canning factory. Small investment, big profits. Easy to build up a profitable business of your own, on the farm with **STAHL**

Canning Outfits



Made in all sizes. Prices $4.20 up. Fully guaranteed. Over 100,000 in use. I furnish everything needed to make a complete canning factory on the farm. I will send you my great Canners Book Free. Describes Canners and How Big Profits Are Being Made. Write today. Now.

F. S. STAHL, Box 202 QUINCY, ILL.

JUST

what you need when you come home tired after a hard day's work—a

Victor

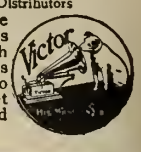
to refresh you with its delightful music.

Why not hear the Victor? Write us today and we'll send you complete catalogs and tell you the nearest Victor dealer. He will gladly play any Victor music for you, and sell you a Victor ($10 to $100) or Victor-Victrola ($15 to $200) on easy terms if desired.

Victor Talking Machine Co. 23d. and Cooper Sts. Camden, N. J.

Berliner Gramophone Co., Montreal Canadian Distributors

Always use Victor Records played with Victor Needles —there is no other way to get the unequaled Victor tone.



Gem City Business College

Quincy, Illinois

Annual attendance 1400. 23 teachers. Students from majority of states. Occupies its own $100,000 specially equipped building. **Good Positions** await our graduates. Thorough courses in Shorthand, Typewriting, Bookkeeping, Actual Business Practice, Penmanship and Mathematics. Write for our beautiful illustrated catalog and year book free.

D. L. Musselman, Pres., Lock Box 36, Quincy, Ill.

TWO LARGE AUTOS TEN EVANS PIANOS $2,050 IN CASH

GIVEN AWAY

Grand $10,000 Prize Contest. Every contestant guaranteed a prize. You may enter this contest if you live anywhere in the United States outside of Des Moines and Polk County, Iowa. Send stamp for description of autos and pianos and other information. Write me NOW.

E. T. Meredith, 87 Success Bldg, Des Moines, Ia

Genasco
THE TRINIDAD-LAKE-ASPHALT
Ready Roofing

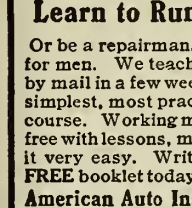
Trinidad Lake asphalt is Nature's everlasting waterproofer—and that's what Genasco is made of. Write for samples and the Genasco Book—free.

The Kant-leak Kleet, for smooth-surface roofings, prevents nail-leaks.

The Barber Asphalt Paving Company

Largest producers of asphalt, and largest manufacturers of ready roofing in the world.

Philadelphia
New York San Francisco Chicago



CIDER PRESSES
and other machinery for
CUSTOM CIDER MILLS

Built for Service

Our catalogue gives full information. Address

Boomer & Boschert Press Co.
473 Water Street
Syracuse, N. Y.
Established 1872

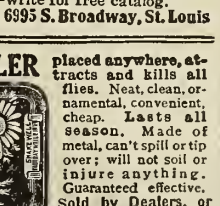
CIDER · PRESSES

THE ORIGINAL MT. GILEAD HYDRAULIC PRESS produces more cider from less apples than any other and is a

BIG MONEY MAKER

Sizes 10 to 400 barrels daily, hand or power. Presses for all purposes, also cider evaporators, apple-butter cookers, vinegar generators, etc. Catalog free. We are manufacturers, not jobbers.

HYDRAULIC PRESS MFG. CO.,
(Oldest and largest manufacturers of cider presses in the world.)
51 Lincoln Avenue, Mount Gilead, Ohio



MAKE BIG PAY DRILLING WATER WELLS

Our Free Drillers' Book with catalog of Keystone Drills, tells how. Many sizes; traction and portable. Easy terms. These machines make good anywhere.

Keystone Well Works
Beaver Falls, Pa.

POWER FOR THE FARM

Write today for Big Illustrated Engine Book "S"

Complete ready to run—fuel tank in base—water cooled—wonderful economy, uses Kerosene or Gasoline—12 sizes, 1½ to 36 H. P. ***30 Days Trial***

GRAY MOTOR CO., U. S. Motor Bldg., DETROIT, MICH.

Earn $75 to $150 a Month

Learn to Run an Auto

Or be a repairman. Big demand for men. We teach you by mail in a few weeks—simplest, most practical course. Working model free with lessons, makes it very easy. Write for FREE booklet today.

American Auto Institute
Box 988 Rochester, N. Y.

WHITMAN'S Steel Queen Hay Press
40 Years the Standard

Finest in the World

Strongest, Most Durable, Most Economical and Simplest Hay Press made—best work—greatest capacity—saves time, labor, trouble—exclusive features not in others. Fully guaranteed. Hand, Horse, Belt and Gasoline Engine Presses—also largest line of Bailers—write for free catalog.

Whitman Agricultural Co., 6995 S. Broadway, St. Louis

DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by Dealers, or 6 sent prepaid for $1.

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

4 BUGGY WHEELS STEEL TIRES PAID $8.75

With Rubber Tires, $18.45. Your Wheels Rerubbered, $10.30. I make wheels ¾ to 4 in. tread. Tops, $6.50, Shafts, $2.10; Repair Wheels, $5.95; Axles $2.25; Wagon Umbrella free. Buy direct. Ask for Catalog Q

SPLIT HICKORY WHEEL CO., 530 E St., Cincinnati, Ohio.

Coyne Brothers Handle All Kinds of Fruit and Produce
160 Water Street, Chicago, Ill.

tive, it is not so difficult to get help, and more especially for the enlightened employer who is willing to spend a little money in advertising, and who has decided that he must find some one to take the place of the human machine or the servant that he can't get for love or money. He fixes up some kind of a summer home for a man and wife, and advertises that fact in the paper. They will be paid for what they do, and must support themselves. He writes to the nearest "Sunshino" headquarters—also the Associated Charities of the nearest city, telling what he has to offer. If his greatest need is during the summer vacation—as is quite apt to be the case—he puts up a few tents, and corresponds with the editor of some University paper. There are always students who must earn money for the next term, and usually they make good help. And they are glad to go where they can live in a tent, and build themselves up physically for the coming winter. The writer knows of more than one boy who has helped in the farm home, where a girl could not be secured, and really was of more use than the ordinary girl would have been. But such help cannot be relegated to the servant class.

Frequently, good help can be secured from the Maternity Hospitals—girls who have been wronged, and who wish to find work where they can have their babies with them. That is is not always possible in the city home, where the family lives in rather close quarters; but on a farm it is different.

If the farm house is small, it is best to prepare a place for the help. In fact, that is to be one of the recognized solutions of the help problem in the near future. I know of a woman living in a city who always gets her help from hospitals for wronged girls. She says they are more satisfactory than the giddy girls who have never known trouble. Their babies keep them at home, and they are so glad of a place to live that they are anxious to please. But this woman is in a class by herself. She hires these girls not altogether for selfish purposes, for I know of at least three who have been married from her home to the father of their child.

Middle-aged women make excellent help and can be frequently secured when it is understood that they are not expected to work all the time. A certain amount of work for a certain amount of pay is bound to be one of the recognized laws of employer and employee in both city and country within a very few years. Why not be just a little in advance of that time, and make it your law this summer? Middle-aged men find it hard to get work in the city. They would be glad to go into the country if they felt sure that they had the strength to do what would be required of them. But everyone thinks of country work as something requiring steady toil from four o'clock in the morning until after dark—with hardly time to swallow their food at meal time. That is why people flock to the city, where the day's work may be done in eight hours. Country people must try to find some way to compete with city employers. They think that is impossible, but it isn't. Nothing is impossible when people of brains get together to find a solution.

I've heard employers complain that modern help takes no interest in the welfare of his employer. But when I've studied that employer, I've come to the conclusion that he took no interest in the welfare of the men whom he employed. And the woman employer is usually worse in this respect that the man. The money she pays for help looks so big to her, that it seems as if she could never get back its equivalent.

If you have won a reputation for being a good employer, you have little difficulty in getting help—which proves that there is help to be got. I know, for I have that reputation, and I never have any help problems of my own to worry about. But my neighbors do, and they declare that I have ruined our neighborhood so far as help is concerned, for all girls want to be treated as I treat my girls. Well, what of it? There isn't one of my neighbors who couldn't treat her girls as I treat mine if she wanted to! Indeed, I pay less than some of my neighbors offer, and my girls do more for me than I ask of them. On the other hand, I put myself out to try to meet their wishes and they feel that I really care for them, as girls, not machines.

There are many farmers' wives who cannot afford to hire help all the time. They think, for that reason, that they can't get help at all. But that is not true, if they will fix up a summer home for some city man and wife, and have it understood in the beginning just how much work they must do for their rent. Other neighbors in the community will want work done occasionally and thus the couple will be kept busy and the farmer's wife will get the help she needs. A tent house is not difficult to provide, and there are many people who would be glad to get away from the city for the summer if they knew they could make a living while tenting out.

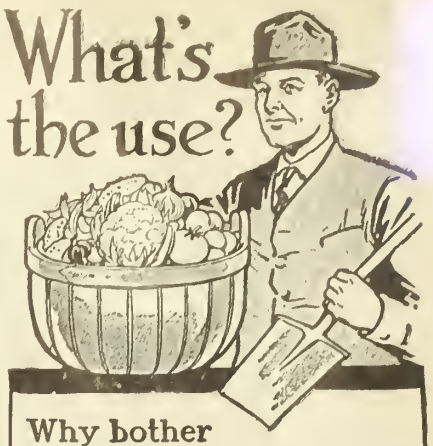
EDWINA C. WOOD.

The Social Hour.

I have a recipe for a complexion wash that I consider fine, and so do my friends who have tried it. It is really a skin physic. To make it put one ounce of pure epsom salts in a wide mouthed bottle and add ten tablespoonfuls of soft water. When dissolved it is ready for use. Directions for using: Wash face and hands in warm, soft water, rinse and wipe dry; then pour a little of the wash in palm of hand and wet the face with it; leave it until it begins to feel dry, then rub softly until face has the appearance of being powdered; dust off with flannel; use it when you dress—same as any face powder. This will remove that greasy complexion and leave it soft and white in five minutes after washing, and in a week remove all pimples, blackheads and tan from the face. Much better results can be had if the salts are pulverized. By adding twenty drops of simp. tinct. benzoin and ten drops of glycerine to the finished perparation it will make the finest face wash in the world. As a cosmetic and skin beautifier it has no superior. It bleaches the skin and cleanses it of all impurities, leaving it soft and white. MARIE SIAS.

A study of the young men of today leads one to wonder how the Lord came to make them with hands and no pockets to carry them about in. I'd be ashamed to raise a boy so absolutely dependent upon pockets for his hands. I don't believe the live, energetic men, the ones who make their mark in the world, ever have time to saunter along with shoulders up to their ears, and their pockets weighted down with as much of their avoirdupois as their hands will convey, in order to rest their heels a little. If I had a boy, he shouldn't have a pocket until he was old enough to use it properly, and I would get him so accustomed to carrying his hands without a sling, that they wouldn't disappear from view at every slight mental disturbance. I don't see any reason why a mother shouldn't compel her boy to be just as careful of his conduct, manners and personal appearance, as the daughter is taught to be. They can be as capable business men, if they know how to behave like gentlemen, in fact, more capable than as if they allowed themselves to slouch through life like a lot of poor whites. MOLLIE WOODS.

Here is a curious little item about noses that we have found interesting and which served to lead to some amusing speculation at an evening entertainment, recently. It may give some hostess a new idea, as it did me. "The positive nose is well proportioned, though slightly inclined to the retrousse. It betokens a bright vivacious nature, and is somewhat emotional. The truly feminine nose is something of a snub, but it is a good lovable nose for all that, and is vastly superior to many a more pretentious



Why bother to raise so many "good things" unless—

—Unless you *save* them. Your wife can "put up" many kinds of fruit. But it isn't so *easy* to "can" vegetables.

Not—if she *depends* on old-style, narrow-necked, tin-topped, screw-capped jars, that take in only *small* fruit. This year find out the better way to "put up" fruit—and vegetables, too—the

E-Z SEAL JARS

This is the all-glass jar, with the all-glass cap—no metal to taint the fruit—no twisting and turning. No shattering, no splattering. Easy to fill, easy to seal, easy to open and clean.

Don't allow good garden stuff or fruit "to go to waste." You may be sure it will keep—vegetables and fruit will *not* spoil in these air-tight, all-glass sanitary jars.

Free Jar—Free Book

Cut out this coupon, take it to your grocer—he will give you one E-Z Seal Jar—FREE. Be sure and write us for FREE Book of Recipes—it tells many things you should know. Get the Jar from the *grocer*. Get the Book from *us*.

HAZEL-ATLAS GLASS COMPANY
Wheeling, W. Va.

1-Qt. E-Z Seal Jar CF FREE for the Coupon

Please note—In order to secure free jar this *coupon must* be presented to your dealer before Sept. 1st, 1912, with blanks paces properly filled out.

HAZEL-ATLAS GLASS CO.,
Wheeling, W. Va.

This is to certify, That I have this day received one "Atlas" E-Z Seal Jar Free of all cost and without any obligation on my part. This is the first coupon presented by any member of my family.

Name_____

Address_____

TO THE DEALER:—Present this to jobber from whom you recieved E-Z Seal Jars. All coupons must be signed by you and returned before Nov. 1st, 1912.

DEALER'S CERTIFICATE. This is to certify, that I gave away one "Atlas" E-Z Seal Jar to the person whose signature appears above.

Dealer's Name_____

Address_____

RIFE RAMS

pump more water than any other ram for equal amount of power water—the most efficient device made for pumping water by water.

Costs little to install—nothing to operate. Raise water 30 feet for every foot of fall. Will supply pneumatic tanks against 100-lb. pressure. Pump automatically day and night, winter and summer. Fully guaranteed.

If there is a stream, pond or spring within a mile, write for plans, book and trial offer, FREE.

RIFE ENGINE CO.
2521 Trinity Bldg., New York

I WILL MAKE YOU PROSPEROUS

If you are honest and ambitious write me today. No matter where you live or what your occupation, I will teach you the Real Estate business by mail; appoint you Special Representative of my Company in your town; start you in a profitable business of your own, and help you make big money at once.

Unusual opportunity for men without capital to become independent for life. Valuable Book and full particulars FREE. Write today.

NATIONAL CO-OPERATIVE REALTY CO.
M144 Marden Building
Washington, D. C.

E. R. MARDEN
President

PRUNING Book by Professor Bailey. Tells everything about pruning. You need it. Price $1.50. The Fruit-Grower, St. Joseph, Mo.

organ which may carry along with it disagreeable traits. The vigorous, pushing nose is set with firmness on the face, and is almost masculine in the severity of its outlines. It is usually accompanied with a strong, fair development, and denotes practical, hard common sense. Susan B. Anthony had such a nose. Now for the idea! Take shadow outlines of the noses of your friends—each on a separate sheet of paper. Number the sheets and fasten them to the wall, like pictures. On a large sheet, write the significance of noses, for reference. The guests, provided with pencils and paper, are to guess whose nose is shown on each sheet of paper. Give prize for most complete list.

MOLLIE WOODS.

Try poultices of bread soaked in vinegar on your corns. Bind them on with a strip of cloth, and change them every two hours until the corn has become less sore, then change twice daily until it is cured. One of the best perparations for the teeth that I know consists of two ounces of borax dissolved in three pints of boiling water, then when it is cold, two teaspoons of the spirits of camphor should be added. Use this to rinse the mouth after eating—also when washing the teeth. It preserves them and whitens them as well, and it is good for the gums. Tooth powder does not harm the teeth if it is thoroughly rinsed from the crevises. This wash is good to use with the powder but when you use the wash you do not need the powder as frequently.

COUNTRY GIRL.

Lafrageville, N. Y., Jan. 13.

I was very much interested in the last issue of your paper, especially the article entitled "The Old Fashioned Nurse." I want to hear from the writer again and through your columns would like to hear what she has to say on the following. When I was a very small child I was made to take castor oil and I can still remember that night as though it were but a week since. It made me deathly sick. I had always thought it might be a notion until I had a boy of my own and I tried to give him castor oil. He simply could not take it. It made him very sick to the stomach. This latter was the prepared with peppermint flavor. What is the cause and remedy? I know of cases of appendicitis which have been helped by using warm olive oil and I do not see why it is not just as good as castor oil. I believe there must be others who objected to the sister's suggestion in the same way I do and would like to have a substitute. I would also like to know if any of the sisters have effectually overcome dandruff, and how?

AUNT FLORA.

To Cure Constipation.

It appears that a great many of the readers of this department are troubled with constipation. Well, that is true of people everywhere. It is one of the meanest of conditions, for it makes all manner of real diseases possible. I don't call constipation a disease, it is a trouble maker. Think how your furnace would act if it were never properly cleaned and cared for! Think of your body as a machine, wherein every part must be in good working order, or the entire machine loses in efficiency. Then consider the condition when the bowels are perpetually clogged. Lazy bowels finally become paralyzed bowels. Sores form on lazy bowels, where matter that should have been expelled has been allowed to remain and irritate the lining until inflammation sets in. It is easy to understand, when you use your common sense. And this dirty, disgusting condition is really unnecessary. Yes, I mean it. It is unnecessary. Unless the bowels are absolutely paralyzed, they can be forced to act normally. But the chances are that you, "who have suffered for years," will not take the trouble to bring about a better condition. Oh, I know whereof I speak! I've had a great many patients who were troubled with constipation, and they all have said that they'd do anything to overcome it; but I have found few who stuck to my directions any length of time. What they wanted was some prescription, easy to take, that would cure them if taken occasionally—just when they happened to think of it! I'm beginning to wonder if people who have lazy bowels are not bereft of will power as a result!

It takes persistence and determination to force lazy bowels into healthy normal action. I don't believe in drugs or enemas except as aids; they bring temporary relief, but never cure. And the longer they are resorted to the more incapable the bowels become of independent action, and the longer it will take to bring about a cure.

Constipation usually is begun by ignorance of the importance of promptly answering the calls of nature. Little children get into the habit because they dislike to leave their play. They are not taught that they must form the habit of evacuating the bowels as early in the day as possible. Sometimes they inherit laziness of the bowels, but that doesn't make it necessary for them to carry the infliction to the grave.

If one is only slightly troubled, care as to diet is all that is necessary. Avoid the foods known to be constipating, and eat the other kind. Drink plenty of water, more especially before breakfast. You may say that you already drink a great deal of water, and it may be true that you do drink more than your neighbor who is never troubled with constipation; but that is no argument that you do not need more. You certainly do, if you are constipated. Drink plenty of buttermilk between meals, and eat grapes and figs whenever you can get them.

But there are cases of constipation that cannot be reached by simple methods, for the bowels are too nearly paralyzed. If you belong to this class of sufferers, you can't afford to let the condition continue, for it is more than likely to prevent a cure of some other simple little trouble that might have taken care of itself had your bowels been normal. It is more than likely that the inside of your bowel is coated thickly with matter that has been slowly collecting all these years while the bowels have been getting more and more lazy. It is wise to get rid of this accumulation as quickly as possible, and I know of no quicker way than to use a syringe. Use castor oil in water as hot as can be borne. Sometimes, I use surgeon's castile soap with hot water. Then use luke warm water with a little witchhazel with which to rinse the bowels. It will take several days of this treatment to get the bowels really clean. While doing this, eat mutton, and take mutton broth with rice in it, and don't forget buttermilk. If you eat meat, and toast, be sure to chew everything well, for you want to make it as easy as possible for your machinery to take care of its food, while under the process of regulation.

The real cure for constipation consists in internal massage of the bowels. This is known in most so-called heathen countries, but there are many of our practicing physicians who have never heard of it. This is what you ought to do every day of your life, but what you are not likely to do long enough to get any real benefit from it. However, I'll tell you how—just as I've told many other sufferers who "were willing to do anything to get well," and who are not well and never will be. It takes more effort to massage the bowels than to swallow pills.

Begin by taking a correct standing position—with the weight on the soles of the feet. Don't have on any clothing, unless it be a nightgown, or union suit. I take this exercise immediately upon rising in the morning, and without any clothing. Stretch, until the line from the navel to the neck is as long as you can make it; now, holding that position, draw in a deep breath, and then hold the breath, yet move the muscles of the abdomen as if you were breathing. You'll be inclined to do this very quickly at first, and with short, jerky motions; but after you have practiced, you can control your muscles so that you will appear to be breathing naturally, yet you will be holding your breath all the time. Move the muscles of the abdomen as long as you can, then expel your breath, and try again. But do not try too many times at first, for you will derive greater benefit from working up slowly.

Next, bring the bowels up as far as you can—much as naughty children do when they stick out their stomach! Then, standing with the weight on the

Regardless of how much money you are planning to spend in building or remodeling a home, a garage, a barn, or any other building, it will be far superior if roofed with

KA-LOR-OID
(Colored Ruberoid)

It is the only **permanently colored prepared** roofing. As long as a particle of it lasts the color remains. KA-LOR-OID outlasts metal or shingles; it is cheaper; it is easier to apply. Tile and slate crack, shingles warp and decay, metal corrodes. KA-LOR-OID does none of these.

It is **RAIN-PROOF SNOW-PROOF HEAT-PROOF COLD-PROOF TIME-PROOF FIRE-RESISTING**

KA-LOR-OID (Colored Ruberoid) is the same durable material as RU-BER-OID with the added attraction of the beautiful colors:

TERRA COTTA RED COPPER GREEN BRONZE

RU-BER-OID roofs laid over 20 years ago are still flexible, still water-proof and weather-tight. Watch for the RU-BER-OID Man on the outside wrapper. He guarantees the roofing to be genuine KA-LOR-OID or RU-BER-OID.

We want every reader of this excellent publication to have our new book, "Around the World." Write today for it and free samples of KA-LOR-OID.

THE STANDARD PAINT CO., 100 William St., New York
Branches: Boston, Philadelphia, Chicago, Kansas City, St. Paul, Denver.

Trade Mark Reg. U.S. Pat. Office

The Colorado Midland

Affords the Best Service to

The Fruit Lands and Farming and Grazing Lands of the Western Slope

There are thousands of acres of good lands still uncultivated in the fertile valleys of eastern Utah and western Colorado, and oceans of water in the streams and on the mountain tops. Special rates made for landseekers to go and look at these lands and for settlers. Write us or come in and ask us for information about what has already been done in that section.

MIDLAND ROUTE

W. B. THROCKMORTON
City Passenger Agent

E. D. WHITLEY
City Ticket Agent

Telephone Main 6280. Seventeenth and California Sts., Denver, Colo.
DINING CARS, PULLMANS AND CHAIR CARS ON ALL TRAINS

Rubber Roofing

Warranted For Twenty-Five Years.
FREIGHT PAID To Any Station East of Rocky Mountains, except Texas, Okla., Colo., N. D., S. D., Wyo., Mont., N. M., La., Ga., Ala., Miss. and Fla., on all orders of three rolls or more. Special Prices to these States on request.

ONE-PLY .... Weighs 35 lbs., 108 Square Feet, $1.10 per roll.
TWO-PLY ... Weighs 45 lbs., 108 Square Feet, $1.30 per roll.
THREE-PLY . Weighs 55 lbs., 108 Square Feet, $1.50 per roll.

TERMS CASH: We save you the wholesalers' and retailers' profit. These special prices only hold good for immediate shipment.

Indestructible by Heat, Cold, Sun or Rain.

Write for FREE SAMPLES or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to Southern Illinois National Bank.

Century Manufacturing Co., Dept. 9 East St. Louis, Ills. or 200 5th Ave., New York City.

I MADE $1400 WITH MY RANEY CANNER

One man did—You can, too. Get a RANEY CANNER, $5 to $25, can your fruit and vegetables. THE canner to make money. Set yourself right. Sit down this minute and write for catalogue and money-earning facts.
RANEY CANNER CO., - Dept. 10, - ST. LOUIS, MISSOURI or CHATTANOOGA, TENNESSEE

left foot, bring up the right hip as far as you can; then bend the back so that the body becomes prominent just below the waist line; then, standing on the right foot, bring up the left hip. This, when done evenly, is known as "the hip roll." It takes practice to do it evenly. When I say, "Stand on the right foot," I do not mean that the other should leave the floor. You must try to do this exercise without moving any other part of the body more than is actually necessary. You will see for yourself that it does massage the bowels. It will bring life to bowels that have been partially paralyzed; but it won't do it in a day or a week. I know people whose bowels respond to this treatment in less than an hour. It is not good to begin this exercise until the bowels have been cleansed and softened, if constipation has become chronic.

When you have trained yourself so that you can take these exercises for two consecutive minutes, you are ready to begin to train your bowels. You want to break up the lazy habit, and supply something better. To do this, you must take these exercises at about the same time every day. Begin by taking a dose of phosphate soda, in hot water, or of epsom salts in hot water—whatever you have found that will act quickly—and take the exercises just before it is time for the medicine to act. This may seem very foolish to you; but it is not. It is in the line of suggestive treatment, and it has been done often enough to prove that the massage treatments show results more quickly than would otherwise be the case. There are many who never use the remedies with the massage, nor should they be used except as a starter; but I believe in the remedies for their suggestive help. Take a smaller and smaller dose each day, with the treatments, and soon you will find that medicine is not needed.

You will also find, to your great delight, that you no longer have a prominent abdomen, for this massage treatment takes this all away. At first, it will hurt you so that you will be quite anxious about yourself. When I've been careless and have not done this for a long time, and then begin again, I feel as if my back was being torn across in several directions. But it wears away. Just be a little easy with yourself at first; but keep at it every day. You'll feel new and clean, and so much lighter that walking will be a pleasure, and you'll lose that bad taste in your mouth, and your offensive breath, and your headache. I've often thought what a nice world this would be if only a majority of us were neat enough to insist upon having clean bowels. AUNT KETURAH.

Hard Times Stories.

(Continued from last month.)

When I was attending school in a Missouri college there came an invitation to spend the holidays in a house where there were four very bright and promising maidens. During the brief stay of four or five days there developed a very friendly feeling between myself and one member of the family. On returning to school, a correspondence ensued, and two years later the engagement ring was bought. Then came the serious problem of getting a home, and out in old Wyoming, among the rattle snakes and the sage brush, I tried in vain to solve it. Becoming disheartened with results there, I tried California, but this also proved an unfruitful chase. My trouble lay in being too proud to ask the intended to leave a happy home and take up the simple ranch life, among so different a people. After knowing each other better, and, it being a case of true love, life in double harness was begun. Leaving all behind that had been dear, and going to a far away place, eighty miles from a railroad, where all was strange, neighbors scarce and far away, took courage. I had made the picture as plain as possible, and true as words could convey, but the real test came when the little bare cabin was reached. The bride, however, being of the true type, and our hopes high for better things in the near future, we settled down in a little cabin, covered with a dirt roof. The household goods were conspicuous by their absence, and the furniture was mostly homemade. With the inventive powers of the wife, things soon took on a more homelike appearance. The ranch was a small one, covered with sagebrush, willows and a good sized mortgage. Our machinery consisted of an axe, hoe and an irrigating shovel. Farming was only made possible by the use of neighbors' horses and tools. In a short time a crop was raised, and this enabled us to add to our holdings, then the boarding of a school teacher helped. A trying time came when the wife was taken sick, and had to be taken forty-five miles to a doctor; then followed a serious operation. Later came the accidental killing of a borrowed horse, which had to be paid for. The only means of support was from the ranch, and a small bunch of cattle, which were mortgaged to secure the creditors on the farm. When the money came due, it was necessary to sell the greater part of the cattle, and this cut off the main source of our income. The second season the ranch was sold and all debts paid, but there was not much left after this was done. Still harder times came when the wife was again taken sick, and the doctor advised a trip to a prominent doctor in Omaha; this took all that was left of the small earnings. In spite of all this, we are living happily on a small rented ranch, with a little daughter to share our joys and sorrows.—Chas. F. McDowell.

When my husband and I were married we had nothing to begin our struggle with the world except one old cow, two dozen chickens and about twenty dollars. We invested the money in furniture. My husband hired out to work on a farm, for 50 cents a day. With house and garden cow pasture free, our hard times began. Our landlord's horses broke into our garden, just as it was in its prime; then his hogs made a raid on our chickens, eating nearly all of them. After this, he made a driveway through our potato patch, to drive through a hundred hogs, seven horses and twenty cattle to water. This went on for about two months, so our potatoes were a failure. We decided that this was more than we could stand, and moved to another farm, where circumstances were better, but this was no paradise. Husband farmed some, and worked on public work, whenever he could leave his crop; he cut cordwood at 40 cents a cord, and had to board himself, besides. When he had been there about a year, we began to look around for a better location, and we heard of a farm that was to be sold at sheriff's sale. We talked it over, and concluded we would try to buy that farm, although we did not have one dollar ahead. We advised with a man who did have money and told him our plans; then we got my mother and a neighbor to indorse our note for three weeks, with the agreement that, if we did not buy the farm, we could return the money without interest. If we bought the farm, this man would take a mortgage for the amount. When the day of the sale arrived, husband was there with the money in his pocket and, fortunately for us, there were no other buyers, so he bought it at his own price. We gave a mortgage, released our securities, and moved onto our farm. My husband cut and sold timber, made railroad ties for the next payment. He worked for the neighbors while I worked in the garden, milked the cows, cared for the chickens, and did all the housework, besides taking care of the little babe that came to bless our home. So, by our united efforts, we have pulled through so far. Now we have a fine commercial orchard, which commenced to bear last year, and the fruit was delicious. We feel that we have something to look forward to, besides just hard work. It takes grit, selfdenial and much hard work to accomplish anything. When a young couple start out in this world with nothing but good health, willing hands and true love, the kind that grows brighter as the days go by, they must expect hardships as well as final success. As we look back over our lives, we see mistakes that we have made, but they are a benefit to us now, for we try not to make the same ones again. My hard luck story is not as bad as some, but it is all true.—"Mrs. C."

We purchased, at auction, a hundred and sixty acres of school land on a bleak Minnesota prairie—not a tree within nine miles of us. The nearest town—a railroad station—six miles away. We had enough money to make a small payment on our land, buy boards for a small house that, when completed, had one layer of boards and one of tarred paper, to shield us from the Minnesota blizzards. We also had a rather poor team of oxen, a wagon, some furniture, a plow, etc. We planted wheat, and our first crop yielded three bushels to the acre! That winter was rich in blizzards—the first coming on the tenth of October, and snow that fell then did not go off until the following April. There was no hard work to do and no money, and the first baby was coming. My health was very poor, and it was decided that I should go to the city where I could have proper medical treatment. We hadn't a penny, and my husband had always been a farmer. We knew nothing whatever of city life—but when one is young, little difficulties of that nature never worry one long. My husband sold his ox team to get money to go to the city and to live on until work was secured. But that was a long and wearisome process. Finally he answered an advertisement for a boy to work in a grocery store at five dollars a week. "We advertised for a boy," said the grocer. "Well," replied my husband, "I can do as much as a boy, I guess." They took him, and we lived—paid rent and all, on that five dollars a week. One day my husband was told to throw away a bushel of Lima beans that had become wormy. He looked them over and saw that some of them were not wormy, so he brought them home. I picked them over, one at a time, and found two quarts of good beans. This happened several times. We lived on beans for some time after that, and I learned many ways of serving them. He picked up food, in that way, a number of times, that pieced out splendidly. He was especially fortunate in getting grapes, for

DE LAVAL
CREAM SEPARATORS

Best Time to Buy One

There never was a better, if indeed as good, a time to buy a DE LAVAL Cream Separator than right now.

The hot weather is at hand when the use of the cream separator frequently means most as to quantity and quality of product, while cream and butter prices are so very high that waste of quantity or poorness of quality means even more now than ever before.

This is likewise the season when DE LAVAL superiority is greatest over other separators,—in capacity, ease of running, sanitary cleanliness and every other way.

Cost need not be a consideration because a DE LAVAL cream separator is not only the best of all farm investments, but may be bought either for cash or on such liberal terms as to actually pay for itself.

There never was a better time than right now to buy a cream separator and there can be no possible excuse for any man having use for a separator delaying the purchase of one at this time.

Look up the nearest DE LAVAL agent at once, or if you don't know him, write us directly.

The De Laval Separator Co.

NEW YORK CHICAGO SAN FRANCISCO SEATTLE

FOREMOST FARM PAPERS

1,392,000 Circulation at $6.55 a Line

	Guaranteed Circulation	Line Rate
The Fruit-Grower . . . St. Joseph, Mo.	100,000	$ .50
Successful Farming . . . Des Moines, Ia.	500,000	3.00
Farm, Stock & Home . . . Minneapolis, Minn.	105,000	.40
Southern Ruralist . . . . Atlanta, Ga.	150,000	.75
Kimball's Dairy Farmer . Waterloo, Ia.	100,000	.50
The Gleaner . . . . . Detroit, Mich.	125,000	.50
Green's Fruit-Grower . . . Rochester, N. Y.	125,000	.50
Inland Farmer . . . . . Louisville, Ky.	57,000	.25
Western Farmer . . . . . Spokane, Wash.	30,000	.15

CHICAGO
J. G. BILLINGSLEA
Western Representative
810 First National Bank Building, Chicago

NEW YORK
A. H. BILLINGSLEA
Eastern Representative
1 Madison Avenue, New York

ST. LOUIS
A. D. McKINNEY
Third National Bank Building, St. Louis

MINNEAPOLIS
R. R. RING
Globe Building, Minneapolis

BE A REPORTER FOR THE M.S.I.A. EARN $6 to $15 A Day!
Any one can secure the information we want. Send stamp for particulars. M. S. I. A. Association, 124 Association Building, Indianapolis, Indiana

CLASSIFIED DEPARTMENT

POULTRY DEPARTMENT

The Sunshine Flock S. C. Buff Leghorns. Gold on your farm; gold in your pocket. Pen 1, $3.00 per setting of 15; Pen 2, $2.00; Pen 3, $1.00. Range, $5.00 per 100. Mrs. Anna H. Baldwin, Keswick, Iowa.

From $1,000 Madison Square, N. Y., and Crystal Palace, England winners, 5 pullets and cockerel, $10. Eggs very best, $1 to $5 per 15. A. M. Sinsabaugh, Wyalusing, Pa.

Single Comb White, Brown, Buff and Black Leghorn, hatching eggs and baby chicks. Good farm raised stock. Moderate prices. Paul Bechtner, Route 5, Waukesha, Wis.

Rose Comb Brown Leghorns, hardy Northern birds, good layers; eggs, 20, $1.00; 100, $3.50. Shipped the same day laid. Mrs. Chas. Brown, Cavalier, N. D.

Rose Comb White Leghorns, bred from winners at Chicago, St. Louis, Minneapolis, Oshkosh and Fond du Lac. Eggs, $1.50; $1.00 per 15; $5.00 per 100. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

Orpington Place, where you get the best S. C. Buff and White Orpingtons in the West. Stock and eggs for sale. Send for mating list. Geo. B. Moehrl, Marshalltown, Iowa.

Columbian Plymouth Rocks, best of layers, large size and good color. Eggs $3 per 15, $5 per 30. George Pinta, Ft. Atkinson, Wis.

White Plymouth Rocks. Fine large birds, good shape, color and head points. Eggs, $1.50; $1 00 per 15. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

Barred Rocks, Brown Leghorns, Silver Laced Wyandottes and Reds. Eggs from pens, $1.50 for 15. Write for free catalog. Address Sunnyside Poultry Farm, Owensville, Mo.

Single-Comb Rhode Islands. Eggs, $2.00 and $3 00 per 15. From beautiful stock. Sale Cocks and Cockerels. H. V. Reynolds, Manager. Peerless Yards, 2186 East 43rd street, Cleveland, Ohio.

Red Cherry Strain, Rose or Single Comb. Very best eggs from prize winners for sale at $1 per 13; $5 per 100. Dr. A. N. Sensalaugh, Wyalusing, Pa.

Eggs for hatching. Exhibition pen. B. P. Rocks, $3 per 15. Utility flock $5 per 100. Toulouse geese eggs, 25c each. White guineas, $1 per 15. Mrs. I. B. Geiger, Route 2, Ida Grove, Iowa.

Mammoth Pekin and Indian Runner Ducks. The birds for the fruit grower. Eggs, $1.50 for 12; $3.00 for 30, $4.50 per 50. Paul & Gordon Griffith, Fredericktown, Mo.

Mammoth Pekin Ducks, winners at Chicago, Minneapolis, Wisconsin State Show and Fond du Lac. Eggs, $1.50; $1.00 per 12; $3.00 per 50; $5.00 per 100. Circular free. Jos. H. Kitchen, Eldorado, Wis.

Black Langshans, Buff Orpingtons. Single Comb Rhode Island Reds. Winners of 96 ribbons, 15 eggs, $2.00. Baby chicks, 25c. C. R. Smith, Burnt Prairie, Illinois.

If you want Orpingtons, Reds, Leghorns, Wyandottes, Rocks; males or females; we can save you money. Write us anyway. Lee Harris, College View, Neb.

Baby chicks, 10c to 20c; stock, $1.25 to $5; eggs, $5 per 100 up. Rhode Island Reds, both combs. White and Columbian Wyandottes, White and Buff Orpingtons, Pekin, Rouen and Indian Runner ducks, Toulouse geese, Bourbon Red turkeys. Catalogue free. G A. Mitchell, Dept. B, Rldott, Ill.

Fishel Strain White Runners, Walton Strain English, American Fawn and White Standard Bred and for pure white eggs none better. Thirteen eggs, $1.00 up. Wooldridge & Grape, Englewood, Ill.

FARM LANDS FOR SALE

Bearing anple orchard for sale: forty acres, young trees, best standard varieties; good crop this year. Abundant water and good house sites. Located in the finest apple section of western North Carolina, where water, climate and scenery are unsurpassed. Fruit growers selling association just organized Cold storage planned. Only reason for selling, the manager has more orchard than he can look after. Price, $300 per acre. Terms. Bolling Hall, Waynesville, N. C.

Look ahead five years—What's in store for you? Would a pretty home in absolutely healthy climate and comfortable living income every year appeal to you? One of our ten-acre apple orchard tracts, planted with 500 apple trees—which will cost you a few dollars now and small payments monthly—will insure your future home, income and happiness. Write now for descriptive Book 1. Shenandoah Valley Apple Lands Company, Waynesboro, Virginia.

Valuable peach orchard for sale in the famous Ozark fruit belt, Arkansas, near county seat and railway shipping station. Farm has 190 acres, 70 acres in mature Elberta peach trees, numbering 9,000 trees. Also 200 cherry trees and 75 apple trees. Best orchard in the county; trees thrifty and prospects for this year's crop never better. One full crop of this orchard would pay $18,000 to $20,000. Price $10,000. A remarkable bargain. For full particulars, address G. G., care Fruit-Grower.

Famous Springdale fruit district; fine apple crop in sight. These should appeal to men of means; 240 acres, few miles out; exceptional improvements; about 100 acres bearing apple orchard, balance strong grain land; $30,000. Also 180 acres edge of town, fine improvements; 60 acres bearing apples, 30 acres peaches, balance timber and pasture, including 16 acres alfalfa; $20,000. A1 investments and bound to grow in value. Terms and possession can be arranged. Fredericks Realty Company, Springdale, Washington Co., Ark.

Ideal fruit and poultry farm. In famous Benton Co., Ark. Forty acres, two miles from Hiwasse; six acres nine-year-old apple orchard. Ben Davis and Malden Blush, full of fruit. Four acres more in cultivation, balance good oak timber, never been cut over. No buildings, but fine site One-fourth mile to good school and church. All tillable and best of fruit and grain land. Price, $1,200, $400 cash, balance yearly payments, 7 per cent interest. Other places. Banks & Adcock, Hiwasse, Ark.

Forty-acre commercial bearing orchard. An exceptional bargain. Forty-acre prune and apple orchard in the Umpqua Valley, Oregon. $10,000 crop guaranteed this year. This is one of the finest orchards in the Northwest; river bottom land, 30 acres in prunes and 10 acres in commercial apples; 14 years of age; 175 English walnut trees two years old from setting. Price $40,000; terms. Think it over; 25 per cent on your investment guaranteed the first year. Himes & Oliver, Roseburg, Oregon.

For sale by owner, who sells because of ill health, 40 acres first class fruit land, half mile from Neosho, Mo., 15 acres in berries, besides corn, hay, etc.; good fences, sheds, well, cistern and all necessary buildings at $125.00 per acre. Also house and lot in Neosho. Address 339 South Wood St., Neosho, Mo.

Orchard for sale—Ninety acres, four miles from county seat, one and one-half miles from town; 3,500 peach, apple and pear trees, six years old. Peach trees this year contain from one and one-half to five bushels per tree. H. B. Downing, Atoka, Oklahoma.

Rich soil, ideal climate. Abundant rainfall, best transportation; 20 acres, $600, $10 monthly. Map and literature free. S. O. Sanderson, 184 Palace Bldg., Minneapolis, Minn.

For sale or exchange—Canyon Co., Idaho, orchard. Ten acres set to apples; Jonathans, Winesaps and Rome Beauty. Address C. W. Renshaw, Rock Valley, Iowa.

Fruit, Nursery Farm, near Glasgow, Mo., for sale. 25 years established, paying business Made enough, wants to retire. Price-Ballew Investment Co., Glasgow, Mo.

Come South. Mountain section, altitude 2,250 feet. Mild winters, cool summers. Dairying, fruit growing, diversified farming. Cheap lands. Information Bureau, Hendersonville, N. C.

Fruit Ranch Sacrificed. Finest in Rio Grande Delta. Never snows. Value, with buildings, crops, stock, tools, etc., over $25,000, for $15,000, with $5,000 down, balance easy terms. Box 14 A, Donna, Texas.

For Sale—A small sanitary dairy and poultry ranch, near city and doing good business. Other business compels owner to sell at sacrifice. For information address Box 13, Albuquerque, N. M.

Free Homesteads in the Artesian Belt. Finest fruit land. Good climate, good water, good markets, on railroad. Address Secy. Commercial Club, Sau Simon, Arizona.

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace Bldg., Minneapolis, Minn.

HELP WANTED

Free illustrated book tells about over 360,000 protected positions in U. S. service. More than 40,000 vacancies every year. There is a big chance here for you; sure and generous pay, lifetime employment. Easy to get. Just ask for booklet A 802, no obligation. Earl Hopkins, Washington, D. C.

Wanted—Managing partner in fruit evaporator; also poultry farms and orchards. State capital you can invest. Good opportunity. Big money. N. E. Roberts, Fairfield, Illinois.

AGENTS WANTED

Local representative wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become Independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L420, Marden Building, Washington, D. C.

LIVE STOCK

Milch Goats—Swiss and Spanish breeds. G. H. Wickersham. 1244 St. Francis Ave., Wichita, Kansas.

MISCELLANEOUS

Cantaloupes—"The kind that's sweet and good to eat." Mail me $1.50 for one, $2.50 for two crates, delivered. Express charges paid to Oklahoma, Illinois, Kansas, Missouri, Iowa, Nebraska points. Elberta peaches, delivered, $1.00 per crate, same points. Help me out, middlemen. Your check will do. Ship about July 15th. Satisfaction guaranteed. G. E. Johnson, Sec. Grannis Fruit & Truck Growers' Assn., Grannis, Ark.

Buy no barrel caps until you get a sample of the Appco Shipsafe cap. The deep, close corrugations make them much better for either top or bottom. Write for sample, stating about how many you will use. American Paper Products Company, 300 Bremen Ave., St. Louis, Mo.

Wanted—Situation as manager of fruit or other farm land, by university graduate with three years' field experience. Expert in soil analysis, crop rotation, etc. Address "Profits," care R. R. Shuman, 237 W. Madison St., Chicago, Ill.

Wanted—Fruit growers to use Campbell's perfect fruit picker; stand on ground and pick apples, pears, peaches, oranges. Satisfaction guaranteed. Sample by mail, postpaid, 50c. J. D. Campbell, Belle Center, O

Kodak Films Developed 10c per roll, any size. Prompt attention given mail orders. Prints 2¼x3¼ to 3¼x 4¼, 3c; 4x5 to 3¼x5½, 4c. J. M. Manning, 1062 Third Avenue, New York City, Box M.

Have you read "How to Succeed?" It is the greatest satire ever written on the get-rich-quick craze, 15c postpaid. A. Ruhnau, Dept. 10, 280 Columbus Ave., New York, N. Y.

Consulting horticulturist—J. F. Littooy, Boise, Idaho. Directs orchard operations. Investigates orchard values and operations. Expert for counsel at law.

Sell your property quickly for cash, no matter where located. Don't pay big commissions. Particulars free. Real Estate Salesman Co., Dept, 28, Lincoln, Neb.

Don't Wear a Truss

New Rupture Cure

Brooks' Appliance. New discovery. Wonderful. No obnoxious springs or pads. Automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves No lymphol. No lies. Durable, cheap. Sent on trial. Pat. Sept. 10, '01.

Catalogue Free.

C. E. BROOKS. 1198 State Street, 57A, Marshall, Mich.

CORN HARVESTER with Blndor Attachment cuts and throws in piles on harvester or winrow. Man and horse cuts and shocks equal with a corn Binder Sold in every state. Price $20 00. W. H. BUXTON of Johnstown, Ohio, writes: "The Harvester has proven all you claim for it; the Harvester saved me over $25.00 in labor last year's corn cutting. I cut over 500 shocks; will make 4 bushels corn to a shock" Testimonials and catalog free, showing pictures of Harvester. Address NEW PROCESS MFG. CO., SALINA, KANSAS

Publications on Bee Culture

The numbers listed below are but a sample of what we can supply in the line of booklets and books of more than ordinary interest.

The Bee Keeper and Fruit Grower. A 15-page booklet giving actual facts regarding the value of bees to fruit, and showing how bee keeping may be doubly profitable to the fruit grower. Fruit growers are realizing as never before the necessity of having honey bees in close proximity to their blossoming trees. Free.

Gleanings in Bee Culture. A semi-monthly magazine, the leading exponent of bee culture in this country. To new subscribers we will furnish it six months for 25 cents. Ask to have your subscription start with the March 15th issue, which is a special bees and fruit number and will give you some valuable facts about these two industries.

The A B C of Bee Culture. A complete textbook of over 600 pages. Fully illustrated and containing full information on every subject relating to this most fascinating industry. Price $1.50, postpaid.

Catalogue of Bee Keepers' Supplies. The 1912 edition is particularly interesting and attractive. It will tell you how best to make a start with bees and give prices on all equipment necessary. Will be mailed free on request.

The A. I. Root Company
Box 199 MEDINA, OHIO

BEAUTIFULLY ILLUSTRATED BOOKLET ABOUT DELAWARE
the State of red apples, luscious peaches, strawberries and of ideal homes. Address State Board of Agriculture, Dover, Dela.

RIGHT NOW
is the Time to Send for Our Price List on
FRUIT TREES
Varieties True—No Disease—We Pay the Freight
For Price List Address
NEW HAVEN NURSERIES
Box 125 New Haven, Mo.

my appetite demanded something of that sort occasionally. Sometimes there would not be more than two or three good grapes in the bunch he was to throw away—but those few were fine for us. We ate on the big packing box in which our bedding had been packed, for we had no table. We had a mattress, but no bedstead. But little things like that didn't trouble us. We simply would not worry, and when the little girl came, she was the sunniest, happiest, healthiest, best baby ever born. That was our hardest winter. We have lived to know that property doesn't always bring pleasure, and that to be so well off that there is no need to work does not always spell happiness.—Mrs. Lahelia O. Bertram.

NURSERY STOCK

Grow $3,000 in your back yard as a side line, while you work—while you sleep. Raise Golden Seal. Sure crop. No hazard. Rising market. Information for stamp. Chas. G. Dodge, Albany, Wis.

DOGS AND PET STOCK

Scotch Collie Puppies. Pedigreed stock. $5.00 and up. Dog, Hare and Poultry catalogue. Belgian book, 5 stamps. Failing Poultry Farm, La Fargeville, N. Y.

PATENTS

Valuable Free Book on Patents, telling how to protect and turn your ideas into gold, sent free. Fitz Gerald & Co., 821 F St., Washington D. C.

Send For Free Booklet—All About Patents and Their Cost. Shepherd & Campbell, 500M Victor Bldg., Washington, D. C

Shoo Fly THE ANIMALS FRIEND

Keeps flies and other insect pests off of animals—in barn or pasture—longer than any imitation. Used and endorsed since 1885 by leading dairymen and farmers.

$1 worth saves $20.00 in milk and flesh on each cow in a single season. Heals sores, stops itching and prevents infection. Nothing better for galls. Kills lice and mites in poultry houses.

SEND $1, if your dealer can't supply you, **for enough Shoo-Fly to protect 200 cows, and our 3-tube gravity sprayer without extra charge.** *Money back if not satisfactory.* Write for booklet, FREE. Special terms to agents.

Shoo-Fly Mfg. Co., Dept. 31 1310 N. 10th St., Phila.

Editor knows from experience that Shoo-Fly is O.K.

STEEL POSTS

AT LAST A FENCE POST WITH A BASE and the PRICE is RIGHT

FIELD FARM RANCH ETC.

GET OUR CATALOGUE

AMERICAN STEEL POST CO. VIOLET & SANTA FE STS. LOS ANGELES

CARBO STEEL POST CO., Chicago Heights, Illinois.

MEDICINAL ROOTE—Golden Seal, Senega, Pink Root, Etc. Easily Grown Profits large. Send for prices. SELIGMAN PLANT COMPANY, SELIGMAN, MO.

GOVERNMENT Positions are easy to get. My booklet X884 tells how Write today—Now EARL HOPKINS, Washington, D. C.

Horse Owners! Use GOMBAULT'S Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.*

Every bottle sold is warranted to give satisfaction Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid,** with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland O.

You Can't Cut Out A BOG SPAVIN, PUFF or THOROUGHPIN, but

Before After

ABSORBINE

will clean them off permanently, and you work the horse same time. **Does not blister or remove the hair.** $2.00 per bottle, delivered. **Book 4 Free.**

ABSORBINE, JR., liniment for mankind, reduces Varicose Veins, Ruptured Muscles or Ligaments, Enlarged Glands, Goitres, Wens, Cysts. Allays pain quickly. Price $1.00 and $2.00 a bottle at druggists or delivered. Will tell you more if you write. Manufactured only by

W.F.YOUNG, P.D.F., 34 Temple St., Springfield, Mass.

PATENT YOUR IDEAS

$9,000 offered for certain inventions. Book "How to Obtain a Patent" and "What to Invent" sent free. Send rough sketch for free report as to patentability. Patents advertised for sale at our expense in Manufacturers' Journals.

Patent Obtained or Fee Returned

CHANDLEE & CHANDLEE, Patent Att'ys
Established 16 Years
1046 F. Street, Washington, D. C.

The Boys' Magazine

Is unquestionably the finest magazine in the world for boys. Each issue is filled with clean, fascinating stories and instructive articles, all of intense interest to every live boy. Also, each issue contains departments devoted to the Boy Scouts of America, Electricity, Mechanics, Photography, Carpentry, Stamps and Coins. A big Athletic Department edited by

Walter Camp

Is a regular feature. This department is of great value to every boy who wishes to excel in athletic sports.

A new handsome cover in colors each month. Beautifully illustrated throughout.

Special Offer: For only 50c we will send you **THE BOYS' MAGAZINE** for six months and a copy of the most practical book you ever read, "Fifty Ways for Boys to Earn Money," and this splendid baseball fielders' glove. This glove is made of finest tan leather, felt padded and **LEATHER LINED,** web thumb and deep pocket.

Your money will be promptly refunded if you are not more than pleased with your investment. Address

The Scott F. Redfield Co., 674 Main St., Smethport, Pa.

(The Boys' Magazine at all news stands, 10 cents a copy.)

Greatest Canning Outfit in the World

With our Improved Invention you can put up 500 cans of fruit and vegetables each day at your home. Used exclusively by girls' tomato clubs, members of U. S. Dept. of Agriculture. Portable and stationary—all sizes; necessary supplies and conveniences—entirely different and better than old style outfits—price complete $12 00. Full Instructions.

GUARANTEED STANDARD CANS, with solder hemmed caps, tipping solder, fluxing and crates.

250 No. 2 cans..... $5.50
500 No. 2 cans..... 9.75
250 No. 3 cans..... $ 6.50
500 No. 3 cans..... 11.50

F. O. B Baltimore or Virginia factories. From Hickory or Savannah, 20c per 100 higher. Order direct and save money. Free descriptive literature on request. Good agents wanted.

HOME CANNER MFG. CO., HICKORY. N. C.

Splendid Orchard For Sale Cheap

I've got a dandy orchard located about two miles from the big St. Joseph Apple Market. There are 33½ acres of land, about 25 acres in apple trees, 10 years old and good crop now on—staple market varieties. I have too many other interests demanding all my time. This is a snap for a live hustler. Will pay for itself in one or two crops.

Will sell at one-half value. Possession immediately, including crop. Call or write

RICE McDONALD

ROOM 50 COMMERCIAL BUILDING
SIXTH AND EDMOND STS. ST. JOSEPH, MISSOURI

CLARK'S CUTAWAY TOOLS

Orchard *and* Farm Harrows, Cider Mills, Etc.

HIS DOUBLE ACTION CUTAWAY HARROW

Also Spray Pumps and Outfits, Rhodes Pruning Tools, Pointed and Step Orchard Ladders, Veneer Tree Protectors, Wilson Picking Bags, Kee's Fruit Pickers and other good things for the fruit grower. Nurserymen's Tools, Thomas Baler and Box Clamp, Common Sense Tree Digger, Etc. **Raney Home Canner, the best ever.** Fodder Balers, Barrel Headers.

ELASTIC PRUNING PAINT
For Damaged Fruit and Shade Trees. Save those already damaged by rabbits, borers, pruning or other causes.

IMPROVED RANEY CANNERS
Make Home Canning Practical and Profitable to every housekeeper, farmer, fruit and truck grower. Write for catalogue.

Fruit Evaporator Supplies

A SPECIALTY. SEND LIST OF WANTS.

E. G. MENDENHALL, General Distributing Agent "Clark's Tools"
ALSO FRUIT GROWERS' SUPPLY DEPOT BOX 300, KINMUNOY, ILLINOIS

AUTO BEATS THE HORSE

Thinking that our experience with motor power as a means of delivering farm produce might be of some interest and value to the readers of Tho Fruit-Grower, I will jot down a few facts in regard to our experience with a motor delivery wagon during two seasons' operations. Strawberries and tomatoes are our special money crops. Two years ago this spring, having lost one horse of our team, we decided to try the experiment of getting along with one horse on the farm, together with a motor wagon for delivery. Accordingly we invested in an International Auto Wagon, the carrying capacity of which is rated at 1,500, and speed at four miles per hour on low gear and twenty miles on high gear. This wagon is fitted with high wheels and hard rubber tires. This style of wagon is substantially constructed and equipped with mud guards and strong gas and oil lamps.

The distance to our nearest market and shipping point is five and one-half miles. Now marketing fruit and garden truck with the old-time horse and delivery wagon had always been to us a tiresome and tedious job. I would much prefer to manipulate a hoe or swing a scythe any day than to pound along a dusty road in the hot sun. Many a trip have I made under the above conditions, when keeping awake was an exceedingly difficult proposition indeed.

With our auto delivery all these adverse conditions are eliminated entirely. Where the trip requires one hour with a team, now it is made easily in twenty minutes or less. Where we then found it necessary to get out at break of day and snatch an early breakfast in order to make the early express, now we can take our time and eat breakfast with the berry pickers before getting out with our load, or we can make the trip and return for breakfast.

Now a man with any consideration at all for the welfare of his team does not like to push them on the road, especially when they must be on the road day after day for weeks at a stretch. Roading is as hard on a horse as on the driver. One does not need to consider the welfare of his steed, however, the iron horse. With all bearings properly adjusted and all nuts tight, and with plenty of oil supplied where lubricants are required, one need not fear of overtaxing a motor car. Twenty-four hours a day, seven days a week it is all the same.

The current of air created by the rapid movement of the car is deliciously invigorating. There is not the least inclination to take a nap while on the road, and distance is consumed so rapidly that with the shifting roadside scenery one is not inclined to make any note whatever of time. Pleasure trips worth while, too, are possible when the whole family can, of a summer evening, go scooting along some country road and to a distance that would be simply impossible and out of the question with even the best of teams, the horses in the meantime cropping grass in the pasture or munching hay from the manger.

Is the proposition a paying one financially? This question is quite proper. Now while we have not any data to show the exact upkeep of our machine, we have no hesitation in affirming that the investment is proving to be a profitable one for us. We have not the least inclination to go back to the old way. We can make as many as six to eight trips daily to our market and feel no special weariness at the close of the day. Last season, in addition to our fruits and vegetables we delivered the product from five and one-half acres of cucumbers, carrying as much as 1,900 pounds to a load. One load was delivered in one hour and ten minutes, and we stopped at our grocery for groceries, too.

We have also found our machine handy for the doing of odd jobs about the farm, such as hauling small quantities of corn, hay and the like. Our boys prefer this rig to the horso every time. Where one has children coming up, the auto is valuable as an educator towards the farm and farm life. This holds true with respect to all kinds of up-to-date machinery.

When a boy, I occasionally rode behind ox teams, and that was considerably less than forty years ago, too. We no doubt thought the limit reached with the advent of the safety bicycle, but just see what we havo come to a short twenty years or so later! Steering an auto is heaps more fun and incomparably easier than pushing the pedals of our long-ago "bike." But we are not yet content, for with a small tractor to plow and fit our ground, and do hauling about the farm, rural life, so it seems to me, will be just about idealized. And this is not far away. Eternal progression is the law, and I can perceive of no reason why those of us who have chosen to select one of the several lines of agricultural endeavor as a life work, should not receive the benefits accruing through the progress of the twentieth century science.

From the view-point of both economy and convenience, it is absolutely necessary that the farmer owner of such machines acquire sufficient knowledge of their mechanism to qualify him to repair and set to rights any ordinary difficulty, and to overhaul the working parts when necessary. No driver can feel entirely secure while on the road unless he possesses such knowledge and skill.

Michigan. M. N. EDGERTON.

Good Home Canning.

I cannot agree with H. J. N. regarding the method to apply in preparing foodstuffs for the market. A large number of farmers are preparing to venture into the canning business this year, and a steam tight boiler, being quite expensive, might prevent a number of them from doing so, after reading the article of H. J. N. in the May issue.

From actual experience I can say that a temperature of 212 degrees will successfully sterilize beans, tomatoes, sweet potatoes, fruits of all kinds, and pork sausage, and the process requires from 40 to 60 minutes.

On a small outfit costing $12.00, we prepared for market during the season of 1911 more than 2,500 cans of fruits and vegetables. We guaranteed our product to keep in any climate, and to be the equal of any other brand on the market as regards quality, and we have not been called upon to make good our guarantee.

Out of our entire pack, we had one swell due to imperfect soldering, and we also have on hand a fine supply of corn for family use, all put up without steam pressure.

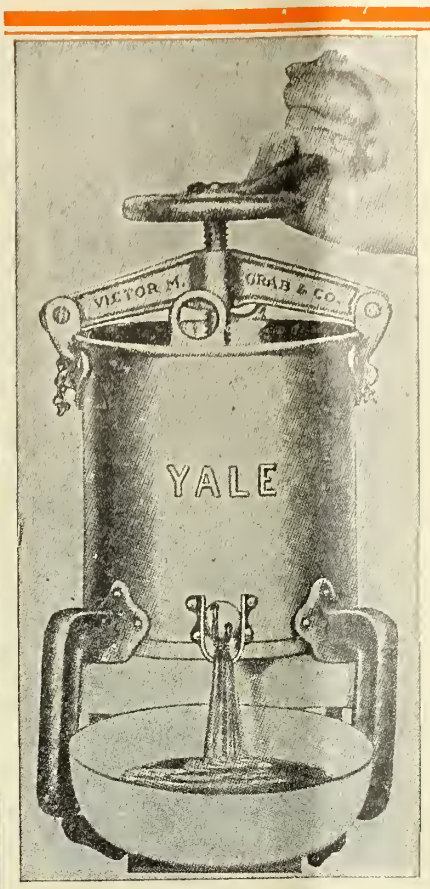
It takes expensive machinery to handle corn and peas profitably, but where a farmer wants to concentrate his efforts on tomatoes, beans, sweet potatoes and fruits, I would strongly advise the use of a hot water canner. They are easy to operate and they do the work quickly and well.

At this writing, May 10th, we have ready for planting about 20,000 fine tomato plants. To take care of this crop we have purchased a hot water machine, with a capacity of ninety-two three-pound cans at one filling. If we considered steam pressure absolutely necessary we would use it, but in our decision to use hot water, we are guided not only by our own experience, but by the results of our agricultural experiment stations. I want to see the day when a canning machine on the farm will be as important as a plow, or self-binder, and I am glad to see the numerous articles which appear in The Fruit-Grower on this subject.

T. C. PRESTON.

The man who has good Jonathan apples this year should look after them carefully, for in spite of the big apple crop promised, Jonathans will be in demand. This variety is reported as being short in several localities.

PREPARE FOR THE COMING FRUIT SEASON



Last season The Fruit-Grower offered as a premium for securing new subscriptions the Yale Fruit Press. It proved to be so successful that we have decided to make even a beter offer this season.

This is the best, most practical and durable press on the market. It is unequaled for making jellies, jams, cider, grape juice, preserving fruits and vegetables, meats, ple so that a mere child may operetc. Its construction is very simate it. It is easily cleaned, clamps to any table or handy place. You simply place the material in the colander, fix beam in position, attach the wheel and every pound of pressure exerted on the crank exerts forty-eight pounds of pressure to the contents. It is four-quart size and constructed of steel, and tin-plated. Every home should have one in order to save time, labor and trouble.

In selecting premiums of this kind, The Fruit-Grower always tries to select something that will prove satisfactory in every respect, and from past experience with this, we are sincere in believing that we have selected one of the most useful devices that could be found.

We will ship one of these presses, by freight on receipt of six new subscriptions to The Fruit-Grower with a remittance of $6.00.

Write us for terms to agents and we will tell you how to earn cash comissions on all new subscriptions sent in.

Send for sample of The Fruit-Grower today to show to your friends and neighbors and you will find that you will be able in a very short time to secure enough new subscriptions to earn one of these useful articles. Further particulars furnished on request.

Address all communications to

THE FRUIT-GROWER

Premium Department **ST. JOSEPH, MISSOURI**

$1 Worth for 25c

We have a few hundreds of the Brother Jonathan series of fruit booklets, of which we sold thousands a few years ago, and want to close them out quickly. These books originally sold at 25c each, and Fruit-Grower readers took thousands of them at that price.

We Now Offer Four of These Books, postpaid, for 25c

Select the numbers you want, and send your order today, for there are only a few of several numbers. Orders will be filled as they are received, and if any number you select cannot be furnished, we reserve the right to send another number instead. Here is the list of those we can furnish now:

No. 2—A Treatise on Spraying. Tells all about how to fight insects and diseases which attack apples and strawberries.

No. 3—Strawberries and How to Grow Them. A dandy little book telling how to grow this most valuable fruit.

No. 4—Gardening. A practical little booklet which discusses all phases of gardening, including making and management of hotbeds.

No. 5—Packing and Marketing of Fruits. This book takes up the problem of packing and marketing in a common-sense manner.

No. 6—Bush Fruits. A booklet which discusses the culture of raspberries, blackberries, gooseberries, etc.

No. 7—Grapes. This booklet discusses planting and care of vineyards, and illustrates the famous Munson system of training the vines. Only 75 copies of this number are available.

No. 8—Pruning Booklet. Discusses the whys and wherefores of pruning fruit trees and shrubbery. Only 50 copies available.

No. 10—Stone Fruits. Discussing the culture of cherries, plums, peaches, etc., with notes as to varieties.

No. 12—The Corn Book. A little book containing valuable information on corn culture, including chapters on seed selection.

Order These Books at the Rate of Four for 25 Cents

Send us list of the numbers you want, and act quickly, so that you will be sure of getting the numbers you want. Here's a real bargain, for thousands of these booklets were sold at 25c each, and every purchaser received his money's worth. Send order today to

THE FRUIT-GROWER, Book Dept., ST. JOSEPH, MISSOURI

This Pony Free

"C-H-U-M" is his name, and we are going to send him and his complete outfit as it looks in the picture below free to you or some other boy or girl. Pony, Buggy, Harness, Saddle, Bridle, all sent free, to your door, all charges paid. Send us your name today if you want "Chum"

HERE ARE THE NAMES OF OUR 58 LUCKY PONY WINNERS

1. "Bob", John B. Corn, Jr., Pulaski County, Ark.
2. "St. Nick," Marcella Conley, Chickasaw County, Iowa
3. "Tom," Helen Herrmann, Cuming County, Nebr.
4. "Dandy," Grace Burrows, Wright County, Minn.
5. "Duke," Dorothy Lee Eagle, Jackson County, Mo.
6. "Dixie," Walter McLaren, Moody County, S. D.
7. "Spotty," Mildred Etter, Watonwan County, Minn.
8. "Trixie," Frank Harris, Yellowstone County, Mont.
9. "Mac," Ruth Mead, Saline County, Mo.
10. "Tony," Maurice Himie, Chippewa County, Minn.
11. "Bonnie," Amyle Kafer, Carroll County, Iowa
12. "Fritzie," Marie and Margie Parker, Knox County, Ill.
13. "Jerry," Cleta Johnson, Douglas County, Kans.
14. "Don," Oliver E. Olson, Koochiching, County, Minn.
15. "Bingo," Jeanette Lansing, Knox County, Nebr.
16. "King," Vic. J. Breitbach, Dubuque County, Iowa
17. "Evangeline," Gladys Houx, Saline County, Mo.
18. "Queenie," Stan. J. Malicek, Redwood County, Minn.
19. "Captain," Ida O'Keefe, Mountrail County, N. D.
20. "Roine," Clarence F. Busick, Adams County, Ind.
21. "Teddy," Geo. Cooper, Stearns County, Minn.
22. "Sonny," Elmer Hoth, Allamakee County, Iowa
23. "Jim," Joey Edwards, Barton County, Kans.
24. "Fairy," Lawrence Ulrich, Washington County, Minn.
25. "Jack," Bernice Harvey, Union County, Iowa
26. "Patsy," Rena Smith, St. Lawrence County, N. Y.
27. "Gus," Frank and Vera Brown, Dakota County, Nebr.
28. "Mischief," Orville Himle, Chippewa County, Minn.
29. "Sparkle," Eloise Savage, Codington County, S. D.
30. "Ned," Jules and Ruby Kohelin, Yellowstone County, Mont.
31. "Prince," Norris Nupson, Fillmore County, Minn.
32. "Empress," Avery and Orrie Knight, Chickasaw County, Ia.
33. "Brownie," Twylah Hart, Shelby County, Ohio.
34. "Beauty," Bertram Eldridge, Stark County, Ill.
35. "Inez," Edwin Kohensteln, Goodhue County, Minn.
36. "Fuzzy," Mary McMahon, Cavalier County, N. D.
37. "Daisy," Leta Hainline, Adair County, Iowa.
38. "Major," Margaret Roth, Rice County, Minn.
39. "Ladnie," Robbie E. Notten, Chickasaw County, Iowa.
40. "Joe," Harold R. Palmer, Oswego County, N. Y.
41. "Polly," Alfred Hokenstad, Dane County, Wis.
42. "Rastus," Herbert Hill, Clay County, Minn.
43. "Billie," Hazel McMartin, Kingsbury County, S. D.
44. "Derby," A. Fitzsimmons, Clayton County, Iowa.
45. "Ginger," Chas. Foster, Randolph County, Mo.
46. "Hero," Gudrumn Ekeland, Lac-qui-Parle County, Minn.
47. "Buster," Clifford Tures, Brookings County, S. D.
48. "Ponto," Joseph Dziuk, Benton County, Minn.
49. "Jewel," Arthur Marode, Douglas County, Nebr.
50. "General," Geo. and Peter Hentges, Yellow Medicine, Minn.
51. "Bess," Wilfred Dearchs, Kossuth County, Iowa.
52. "Happy," Harry Parker, Fergus County, Mont.
53. "Pepper," Merle Herschleb, Dodge County, Minn.
54. "Jean," John H. Elrod, Smith County, Tenn.
55. "Sportsman," Harold A. Pierce, Waushara County, Wis.
56. "Cheyenne," Marguerite Hallett, Winnebago County, Iowa.
57. "Scotty," These two ponies were given away June 24th, 1912, and we didn't know the names of the winners when we wrote this advertisement but we will tell you who won them just as soon as we hear from you.
58. "Midget,"

Your Best Chum

"Chum" is the pony's name and he's the best chum you or any other boy or girl could ever have. "Chum" is not like your other chums. He's always around when you want to play with him. He will learn to know you and come a-running when you call or whistle. He's never too tired for a canter in the saddle or to be harnessed up to his nobby pony wagon which we also send free, and he will carry you and all your boy and girl friends just about as fast as you would want to go.

If you have been to circuses you have seen some ponies who look something like "Chum," but no matter how many circuses you may have seen, you never saw a prettier pony than "Chum," nor one that you can teach to do more clever tricks. And say! this buggy and harness are about the nicest you ever saw. We have bought so many we know just the kind to get,—strong, comfortable, easy running, and as pretty as can be.

Here's "CHUM"

and His Dandy Outfit

You'd Be Proud of Chum

"Chum" is a real Shetland Pony, three years old, 42 inches high, and weighs about 320 pounds. We selected him at the famous Heyl Pony Farm, at Washington, Illinois, where we had over 100 ponies to choose from. In lots of these towns where we have sent ponies free, our Lucky Pony Winners are the only children who own a real Shetland Pony in their town. Think how proud you would be driving "Chum" to school, and to the post office, and to church, and everywhere. You would be just the happiest child alive if "Chum" were yours. Didn't you ever notice what good times children have who own ponies, and how pretty these cute little fellows look trotting up the road? Everybody runs to the door and stops to look at a Shetland Pony going by. Can you think of anything you would like to own better than "Chum"? Read this page through carefully and then send us your name and address at once.

1000 Votes Free

If you send us your name and address right away we will at once send you 1,000 votes free toward winning "Chum." See what a fine start these free votes will give you, and if you follow our directions and do as these 58 other boys and girls did, you will have just as good a chance to get "Chum" as they had to get their ponies, and none of our Lucky Pony Winners nor their brothers or sisters can get "Chum." but you have a chance to get him if you send us your name and address today. Boys and girls who write us quickest are generally the luckiest in winning our ponies. Cut out the coupon good for 1,000 free votes, write your name and address on it, paste it on a postal card or put in an envelope and mail it to us today. Be sure to write your name and address very plainly so that you will get the 1000 free votes at once

Just as soon as we hear from you we will send you the coupon good for 1000 free votes, enter your name in the contest, and tell how to take care of Shetland Ponies and feed them. And we have a surprise for you which will double your chances of getting one of our Shetland Ponies free. The work we require you to do to become a registered contestant for "Chum," is something that pretty near any boy or girl who could drive a pony can do, and we promise every contestant a fine prize of their own selection.

Cut Out and Sign This Coupon and Mail Today. Do It Now

GOOD FOR 1,000 FREE VOTES!

THE FARMER'S WIFE, 326 Webb Bldg., St. Paul, Minn.

Please send me 1,000 FREE VOTES for "CHUM." Certificate of Entry, Shetland Pictures of "Chum," and tell me how to take care of Shetland Ponies and feed them. I haven't any Shetland Pony and want to own "Chum."

Name_____

Postoffice_____

R F D_____

State_____

Don't Let Anyone Persuade You That You Cannot Win "Chum"

Probably some folks will tell you that we won't give you "Chum," just like people told these other 58 boys and girls and if you believe these people you'll never be one of our Lucky Pony Winners.

But the bankers or the postmasters in their towns told these other 58 boys and girls that the Webb Publishing Company, publishers of the Farmer's Wife, is one of the largest Publishing Companies in the United States and that of course we could afford to give away so many ponies and outfits to boys and girls to advertise our paper. So these 58 boys and girls sent us their names and addresses and won their ponies, and you will have to send us your name and address if you want us to send "Chum" to you. Wouldn't you rather be one of our Lucky Pony Winners and believe that we give away ponies. If we didn't give away ponies free the editor of this paper wouldn't let us print this advertisement. But you know we do give them away, so you must send us your name and address if you want "Chum," and we will help you right away by giving you 1,000 votes free toward him.

Did You Ever Dream You Would Own a Pony

Almost every boy and girl sometimes dreams that they will own a pony. All of our 58 "Lucky Pony Winners" did, and we made their dreams come true by sending them their Ponies and outfits. We never heard of one of these 58 boys and girls until they wrote us that they wanted one of our Ponies. As you can see by reading over the list the 58 Lucky Pony Winners live all over the United States, some of them more than 1,000 miles from St. Paul, the home of The Farmer's Wife, so it doesn't make any difference where the winner lives, "Chum" will be sent without any cost to you. More than half of our 58 Lucky Pony Winners live in towns with less than 500 population, and some of them in places with less than 100 people, so no town is too small or too far away for us to send "Chum" and his whole outfit.

No child, no matter how rich his parents may be, owns a nobbier or more desirable pony and outfit than this one which we shall send free and all freight and express charges paid. This is surely the best chance you ever had to get a Shetland Pony, so if you haven't any and think you would like to have us give you this one, send your name and address to us right now so it will be sure to get to us quickly.

Address Your Letter or Postal to **THE FARMER'S WIFE** 326 WEBB BUILDING, ST. PAUL, MINNESOTA.

634.05
WE
MAR 12

"The National Farm Magazine"

AUGUST, 1912 Vol. 23 No. 8

THE WESTERN FRUIT-GROWER

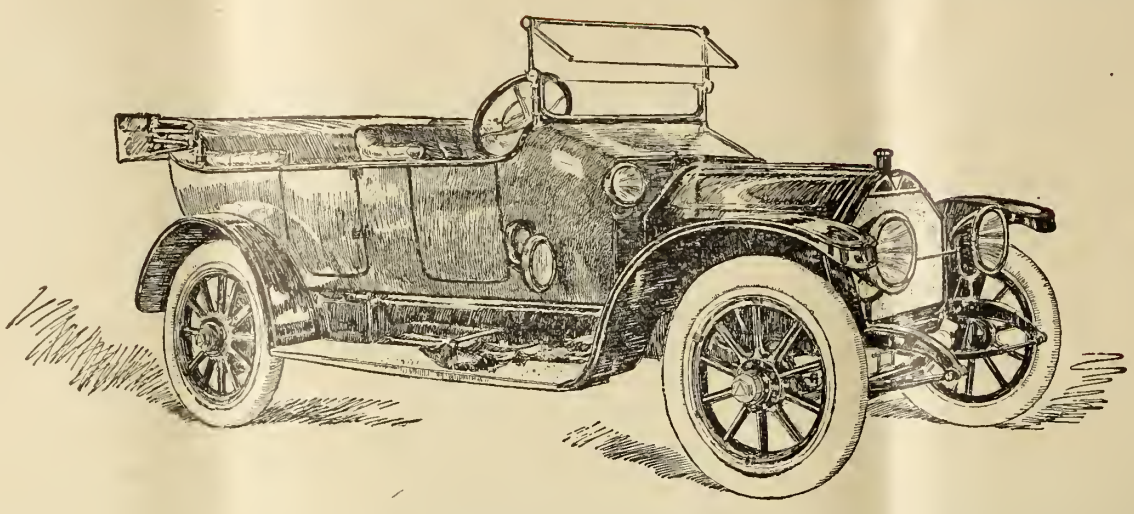
ST. JOSEPH, MISSOURI

Copyrighted, 1912, by The Fruit-Grower, St. Joseph, Mo.
Title Registered in U. S. Patent Office.

Ten Cents a Copy
One Dollar a Year

New HUDSON "37"

Furnished Complete—No Extras to Buy



The Masterpiece of 48 Engineers. They Had a Hand in Building 200,000 Cars of 97 Well Known Makes

Don't Fail to See This Car

In the HUDSON "37" is expressed the combined skill and experience of the greatest body of automobile engineers in the industry.

These men represent the training of the greatest factories in the world. They have learned what experience has taught the 97 principal makers of Europe and America.

They were active, important members of those various organizations and combined had a hand in the production of more than 200,000 automobiles.

Imagine what strides, what advancement, men of such experience are bound to offer in the car which all have joined in perfecting.

You probably have an ideal of what a motor car should be. Your knowledge of automobile short-comings undoubtedly has suggested improvements which you would have in a car if it were built to your order.

Well, here is where you will find not only what you wish to see, but also what has been expressed through the experience that has been gained from the 200,000 owners who have used the cars which these men have helped to build.

It is all in the one car. It expresses as nearly the limit of four-cylinder construction as has been reached.

Hadn't You Better Wait?

Even if you are impatient to have a new car now, don't you think it better to see the HUDSON "37" before you buy?

It will only be a few days at the most before your dealer will have a "37" to demonstrate to you. If you buy any other car before you have seen the "37," disappointment is surely in store for you.

No car you can get today, regardless of price, has all the features that are offered in the "37."

Consider for a moment the rapid advancement that has been made in motor car building. It is almost as startling as are the changes in fashion. Think how strange are the open cars of two years ago. What proportion of their original cost do you think such cars now bring? It is not due to wear that their value has declined so much. No, it is the advance that has been made in automobile building since the open cars were put on the market.

With that thought in mind you must recognize the importance of choosing wisely now. Automobiles as now built should be of service for many years and you don't want to feel that you will have to buy a new car in two, three or four years because the one you have just purchased, will at that time be out of date.

Electric Self-Cranking—Electrically Lighted

The Greatest Engineer of All—Their Chief

At the head of these experts is Howard E. Coffin, the foremost automobile engineer of America, recognized here and abroad as the most startlingly original designer the industry has produced.

His genius is an inspiration to his associates. From him they have gained in ability. On account of them he has become a broader and more versatile builder.

What one man lacked in experience, some one of his associates was able to supply. The problems one was unable to solve, others soon found the answer for.

That accounts for the completeness of this car. That accounts for the fact that you will find on it the very things that you have wished to find on an automobile. That explains why this car will do the things which other four-cylinder automobiles have failed to accomplish.

Your Safety in This Choice

No one is likely to soon have many new ideas to offer that these 48 engineers have not already anticipated.

They all combine in saying that the new HUDSON "37" represents the best that there is in four-cylinder construction.

They proved every move they have made through 20,000 miles of gruelling country, mountainous, mud and snow driving.

The most abusive treatment one of the most skilled drivers in the world could give this car in the thousands of miles he drove it, without developing a single weakness, or discovering a single detail in which improvement could be made either in design, construction, simplicity, easy riding qualities, responsiveness, safety or power, is a guarantee that you will find it expresses your ideal of what a four-cylinder car should be.

Some of its Notable Features

Electric Self-Cranking. Automatic. Will turn over motor 30 minutes. Free from complications. Simple. Positively effective.

Electric Lights. Brilliant head lights. Side lights. Tail lamp. Illuminated dash. Extension lamp for night work about car. All operated by handy switch on dash.

Ignition. Integral with electric cranking and electric lighting equipment. Gives magneto spark. Known as Delco Patented System, the most effective, efficient yet produced.

Power. Four-cylinder—en bloc, long stroke. New type, self-adjusting multiple jet carburetor. High efficiency, great economy, 43 horsepower, brake test. 37 horsepower at 1500 revolutions per minute.

Speedometer. Clock. Illuminated face. Magnetic construction. Jeweled bearings. Registers up to 60 miles an hour. Eight day keyless clock.

Windshield. Rain vision and ventilating. Not a makeshift. Not an attachment. A part of the body.

Upholstering. 12 inches deep. Highest development of automobile upholstering. Turkish type. Soft, flexible, resilient. Comfortable positions. Hand-buffed leather—the best to be had.

Horn. Bulb type Concealed tubing.

Demountable Rims. Latest type. Light. Easily removed. Carry 36x4 in. Fisk tires—heavy car type. Extra rim.

Top. Genuine mohair. Graceful lines. Well fitted. Storm curtains. Dust envelope.

Bodies. Note illustration. Deep, low, wide and comfortable. You sit in the car—not on it. High backs. Graceful lines. All finished according to best coach painting practices. 21 coats—varnish and color.

Nickel trimmings throughout.

Gasoline Tank. Gasoline is carried in tank at rear of car. Simple, effective, with two pound pressure. Keeps constant supply in carburetor either going up or down hill. Magnetic gasoline gauge continually indicates gasoline level.

Wheels. Extra strong. Artillery type. Ten spokes in front wheel Ten hub flange bolts. Twelve spokes in rear wheel. Six hub flange bolts. Six spoke bolts.

Bearings. All Roller bearings, thoroughly tested. Latest type.

Rear Axle. Pressed steel. Full adjustable, full floating. Large bearings. Heat treated nickel steel shafts. Easily disassembled, an item which indicates the simplicity and get-at-ableness of the entire car.

Models and Price. Five-Passenger Touring, Five-Passenger Torpedo, Two-Passenger Roadster—$1875 f. o. b. Detroit. Canadian price, duty paid, $2425 f. o. b. Detroit. One price to all—everywhere.

Simplicity. The HUDSON standard of simplicity is maintained. Every detail is accessible. There is no unnecessary weight. All oiling places are convenient. There are but two grease cups on the motor. Every unit is so designed that it can be quickly and easily disassembled. Think what an advance this is over even the previous HUDSON—the "33"—the "Car with 1000 less parts."

HUDSON MOTOR CAR COMPANY

7409 Jefferson Avenue, Detroit, Michigan

No. 150

WESTERN
THE FRUIT-GROWER
AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Volume 23 | ST. JOSEPH, MISSOURI, AUGUST, 1912 | Number 8

EASTERN ORCHARDING

Report of a Recent Visit Through Orchards of New York—Many Very Old Trees

Little Journeys to Eastern Orchards.

For a long time we have been promising ourselves a visit to a number of Eastern fruit districts, and in June opportunity came to visit a few of the many places we had in mind. The experience will be repeated, and other districts will be visited from time to time. Eastern horticulture is somewhat different from the horticulture of the Middle West, and perhaps still more unlike the horticulture of the Mountain States, but every part of the country can learn from all others, and one should know just what competition one's fruits are to meet when they reach the market. The Fruit-Grower, therefore, wants to keep in close touch with all fruit districts, and articles will be published reporting our observations.

Some New York Orchards.

A number of years ago a man came out of the East and made the cocksure statement that no apple trees were being planted in New York state to replace the old ones which are dying out. This statement has been generally accepted throughout the West as being true—but it isn't, not by a jugful. New orchards are being planted all through Western New York fruit districts, and the end has not been reached.

New York State likely has more kinds of climate than any other state in the Union, and this must be considered in taking account of the fruit industry there. We hear much of the long, cold winters of Upper New York, but one must not conclude that the farther north one goes the colder the winter, for along the southern shore of Lake Ontario is located New York State's most extensive fruit district, and this is one of the best places in the entire country to grow peaches, too, so that the winter isn't so extremely cold, after all.

Niagara and Orleans Counties produce more apples, one year with another, than any other two counties in the United States; indeed, a prominent man recently made a speech in which he said that he could name five stations along the New York Central Railway which would ship more apples year after year, than a combination of several of the Western states which claim to be "some pumpkins" in growing apples. And there are other counties up there, too, which send out lots of fruit every year, such as Wayne, Monroe, Cayuga, Oswego, and others.

Our first visit to Western New York orchards was confined to Orleans, one of the smallest of counties; in fact, we were able to visit only a few orchards, around Albion, and the other counties are left for other visits.

Orcharding in Orleans County is different from orcharding in the West—in the size of the orchards, for one thing. Most of the orchards are small, ten to twenty acres being a very popular size. This does not mean that small orchards are bunched up against each other, as they are in the irrigated districts, for as a rule these orchards are part of a farm of 100 to 160 acres, or even more, and these farms are not being cut up into small tracts. If one wants to buy the orchard, the entire farm must be bought at the same time—and in the best counties the chances are that the place isn't for sale at any price. The New York man proudly calls attention to this as another point of difference from Western conditions. He says the Western man will sell anything if he gets enough money for it, while the New Yorker reminds a prospective buyer that he was born on the farm he now owns, and perhaps his father was born there, and he would regard it as sacrilege to dispose of it. And, besides, he's making big money out of the farm—maybe it's sentiment, maybe it's good, sound business sense, that keeps him from selling, but anyway, the place isn't for sale. And so there you are.

Most of the orchards now in bearing are old, for it was true a few years ago that not many young orchards were being planted. The trees that have been set since interest in orcharding was revived, are not yet old enough to bear, as a rule, so that the fruit now being sent out from Orleans County annually comes largely from trees from thirty to a hundred years old. No matter how far apart these trees were planted, they are crowding now. Some old orchards which were set thirty feet each way between trees have had three-fourths of the trees cut out, leaving them sixty feet apart, and still they are too close.

In many of these old orchards sunlight seldom reaches the ground, so dense is the shade. The lowest branches are five to seven feet from the ground, so that the soil can be cultivated under the canopy formed by the branches. One peculiarity strikes the visitor from the West, and that is the horizontal growth of the limbs. On nearly all the old trees, of all varieties, limbs grow more horizontally than on Western trees. The New York man will tell you it is because the limbs have borne such great quantities of fruit they cannot stand upright any more. Whatever the reason, it seems to be the rule that limbs on the old trees have a very great spread for the height of the tree—and they are high enough, too, thank you.

The annual growth is less than is found on Western trees, whether in the Middle Western states or in the irrigated districts farther west. This is really a good fault, for it saves a lot of pruning, which is an expensive work in trees as large as some of these old-timers. Perhaps this slow growth of the trees is largely responsible for their longevity and for the remarkable toughness of their wood. Great limbs twenty feet or more in length will bear a barrel or two of apples at the extreme end, and there will be no sign of breaking or cracking, so tough is the fiber of the wood. Perhaps the Western orchardist pushes his trees too fast to permit this condition to prevail in his orchard. His trees being younger, they make a more rank growth, and if some of the surplus wood is not cut out, the Western man will soon have a mass of brush. But these old New York trees are more deliberate in their habits, and at their advanced age are not energetic in making new growth. All this must be considered in comparing methods of pruning as practiced in the different sections.

It was our good fortune to be shown around by Mr. D. S. Beckwith and his son, J. S. Beckwith, of Albion. The elder Beckwith is well known as an apple buyer as well as a grower, having bought apples in the Middle West twenty or more years ago, when New York was growing few good apples. To this gentleman we are indebted for a brief account of the change which took place in Western New York along about 1892 and for several years following. Perhaps his story will be helpful to some apple growers of the Middle West, who are now in just about the same position the New York orchardists were at that time.

EIGHT-YEAR-OLD STANDARD GREENING TREE, WITH DWARF TREES IN BACKGROUND.

For many years Western New York orchards had produced high-grade apples without any spraying whatever; the fruit had sold at satisfactory prices, and while the buyers found an increasing number of worms year after year, and while the apples were more knotty from scab, they had to buy them, for none other was to be had.

Finally, about 1890, the New York apples became so very bad that the buyers decided to look elsewhere for apples, and at just about that time a lot of the young orchards in Missouri and Illinois came into bearing. In 1892, Mr. Beckwith said, he came to St. Joseph, Mo., and met the late N. F. Murray, then prominent in the work of the Missouri State Horticultural Society. Mr. Murray helped him to meet the fruit growers of Northwest Missouri, and that year he bought more than 50,000 barrels of apples and send them back to New York State, storing many of them right in the heart of the apple belt. For several years thereafter he came to Northwest Missouri and bought thousands of barrels of fruit every year, and it was of the very highest quality, too, for the Missourians of that day proudly boasted that they had none of the pests of the East; they did not spray, nor did they need to do so—and they slyly informed the visitor from New York that he had bettter come out West, where we would never have enough codling moth or apple scab to bother with. Poor, deluded souls! It's a good thing they were gathered to their fathers before they saw some of the apples in this year 1912 A. D.!

But to get back to our story:

Mr. Beckwith took several barrels of Ben Davis apples grown in Northwest Missouri to a meeting of fruit growers in Western New York, and opened them for their inspection. He said it was as beautiful a lot of fruit as he had ever seen, and he told his neighbors that was the kind of apples they would have to compete with. They compared this smooth, perfect fruit with their own wormy, scabby apples and then knew they must do something.

Did they cut down their trees, as thousands of our growers in the Middle West are doing? Not so. The New Yorker isn't that kind of a man. It took too long to grow those trees—perhaps his father, or his grandfather planted them, and it would be sacrilege to destroy them—and, remember, too, they had made him a lot of money. Don't overlook the earning capacity of the trees.

These New York men went to the experiment station officials and asked, "Men and brethren, what shall we do?"

And the authorities at once preached the gospel of spraying unto them. Note: You cannot save a man until he knows he needs salvation.

The rest of the story is short. The growers began to spray. They sprayed when it was thought the proper thing to use paris green and Bordeaux mixture, and they are still at it, using all the newer materials which have been found more effective.

In this way the old orchards were cleaned up, and when San Jose scale secured entrance a few years ago, still better methods of spraying were adopted, and today these old orchards are producing wonderful crops of fruit, and the men who own and care for them, almost without exception, have made money and are still mak-

OLD BALDWIN TREE IN ALBERT WOOD ORCHARD, CARLTON, N. Y.

ing it. Nowhere in the United States can a more prosperous lot of farmers be found than the men in New York's fruit belt who give their trees the care they should have. They love their work, and the annual meetings of the Western New York Horticultural Society and the New York State Fruit Growers' Association, at Rochester, are two of the most important meetings of the kind held in this country. More than a thousand fruit growers attend each of these meetings; so great is the attendance that membership cards are necessary to secure admission to the hall in which the sessions are held.

Some of the Orchards Visited.

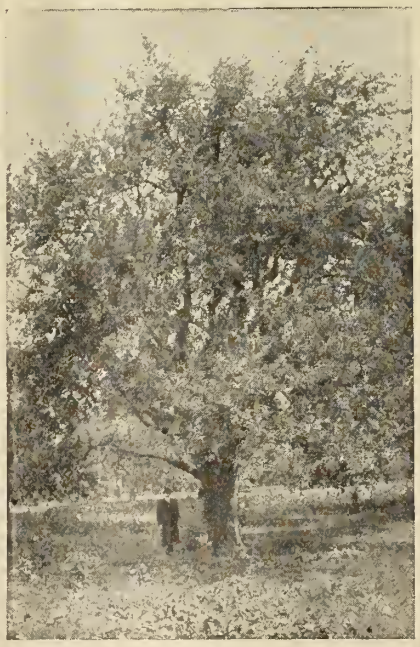
With this review of the orchard situation in general, we set out from Albion to inspect some of the orchards at close range. Before we had left the limits of the village of Albion Mr. Beckwith called attention to a large cold storage plant, and said that it was one of a great number which are located in the apple belt. In fact, nearly every little town has one or more storage plants, a vinegar or cider factory and perhaps a canning plant. Certainly Albion is supplied with all these advantages, and Mr. Beckwith, who manages one of the large storage houses, says that about 90 per cent of the storage space is filled with apples which are brought by wagon direct from the orchard, there being no railway charges on most of the fruit stored. This means that apples picked and packed today can be put in storage by night—a great advantage in increasing the keeping qualities of the fruit. About half the capacity of the storage houses is engaged by growers who hold their apples. Apple buyers use the rest of the space.

The great number of cider mills, evaporators, canning plants, etc., provide a market for all low-grade fruit, and nothing need be wasted. At the same time, perhaps, this condition may work against the growing of the highest grade of apples, since fruit which is off color or inferior in some other respect can be disposed of to advantage. If it could not be sold, perhaps less would be grown.

Another advantage which the New York growers enjoy is a fine system of roads. The state of New York is helping to build macadamized highways all through the state, and the various counties are continuing the work. This has been of great help to fruit growers especially, for they can haul great loads of apples and get their fruit in storage as soon as packed. We found that land values were greatly affected by the roads—and every farmer wants to help improve the highway leading to his place.

DUCHESS ORCHARD ON ALBERT WOOD FARM.
Rye planted between trees has just been cut.

Our first stop was at the Albert Wood orchard, Carlton Village, N. Y. This is one of the best-known orchards in that section, and one which has a record as a money maker. The old orchard, consisting largely of Baldwin trees, is a very old one, and trees had been crowding for years, until a few years ago every other diagonal row of trees was cut out, and now the great trees have taken on new life, are thrifty and vigorous and produce an enormous quantity of fruit. From some of these trees twenty barrels or more of apples are harvested in a single season.



TREE ABOUT 100 YEARS OLD IN OLD BECKWITH ORCHARD, ORLEANS, COUNTY, NEW YORK.

The man under the tree is D. S. Beckwith, whose grandfather planted the orchard.

We are not violating any confidence when we say that there was a time a number of years ago when it looked as though this old orchard would swamp its owner; the fruit produced year after year was of poor quality and hard to sell at any price, and the remainder of the farm could scarcely carry the burden of the orchard. Finally, however, better methods were adopted, and the returns have been gratifying in the extreme. The orchard has been very profitable, and young orchards have been planted within recent years.

At this place is located an experimental orchard which is being cared for by the Geneva Experiment Station, to test the comparative value of dwarf and standard apple trees. In this orchard were planted trees of various varieties, some of which were worked on Doucin stock, some on Paradise, and others are standard trees; all were planted at one year of age, and all were headed low. The dwarf trees came into bearing slightly earlier than the standard trees, but now, at seven years of age, the standard trees are producing more fruit and are in every way more promising. The manager of the farm said that he would be glad if all the trees were standards, low-headed and cared for in the same way.

This farm has a very fine Duchess pear orchard, beautiful to look upon, but which has never paid as has the apple crop. The Duchess doesn't seem to be the variety to plant, for Bartlett and Keiffer make more money for the growers.

As we neared Lake Ontario we found a great change in soil conditions, and also found an increase in the acreage planted to peach trees. Proximity to the lake helps to protect peach buds from winter injury, and heaviest planting is here. Elberta is the leading variety planted, although other sorts are grown to some extent, for there is a good market throughout the peach season for peaches.

On this trip we visited an orchard belonging to the younger Beckwith, who is pursuing up-to-date methods in handling it. He cultivates the trees during the earlier part of the season, and then plants a cover crop to fur-

SALLOW FACES
Often Caused by Tea and Coffee Drinking.

How many persons realize that tea and coffee so disturb digestion that they produce a muddy, yellow complexion?

A ten days' trial of Postum has proven a means, in thousands of cases, of clearing up a bad complexion.

A Washn. young lady tells her experience:

"All of us—father, mother, sister and brother—had used tea and coffee for many years until finally we all had stomach troubles more or less.

"We all were sallow and troubled with pimples, breath bad, disagreeable taste in the mouth, and all of us simply so many bundles of nerves.

"We didn't realize that tea and coffee caused the trouble until one day we ran out of coffee and went to borrow some from a neighbor. She gave us some Postum and told us to try that.

"Although we started to make it, we all felt sure we would be sick if we missed our strong coffee, but we tried Postum and were surprised to find it delicious.

"We read the statements on the pkg., got more and in a month and a half you wouldn't have known us. We all were able to digest our food without any trouble, each one's skin became clear, tongues cleaned off, and nerves in fine condition. We never use anything now but Postum. There is nothing like it." Name given by Postum Co., Battle Creek, Mich.

"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

Ever read the above letter? A new one appears from time to time. They are genuine, true and full of human interest.

GALVANIZED Steel Roofing
Fire, Water & Lightning Proof

Never Before and Never Again
A Roofing Offer Like This!

$1.25 Per 100 Sq. Ft. Buys Best STEEL ROOFING

We have only a limited amount of this Corrugated Iron Roofing at this price. It is brand new, perfect, first-class in every respect, but **light weight.** We bought it at a forced sale and must sell it quick. Sheets 22x24x1¼ inch corrugation. **Our wrecking price is only $1.25 per square,** delivered F. O. B. Cars Chicago. On this item specify Lot No. **A. D. 700.** We cannot pay freight at this unheard of price. This is not galvanized, but black Steel Roofing. Write for our special **Freight Prepaid Prices** on Galvanized Roofing. The lowest prices ever offered in the history of Roofing Materials. We must move our surplus stock on all of our roofing materials. We have absolutely "smashed" prices on every kind of roofing material. This is your opportunity to buy what you need at a tremendous saving. We intend to maintain our leadership as the largest "direct to consumer" Roofing Material Concern on earth and we defy any competitor to meet our prices.

We Will Save You Money on any and every kind of roofing, siding or ceiling. If you are thinking of re-roofing your house, barn, granaries, poultry houses, etc., write us and we will give you the benefit of our years of experience and our best advice as to the kind and quality you should buy. We have full stocks of Plain Flat, Corrugated, Standing Seam and "V" Crimped sheets, suitable for all covering purposes—Roofing, Siding, Ceiling, Lining, etc. **Metal Roofings are best** and cheapest in the long run, easiest to lay, longest life, non-absorbent; fire, water and lightning proof; cooler in Summer, warmer in Winter; do not taint rain water; with ordinary care will last a lifetime. The unequalled buying power, made possible by our perfect buying organization and **our $2,000,000 Capital Stock**—makes it possible for us to pick up these "snaps" and pass them along to you.

GREAT ROOFING BOOK FREE
Chicago House Wrecking Company
Dept. K. 22 Chicago
Send me, free, your Roofing Catalog.

Name ----------
Address ----------

Write Today for Free Samples

Tell us kind of building and size, also ask for our **special low freight paid prices** and clear, easily understood roofing proposition, including our **BINDING GUARANTEE** which, for twenty years, has protected every purchaser. Your money back if any goods fail to meet our representation. Don't fail to send coupon for Great Free Roofing Book.

Chicago House Wrecking Co.
Dept. K. 22 Chicago

Over 1,000 Gallons of Water Pumped With 1 Pint of Gasoline

That's what you can secure with the Eclipse Pumper. This reliable little pumping engine will pump from 200 to 4,000 gallons of water per hour—depending on type and size of pump and lift—and do it on *1 pint of gasoline.*

Fairbanks-Morse Eclipse Pumper

frees you from the labor of pumping by hand and makes you independent of wind or weather. The Eclipse Pumper can be attached to any windmill pump without special attachments.

$50.00—plus the freight from factory, Beloit, Wis.—is all this absolutely guaranteed pumping engine costs you; an engine that makes possible a modern waterworks system and all its conveniences. Write for Descriptive Pamphlet No. MD 953

Fairbanks, Morse & Co.
Chicago St. Louis Kansas City

Protect Your Trees

DON'T take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using

Hawkeye Tree Protectors

Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—¾ cent apiece. Special sizes made to order. Write for circular and samples.

We make Fruit Baskets — get our prices.

Burlington Basket Company
118 Main St., Burlington, Iowa

$4 Puts a Set of STEEL Wheels on Your Wagon

Try wheels 30 days for heavy hauling on roughest roads. If found as represented, pay balance; if not, back comes your $4.

Empire Steel Wheels

Made in one piece. All sizes, to fit any axle. Save 25 per cent of draft. 2,000,000 sold. Owners delighted. Life savers for men and horses. Book free.

EMPIRE MFG. CO., Box 412 • Quincy, Ill.

nish humus. Sometimes clover is used, but last season cowhorn turnips were planted, which furnish lots of humus. As early as the ground can be worked in spring it is plowed and kept clean until the cover crop is planted, late in July or early in August.

At the time of our visit spraying had just been finished, the work having been interfered with by frequent rains. Lime-sulphur and arsenate of lead was used as a combination spray, for insects and fungous diseases. This is the mixture generally used by the growers, although some of them use Bordeaux mixture as a fungicide later in the season, when there is not so much danger of scorching foliage.

Mr. Beckwith is handling this farm along conservative lines and is making good. Practically all the farm is being tile-drained, and apple, pear and peach trees are being planted as rapidly as the land can be made ready. It seems strange to a Western man to see apple trees planted in soil which needs tile draining—but some of the best orchards in New York are in such soil, and they produce wonderful crops. Where tile-drained this soil stands drouth better than where drainage is not provided, and of course it is in much better condition to work in a wet season. In one of the orchards visited drains had been placed in alternate tree rows, and one could easily tell where the drains were located. Hard, vitrified tile is used for drain purposes, and not the soft, porous tile used in many places.

Mr. Beckwith uses great quantities of barnyard manure, which is bought by the carload in Buffalo. He says that barnyard manure is the great fertilizer for orchards in that section, and various growers use different methods of securing a supply.

OLD ORCHARD RENOVATED BY J. S. BECKWITH, NEAR ALBION, N. Y.

Some of the growers raise corn, and others put up great quantities of ensilage. In the fall feeding steers are bought on the Buffalo market and carried through the winter. Other growers buy sheep, which are fattened during the winter and sold in spring. Under this plan, if the orchardist gets paid for his work and for the feed, he feels that he has made good money, because of the manure which is secured. By following this practice, year after year, fertility of the orchard is maintained, and the trees are kept in vigorous condition.

None of the orchards visited are large, ten acres being perhaps an average size. This refers only to the old orchards, however, for all along the roadside were young orchards, and they are occasionally larger. Pears, quinces, peaches and apples are all being planted, for all these fruits are profitable.

Every orchard is part of a large farm, where crops of all kinds are grown. Some farms are largely seeded down to grass. Others grow tomatoes, peas, sweet corn, etc., for the canner, others grow navy beans and cabbage, and still others make a feature of potatoes. Diversified farming is the rule, and each man selects the combination of crops which will best fit in with his business. Fruit growing is the main business, and other crops must be selected so that they will not interfere with spraying, cultivation of the orchard or harvesting the crops.

Tenant farming is quite common, for many farm owners have moved to town. If there is a good orchard, the owner of the farm furnishes the sprayer and spraying materials; the tenant sprays the trees, harvests and packs the crop and delivers the barreled fruit to storage house or shipping station; cost of barrels is borne equally, and the crop is then equally divided between the owner and tenant. The owner prescribes the rotation of crops which is followed on the farm, taking care that the fertility of the soil is not depleted. A popular rotation is grass, followed by corn or beans, then oats or barley, then wheat, with clover planted at the same time. All farms are well kept up, and one who visits Orleans County will be impressed with the general air of prosperity which abounds.

Crops for Canners.

When we returned to town we visited a very large canning establishment, which is now increasing its capacity by the erection of a large addition. This canning factory helps to make a market for the various side crops grown by the orchardists, either in young orchards or in separate fields.

YOUNG ORCHARD ON ALBERT WOOD FARM, CARLTON, N. Y.
Trees in foreground are Lady apple trees.

Peas are grown quite extensively, and evidently pay the growers, for a large acreage is planted every year; at any rate, a crop of peas helps the soil. The canner pays $2.75 per hundred pounds of shelled peas up to July 5; after that date the price is lower, running down to a minimum of $2 per hundred. This is to encourage the growers to get their crop in early. This season it is very late.

The peas are planted in drills, the rows being quite close together, and when pods are well filled the vines are cut with a mowing machine, and at once hauled to the canning factory, where the entire load is weighed. The vines are then unloaded into a machine which breaks open the pods and separates the peas from the vines and hulls, and the latter are automatically carried out into the yard and stacked.

The grower is given credit for the weight of shelled peas, and this weight is deducted from the weight of the load of vines, as ascertained when delivered. The grower then knows how much pea-vine hay he has in the stack out in the yard, and when the season is over he calls for his share. It has been found that after the weight of shelled peas is deducted from the weight of the load, the shrinkage will be just about half, so that the grower hauls home a little less than half the weight he hauled to town when his pea crop was harvested.

For sweet corn the canning factory pays $8 to $8.50 per ton for the corn unhusked. It may be said just here that the husks and cobs are put into a silo, and the growers get their share of this feed after the season is over. Tomatoes are contracted for this year at $9 per ton.

Returns from Orchards and Farms.

It is hard to get one of these New Yorkers to tell you what returns he gets from his orchard and farm. He doesn't believe in advertising, as does his Western competitor, so that if there are any big stories available we did not find them. Mr. J. S. Beckwith, however, did give us a few figures concerning a farm he bought in Oswego County—but he will not let us publish them. He bought this farm containing twenty acres of orchard, three years ago, and at the same time bought a twenty-acre orchard adjoining, so that he has forty acres of apples, principally Baldwin and Greenings. The trees had been neglected, and the first season ninety cords of wood was cut out of this orchard, besides the brush too small to make into wood. Trees have been well sprayed, and for the past three seasons have produced profitable crops. Beans and

Message Bearers Ancient and Modern

Pheidippides, the most noted runner of ancient Greece, made a record and an everlasting reputation by speeding 140 miles from Athens to Sparta in less than two days.

Runners trained to perfection composed the courier service for the transmission of messages in olden times. But the service was so costly it could be used only in the interest of rulers on occasions of utmost importance.

The Royal messenger of ancient times has given way to the democratic telephone of to-day. Cities, one hundred or even two thousand miles apart, are connected in a few seconds, so that message and answer follow one another as if two persons were talking in the same room.

This instantaneous telephone service not only meets the needs of the State in great emergencies, but it meets the daily needs of millions of the plain people. There can be no quicker service than that which is everywhere at the command of the humblest day laborer.

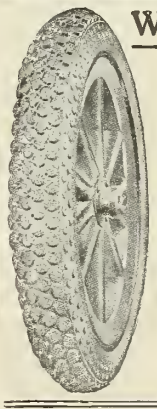
Inventors have made possible communication by telephone service. The Bell System, by connecting seven million people together, has made telephone service so inexpensive that it is used twenty-five million times a day.

Captains of war and industry might, at great expense, establish their own exclusive telephone lines, but in order that any person having a telephone may talk with any other person having a telephone, there must be One System, One Policy and Universal Service.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

Every Bell Telephone is the Center of the System

DAYBREAK PHOSPHATE
GROUND 95% THROUGH 100 MESH
GROUND PHOSPHATE ROCK.
Is the Brown Tennessee Rock Phosphate pulverized to a fineness that 95% passes a 100 mesh screen, 80% passing a 200 mesh screen, and is absolutely guaranteed to contain a minimum of 13% Phosphorus (29¾% Phosphoric Acid).
Is endorsed by the leading experiment stations as the best and most economical carrier of Phosphorus. It appeals only to the intelligent farmer who utilizes Nature's abundant source of Nitrogen by growing legumes and who keeps his soil alive with humus. Write for literature and prices.
FEDERAL CHEMICAL CO.
Ground Rock Dept. COLUMBIA, TENN.



We Ship on Approval
Prepay Freight, and allow
30 Days Free Trial
IT ONLY COSTS ONE CENT to learn our unheard of prices and marvelous guarantee on "Brictson" Detachable Treads.
Let us show you how to save from 300% to 400% on your tire expenses. Write to-day for full particulars.
The Brictson Mfg. Co.
3882 Main St.
BROOKINGS, S. D.

cabbage have been grown as side crops, and we hope Mr. Beckwith will let us say that his returns from this farm last year were more than twice what the place cost him three years ago. Cabbage, however, was a money-making crop last year, and he had a heavy yield. Instead of selling at harvest time, the crop was stored, and later in the season the price rose to $45 to $60 per ton.

The elder Beckwith, by the way, has one of the best houses for storing cabbage to be found anywhere. It is so arranged that the air in the storage house can be changed every half hour, and cabbage is kept as sound and as crisp as can be. A railway track runs through the center of the building, and several cars can be loaded at a time. Some growers store their own cabbage, others sell at harvest time to those who take chances on the market. Storage charges are $2 a ton for the season.

Future of the Fruit Industry.

The future of the fruit industry of Western New York looks very bright. Certainly the growers are most hopeful. They say they never have a fear of frost injury near the lake, and they are confident of being able to overcome their pests. They are not content with present standards, and many of them are beginning to pack better varieties of apples in boxes. They are planting young trees extensively, and evidently do not fear overproduction. They are wide-awake, intelligent men, not so set in their ways that they cannot adapt themselves to changing conditions, and young men are not hesitating to engage in fruit growing.

How does that section compare with the West? Let's not try to compare the sections. They are different. The Western man will tell you how many bushels of apples he harvested from the orchard and what the fruit brought him. He's proud of that record. The New Yorker is more modest, or at any rate his pride runs in a different channel. To illustrate:

On our trip we visited one orchard with a history.

"My grandfather cut down the native trees and planted an orchard in the clearing thus made," said Mr. D. S. Beckwith. "The oldest trees are likely more than one hundred years old. They have borne tons and tons of fruit and are still producing enormous crops, but they are so high they cannot be sprayed effectively. My mother was born on this farm, I was born there, and my son was born there. There are two trees planted by my father and my mother when they were first married; those hard maples have weathered all storms and seem good for many years yet. Just before my mother died, at age of ninety-three, she called me to her and asked that I keep the farm always in the family. You can well understand why a farm like this isn't for sale at any price."

And there are doubtless hundreds of other farms with much the same history.

We greatly enjoyed our visit in the vicinity of Albion. We met a fine lot of people—most of them Fruit-Grower subscribers, thank you—and when we left we were decided upon two things in our own mind:

First, that we are going back some time during apple harvest; and, second, that we of the West are new, very new—so new, in fact, that the paint is hardly dry. J. M. I.

Increasing Consumption of Apples.

Mr. H. S. Jefferies, a Kansas reader of The Fruit-Grower, suggests that one way to increase the consumption of apples is for every package of apples put up to contain a selected list of recipes for the preparation of apples as food; these recipes, he says, should include every way of preparing apples for the table. He further suggests that The Fruit-Grower call on its readers for their best recipes for use of apples, and that a booklet be compiled which shall publish these recipes, these booklets to be sold at cost to apple packers everywhere, to be used in the way suggested.

There is food for thought in this suggestion. Few persons know how to prepare apples in more than four or five ways, and yet there are enough good ways to prepare apples for the table to permit the housewife to serve the king of fruits at every meal for a long time without using the same recipe twice.

The Fruit-Grower is willing to undertake the compilation of such a booklet, if there is a demand for it, although it may be too late to get it out for this season. What say our readers? Do they want and will they use such a booklet in their packages of apples? Mr. Jefferies says he will use a thousand copies if the cost is not too great, and if any considerable number are printed at one time the cost will not be heavy. Let us hear from those interested.

Increasing Consumption of Peaches.

The Texas Fruit-Growers' Association has been working hard to increase consumption of peaches, and especially of Texas peaches. A regular press bureau has been maintained, which has furnished to newspapers in cities where Texas peaches were to be shipped, recipes for using peaches, and articles urging that housewives can the fruit for winter use. Included in the news notes are a lot of small paragraphs like the following:

"Peach juice slightly diluted with water, with the addition of lemon juice, is a wholesome and refreshing drink."

"The half of a big Elberta peach, with a spoonful of whipped or straight cream over it, a dot of home-made jelly in the center, is a most inviting dessert for winter or summer."

"Elberta Salad—Select the finest Elberta peaches. Pare, cut in half and stone. Lay the peaches in lettuce hearts and fill the center of each half with chopped nuts and fruit mixed with mayonnaise. Put a teaspoonful of whipped cream on top of each half."

The publication of these paragraphs in the daily papers has increased interest in peaches as food, and results have no doubt been gratifying. The Association also placed in each basket of fruit a little booklet giving recipes for preparing peaches for the table, and this, too, is good advertising.

Still another plan to increases demand for peaches has been to enlist the support of one grocer in each of a number of small towns. This man books orders from housewives for certain quantities of peaches, and the fruit is delivered when a car is received. In other words, the peaches are sold before the car arrives, and there is no possibility of the local dealer having a quantity of the fruit left on his hands.

It will be interesting to know the results of the season's work by the association.

A WINNING START

A Perfectly Digested Breakfast Makes Nerve Force for the Day.

Everything goes wrong if the breakfast lies in your stomach like a mud pie. What you eat does harm if you can't digest it—it turns to poison.

A bright lady teacher found this to be true, even of an ordinary light breakfast of eggs and toast. She says:

"Two years ago I contracted a very annoying form of indigestion. My stomach was in such condition that a simple breakfast of fruit, toast and egg gave me great distress.

"I was slow to believe that trouble could come from such a simple diet, but finally had to give it up, and found a great change upon a cup of hot Postum and Grape-Nuts with cream, for my morning meal. For more than a year I have held to this course and have not suffered, except when injudiciously varying my diet.

"I have been a teacher for several years and find that my easily digested breakfast means a saving of nervous force for the entire day. My gain of ten pounds in weight also causes me to want to testify to the value of Grape-Nuts.

"Grape-Nuts holds first rank at our table."

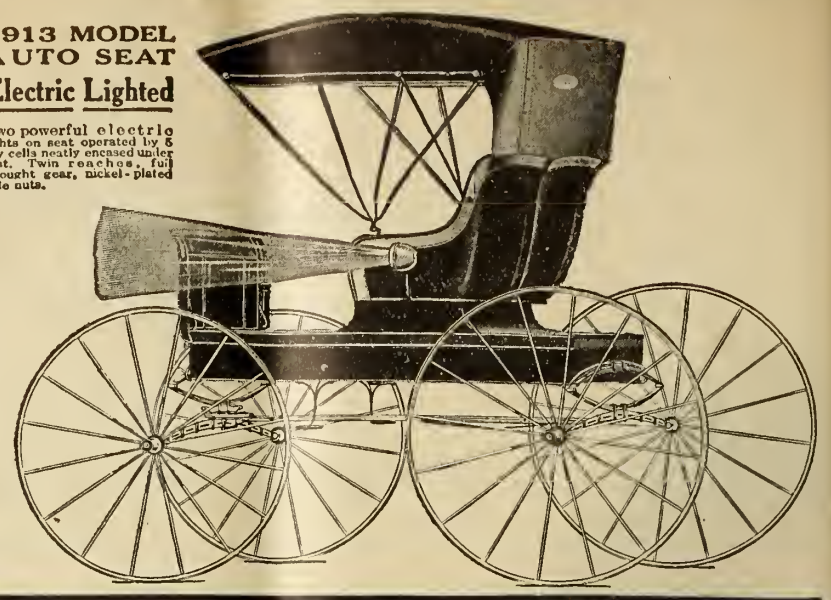
Name given by Postum Co., Battle Creek, Mich.

"There's a reason." Read the little book, 'The Road to Wellville,' in pkgs.

Ever read the above letter? A new one appears from time to time. They are genuine, true and full of human interest.

1913 MODEL AUTO SEAT Electric Lighted

Two powerful electric lights on seat operated by 8 dry cells neatly encased under seat. Twin reaches, full wrought gear, nickel-plated axle nuts.



How to Judge a Buggy

There are some amazing facts about the buggy situation that *you* have *a right to know.* We can *afford* to tell them—and we're going to do it *right now.* During the past few years the market has been flooded with inferior buggies at prices which *seem* low—but which are really *outrageously exorbitant.* You want *quality*—of course. And there *is* a way of getting the absolute *maximum* of quality *and at the lowest price you can afford to pay.*

The Real Truth About the "Cut-Price" Buggy

The manufacturer of the "cut-price" buggy doesn't worry much about *quality.* Instead he is content to put out a line that will *look* like the well known product of some *high grade* manufacturer. He copies the design and the lines just as closely as he can, relying on the fact that the average buyer will be deceived by the appearance into thinking that he is getting quality too.

Of course, he knows that he can never sell the same man a second time, *so he deliberately cuts the quality all he can so as to make sure of an enormous profit.*

The "Skimped" Way

A certain cut-price concern is already offering a buggy similar in appearance to the magnificent STAVER model shown above, at an *apparently* low price. We bought one of these buggies and analyzed it;—here are just a *few* of the ways in which it had been *skimped*—there are nearly a hundred more that we haven't room for.

Top

Fabric top—unlined—imitation rubber front and back valance. Roof stitched to quarter without welt, actual saving in factory cost..... $5.79

Seat

Gum-wood panels, kiln dried or green, no inside finish. Six coats of exterior finish, the last being a *glaze* varnish containing 30% rosin. This process gives a deceiving high gloss but has no "give" whatever. The slightest strain to the seat will cause it to check, flake and peel. Actual saving in factory cost..... $3.95

Body

Body of ordinary gum wood with inferior Ash, or in many cases Elm sills and posts.

Painted by the "glaze" system as explained in description of seat. Actual saving in factory cost..... $3.15

Dash

Frame of malleable iron, bolted, not coated with lead and oil or anything else. Covered with a cheap enamel split leather. Frame boot of cheap Gum Wood. Actual saving in factory cost..... $1.25

Gear

Malleable hangers; water-tempered springs; malleable fifth wheels; Elm reaches; maple axle beds; cull "D" grade wheels; malleable stay braces, wheel braces and fifth wheel forks. Actual saving in factory cost..... $9.42

Shaft

Made of Elm, with 20 in. point leathers; malleable reinforcements, no circle cross brace; flat leather cull straps; "glaze" painting. Actual saving in factory cost..... $2.40

The total saving on factory cost on these few items alone is $28.61; *the value of the buggy is lessened fully 75%.*

The STAVER Way

For 33 years we have been building the very highest grade of buggies and carriages made in America. That 33 year old reputation is worth millions of dollars to us. We must maintain it on a quality basis. The man who buys a Staver knows that he is getting a buggy that is *made on honor all the way through.*

Top

Highest grade leather throughout, including front and back valances. Lined above bows with 8 oz. all wool lining. Reinforced curtains. All leather and fabric *cut by hand.*

STAVER

Seat

The Staver seat is made of air-dried *Yellow Poplar:* 1 piece back and 1 piece side panels. The 6 lugs that hold the top extend down on inside of the seat 6 in. and each is fastened with two 1 in. screws and one 1½ in. bolt. 2 coats of pure white-lead and linseed oil are used *on the inside* before the upholstering is put in. The outside receives *fourteen coats* and 3 *hand-rubbings.*

Body

The Staver body is made of *air-dried, Yellow Poplar,* ⅝ in. thick through the center, tapering to ⅜ in. at either edge. Sills and posts are constructed from the best White Ash and painted with 14 coats besides 3 water rubs, giving the finest and most durable finish it is possible to produce.

Dash

Wrought iron frame, coated with a heavy coat of lead and oil before being covered with grain buffed leather. The boot has a wrought iron frame welded out under the hammer and absolutely will not break or get out of shape.

Gear

The Staver gear has hand-forged Bailey Hangers; oil-tempered, graded spring (the easiest riding and most durable in the world); full wrought steel fifth wheel, black Hickory reaches; black Hickory axle beds, bent and turned from 2x2 in. stock; straight grain second growth Hickory wheels, spokes and felloes split before shaping. Wrought iron stay braces, heel plates and fifth wheel forks.

Shaft

Black Hickory, 21 in. bend; 36 in. point leathers; round jockey straps; half beveled steel reinforcements; circle cross bar brace; painted same as body.

Write for Free Catalog

This is only the start of the story. We cannot urge you too strongly to get *all* the facts—to post yourself thoroughly on the real truth about buggies before you even think of buying. A postal will bring you the Staver Buggy Book and valuable, detailed information. Write today.

Staver Carriage Co.

Department 453C

76th and Wallace Streets - Chicago, Ill.

102

Please make it a point to always mention The Fruit-Grower when you write in response to an advertisement.

Advertisers like to know what paper is giving the best service for money expended. You can aid them materially if when writing, you mention The Fruit-Grower

VIRGINIA BOX PACKING

An Eastern Man's Experience Packing Apples For the Eastern Trade—Cost of Production

Having had four years' experience in box packing with varying degrees of success, the writer wishes to give a few notes which might be of interest to the beginner. At the time I began experimenting with the box I thought I saw the future for it, though the idea was almost universally disapproved by apple growers here in Virginia. Now it requires no argument to show that the box is the coming package for all fancy apples in the very near future.

In 1908 I was handling a large orchard which was interplanted to peach. The peaches bore a heavy crop, and very little attention was paid to the apples. There were about one hundred barrels of Winesap which were fairly good, with the exception of some codling moth. Up to this time my experience had been mostly with peaches. I therefore took counsel with my neighboring orchardists as to the best methods of handling the few Winesaps. They advised me to pack them orchard run from two and a quarter up, according to the general custom in those days. I protested that they should be packed in at least three grades (in barrels) and that the fancy should go in boxes. I was told that this would never do, because of the well-worn theory that if the fancy were taken out it would ruin the sale of the remainder. This I knew to be incorrect. I proceeded to pack the barrels in three grades, saving the fancy for boxes.

The barrels were consigned and sold in the Richmond market for 25 cents advance over my neighbor competitor, who packed orchard run, fancy included. The boxes were consigned to the same market, but were very slow sale and brought but little more than the barrels of lower grade.

In 1909 we put up about two thousand boxes of Albemarle Pippins and Winesaps. A box made from southern pine was used and the apples wrapped and put up in tier packs. In the absence of experienced apple packers we used orange packers from Florida. They soon got onto the grading and did excellent work, but from lack of experience we did not pack quite tight enough to prevent too great shrinkage in storage. The fruit was partly exported, and partly stored in New York, and in Columbus.

The exported box stuff came in competition with the already well-established barrel trade and brought but little more than barrels of the same grade. The Columbus box stuff sold for an advance on barrels in open market.

Six hundred boxes of Albemarle Pippins were stored with a commission house in New York with the understanding that I was to have the privilege to do my own selling. The same firm handled a car of the same grade of fruit packed in barrels for $4.00 f. o. b. New York. At the same time they protested against my box experiment, saying that I could not sell Virginia box apples in their market to advantage. But I was otherwise determined, so after canvassing the market personally I sold the car of 600 boxes for the equivalent of $5.04, as compared to the $4.00 for the same fruit in barrels. The market was decidedly off on box stuff at that time, on account of so much damaged box stuff from the Western market, the trade showing a decided preference for barrels.

The orchard situated near Covesville, Va., contains both Pippin and Winesap trees about twenty years of age. As the Pippin crop was somewhat irregular my figures are confined entirely to the crop of the Winesaps, and with the exception of the relative cost of thinning and picking the fruit, my figures are confined more especially to the gathering and packing, or the cost from the time the picking was commenced till the packages were ready to leave the packing house.

The box used was the Hood River standard (10½x11½x18), made from southern hardwood (sweet gum), which makes a very satisfactory package, is quite attractive and very strong. After several trials we decided on the following thicknesses for this wood: Ends, ¾ inch; sides, ⅝ inch; tops and bottoms, ⅜ inch; strips cleated to each end of both top and bottom. A four-penny fine, cement-coated nail is used, instead of the five penny used on soft wood boxes. For the eleven-inch box the width of the tops and bottoms should be not wider than ten inches, and nine and one-half would be better. Also they may be made in two pieces with a half-inch space in the center; this makes the lid more elastic and adds to the attractiveness of the package.

The following is the exact figures on the handling of 1,349 bushels of Winesaps from the time they were ready to leave the tree till they were ready to leave the packing house to go into the car. (The term bushel is used because the entire crop is included, those packed in barrels, culls and windfalls, as well as those packed in boxes.) I find that the average orchardist tells you how many No. 1 apples he has as compared to his No. 2's, but takes no account of the culls and windfalls, whether the latter comprise 5 or 50 per cent of the crop. But here are my figures, and while they are not as good as I hope to do in the future, they are the best I have done in the past:

First, I will give the relative cost of thinning and picking. The trees were not overly full, however, and the thinning cost was somewhat lighter than if the trees had been full. The thinning was done by two students from our state college, for which they were paid at the rate of 25 cents per hour for their work. The total cost being $25.00, as against $120.03, the total cost of picking. The 1,349 bushels were taken from the trees and through the packing house at a total cost of $520.84, or 38 cents per bushel including the package.

The crop packed out as follows, according to the Hood River standard for grading in the year 1911:

RELATIVE AMOUNTS IN EACH GRADE.

	Pct.
Extra fancy in boxes	28.93
Fancy in boxes	27.24
In barrels, three grades	36.18
Culls and windfalls	7.66

TOTAL COST.

Gathering 1,369 bushels	$120.03
Grading and packing 749 boxes	185.97
Grading and packing 165 barrels	21.32
Boxes and wrappers for 749 boxes	122.48
Barrels and liners for 165 in bbls.	70.68
Carrying the 749 boxes through packing house, including everything	375.67
Carrying the 165 barrels through	135.43
Handling culls	9.74
From tree to car, per box	.50
From tree to car, per barrel	.82
Total cost of handling the 1,349 bushels as above stated	$520.84
Handling in boxes, per bushel	.50
Handling in barrels, per bushel	.27
Handling in boxes over and above the same handled in barrels	.13

The relative costs per bushel, as per box and per barrel, are explained in the fact that there is about 20 per cent gain in using the box, against the barrel. That is, you will save about twenty barrels in every hundred by putting them in boxes, instead of barrels. The cubic contents of the standard Hood River box is 1,980 cubic inches; this, multiplied by three, and subtracted from 7,056 (the cubic contents of the Sulzer barrel), we have 1,116 cubic inches, or nearly one-sixth of a barrel. Of course we have to allow for the three-quarter inch bulge in the box, but this is counteracted by the space taken up by the corners of the box.

The price of 50 cents per box includes the cost of expert box packers and box makers, which was unusually heavy, owing to the small amount of fruit packed, and to the great distance the packers had to come. We had one expert trained in Oregon and one from Florida at an average cost, including traveling expenses, of $7 per day. In addition we had four student apprentices at an average cost of $3 per day.

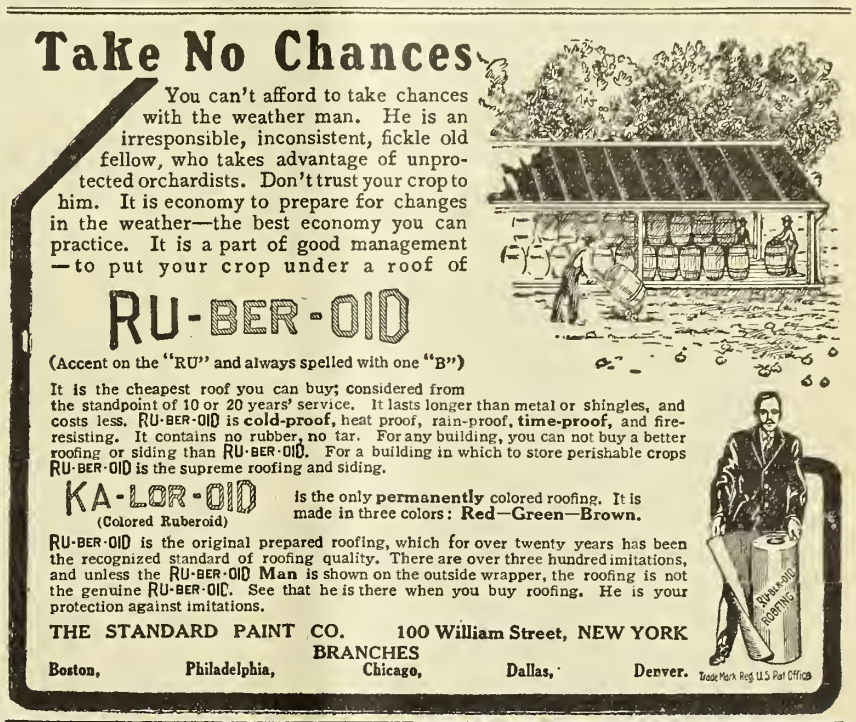
These are the most accurate and most representative figures we have been able thus far to get on the relative cost of box and barrel packing here in this section, thus it is impossible to say just how much the cost should be expected to vary according to conditions. However, from my experience in peach handling, it would appear that to lower the cost for example to 45 cents per box, would require exceptionally good conditions and splendid manipulation. On a large orchard situated on smooth land and containing only one or two varieties, the cost could be thus reduced.

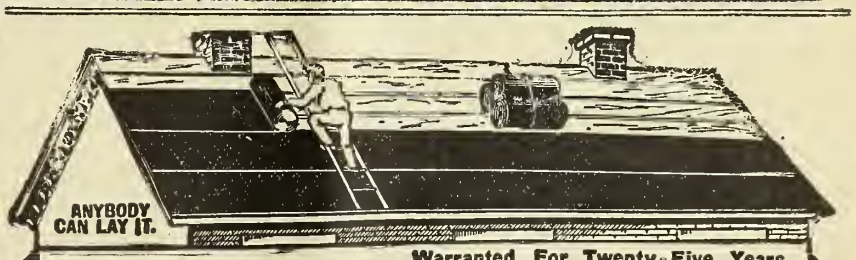
Virginia. E. F. COLE.

Arsenite of Zinc as an Insecticide.

Prof. Geo. P. Weldon of the Colorado Experiment Station believes that fruit-growers can well afford to test arsenite of zinc as a substitute for arsenite of lead. He says that while some injury has been reported from burning of foliage, he does not believe that the new insecticide should be condemned on this score, for arsenate of lead also caused some injury to leaves last year.

Arsenite of zinc costs less than arsenite of lead and seems to be somewhat more effective than arsenite of lead. If it should develop that no injury follows its use in ordinary seasons, then arsenite of zinc will have come to stay. It is being thoroughly tested in Colorado this year, and it is hoped that some conclusive results will be obtained. For potato beetles arsenite of zinc is certainly effective.



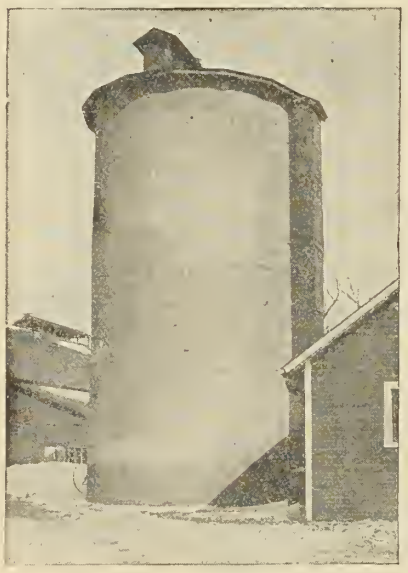


SILOS ON FRUIT FARMS

The Kind of Silo to Build—Feeding Value of Silage—A Good Thing the Year Round

The average acre value of the fruit farms of the United States is more than three times the value of land used for other kinds of farming. The owners of this valuable land can't afford to keep much of this land in pasture. Silos are essential where stock farming is carried on in connection with fruit farming.

A silo will be a profitable investment for you, if you keep ten head or more stock on your farm. What return will you get from the money invested in a silo? Well, on an average, corn silage can be put into the silo for about $2 a ton, including all of the cost of growing the corn. If you feed this silage in an economical way to your farm animals, you should get a return of at least $4.50 a ton. Many higher returns have been reported, for example, the animal husbandry department of the Kansas State Agricultural College made a profit of $5.65 a ton one winter on some silage fed to fattening cattle. If you can produce a feed for $2 a ton and feed it to animals so that it will produce $4.50 a ton, a silo is a mighty good investment.



A SOLID-WALL CEMENT SILO.

And there is another thing about a silo that is mighty important: Corn is cut for the silo when is in the "dough stage," after nearly all of the kernels are dented, and that is about the time the crop often is badly injured by drouth. The use of a silo often means the saving of the full feeding value of the corn, while many times it would be cut to a half crop by dry weather.

And here is another important thing about the value of a silo: Not more than 60 per cent of the feeding value of the corn crop is in the ear, and if you harvest only the ears, you have a 40 per cent waste in the handling of the crop. If you merely pasture the cornfields, the crop has become so weathered by the time the corn is shucked that it does not have a high value. If you don't believe that, just find out the average price of cornstalks in your community, and compare this price with the value of the grain. You will find it makes a mighty small per cent.

Kind of Silo to Build.

All makes of silos have their advocates, and all of the standard types of silos will keep silage about equally well, if they are well constructed. There is nothing to the idea that some makes of silos will keep the feed better than others, and the thing you have to consider in building a silo is the cost probable life and maintenance cost. Usually, a well constructed solid-wall or metal-lath cement silo will be the cheapest in the long run. If they are well built, they will last a lifetime. Stave silos keep silage well, when they are well constructed, but their life usually is not nearly so great as the cement types.

The thin-wall, metal-lath cement silos must be built by men who are experienced in the work. The solid-wall type of silo may be put up by men who are less experienced; the farmers and their hired men can do the work if they will carefully follow the plans and specifications for the building of this type. The agricultural colleges of Kansas, Missouri, Iowa, Wisconsin, Illinois, Pennsylvania and most other states will furnish full plans and specifications for the construction of cement silos and usually you can get them to send a man to help you put up the silo, if you desire. If you wish to put up a silo, no matter what type or kind you select, you had better write to your agricultural college and get expert advice.

If you desire to erect a stave silo, you usually can get the company you purchase the silo of to put it up on the farm complete, so the labor of erecting the structure need not be done by the farmers. In Southeastern Kansas and in other places where bricks are cheap, many farmers are putting up brick silos, and are finishing them inside with cement. A good silo can be made from brick, and in many places where the bricks are cheap this is the type to construct. Near Buffalo, Kans., there is a brick plant that manufactures paving bricks, and many of the farmers in that section are putting up silos this summer that are made of paving bricks.

If you desire to build a solid wall silo, you will have to get the forms for the wall, and it will make the cost of this phase of the construction much cheaper if you can get several of your neighbors to build silos also, so the cost of the forms may be divided among all. If you can't get some of your neighbors interested in the matter, usually you can rent the forms from a contractor. The cost of a silo is not great. Ordinarily the cost of the solid-wall type of silo, 16 by 30 feet, will be not far from $9 for every foot of height, but of course the cost will vary with the cost of the materials and labor, and the distance of the farm from town. Such a silo will cost about $300, perhaps a very little more, if constructed by a contractor, and if the farmer uses his own labor and cuts out the contractor's profit, he usually can build the silo much cheaper. A silo of this type will hold about 120 tons of silage. Such a silo is proof against fire and winds, and it can't be moved by anything except dynamite.

If you wish to build a silo remember these facts: The walls of a silo must be absolutely airtight, and they should be at least twice as high as the diameter, and the inner wall must be smooth. The top of the silage will spoil, and from an air-tight cap over the rest of the feed. If the stalks are very dry when you harvest them, you had better add water as you put them in the silo. Cement silos always must have proper reinforcement, while the stave silos should be anchored with guy wires. Never use paint on the inside of a stave silo, but instead use linseed oil or creosote. A roof is not necessary for the keeping qualities of the silage, but one always should be constructed. A good time to put on the roof is when the silo is filled the first time, as then the men have something to stand on, and they don't have to construct a platform.

It does not take long to fill a silo, and it is best for several farmers to go together in buying a silage cutter in order to reduce the cost. The cutters will cost from about $90 to $300, and sometimes more, depending on the size. Use any available power to run the cutter.

Feeding Value of Silage.

As to the feeding value of silage: For many years, about the only extensive use that was made of silage was feeding it to dairy cattle. Now its use is spreading until it is profitably used for almost every kind of farm animals. Take, for example, the use of silage for fattening cattle, some of the highest priced fat steers sold on the Kansas City market the last year had been fed a heavy ration of silage during the fattening period. In addition to the food in the silage, the green feed tends to keep the animals in fine condition, and usually a higher quality of beef can be produced by the use of silage than without it.

Silage is mighty valuable for chickens, to encourage winter egg production. Many fruit farms carry a large number of hens in connection with their fruit work, and in winter egg production is where much of the profit from chickens comes in. If the hens are furnished with silage every day in winter, it invariably will increase the egg production. So important is silage for chickens that some men who have no silo prepare small quantities of silage in barrels, exclusively for the use of poultry.

Because of its bulky nature, silage is not adapted as a feed for fattening hogs, but it is mighty valuable as a feed for brood sows. Be very careful in feeding moldy silage to cattle, and never feed it to horses under any circumstances.

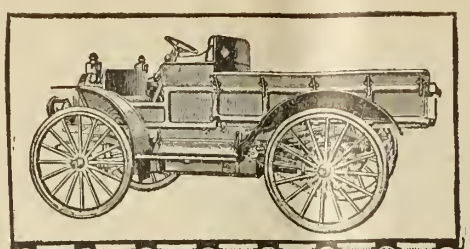
There has been a great increase in the number of silos in the Middle West in the last three years. Several hundred have been built in Kansas alone this summer. Because of the high value of fruit farms, and the necessity for the production of the greatest amount of feed from every acre, silos are of supreme importance to fruit-growers who keep some stock, and most of them do.

Sulzer Bill Passes House.

The Sulzer bill establishing a standard size package and a standard pack for apples in barrels has passed the house and is now before the senate. This is a bill similar to the Lafean bill, which was introduced in the last Congress. It is believed this bill will also pass the senate. If it does, it will go into effect in July, 1913, so that apple growers and packers will have ample time to adjust themselves to the new conditions.

Apple Shippers' Association to Meet.

The annual meeting of the International Apple Shippers' Association will be held at the Sherman Hotel, Chicago, August 7, 8 and 9. Fruit growers are invited to attend, and especially representatives of fruit shipping associations. Full particulars of the convention can be had from the secretary, R. G. Phillips, Rochester, N. Y.



A Good-Looking, Dependable Business Wagon

THERE'S a look of sturdy reliability and independence about an International auto wagon that makes friends for it wherever it goes. The car is just as reliable and dependable as its looks indicate. In endurance contests it equals cars costing three times as much. In economy it stands at the head of its class. In dependability and all round utility, it beats them all.

Every day you run an International auto wagon you will find it more useful to you. With it you can make the trips you used to neglect, because you did not want to take the horses from their work. Perishable products are handled speedily, or taken to the most profitable market. Best of all, the car saves money as well as makes it.

International Auto Wagons

help make farm life pleasant. It is a pleasure to run the car and it is so reliable, so ready to go at any time or for any purpose that it soon becomes indispensable. It can be used in all seasons when the road is passable to horses. The wheels are high enough to give ample road clearance. Solid tires give good traction and eliminate many tire troubles. The engine is simple and powerful. Fuel and oil to run an International auto wagon cost less than the feed for a horse, while the wagon will do from two to four times as much work.

It will pay you in many ways to know all about the International auto wagon. A letter brings full particulars with many interesting facts and figures.

International Harvester Company of America
(Incorporated)
135 Harvester Building Chicago U S A

I H C Service Bureau
The purpose of this Bureau is to furnish, free of charge to all, the best information obtainable on better farming. If you have any worthy questions concerning soils, crops, land drainage, irrigation, fertilizer, etc., make your inquires specific and send them to I H C Service Bureau, Harvester Building, Chicago, U S A

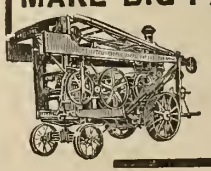
Increase Value of Your Orchard
Lying above irrigation ditches. Pump a big supply of water to any height with Rife Rams without expense or bother.
Cost little to install—nothing to operate.

RIFE RAMS
Pump water automatically day and night
Raise water 30 feet for every foot of fall. Pump automatically—winter and summer. Fully guaranteed.
If there is a stream, pond or spring within a mile, write for plans, book and trial offer. Free.
RIFE ENGINE CO., 2521 Trinity Building, New York

WHITMAN'S HAY PRESS
40 Years Standard of the World

New Model Steel Beauty ALL STEEL
Let us prove that our New Model is the Strongest, Most Durable, Most Economical and Simplest Hay Press in the World—does the best work—has greatest capacity—saves time, labor and trouble—contains exclusive feature found in no other press—with or without self-feed, pull back and hopper condenser—fully guaranteed—we make largest line of Bailers in the world. Write today for big *free* catalog.
WHITMAN AGRICULTURAL CO., 6995 S. Broadway, St. Louis

MAKE BIG PAY DRILLING WATER WELLS



Our Free Drillers' Book with catalog of Keystone Drills, tells how. Many sizes; traction and portable. Easy terms. These machines make good anywhere.
Keystone Well Works
Beaver Falls, Pa.

INCREASE WHEAT YIELD

Early Plowing and Frequent Disking, to Kill the Weeds, and Good, Clean Seed Does It

What was your yield of wheat this season? Couldn't you have greatly increased this yield by giving a little more attention to preparing your seedbed and to the selection of your seed?

You can't grow a profitable crop of wheat on poor soil and it won't pay you to plant the crop unless the ground is reasonably fertile After you have decided to grow wheat on a field, remember the seedbed must be well prepared if the crop is to produce profitable returns.

The seedbed for wheat should be plowed just as soon as possible after the crop that is grown has been harvested. Most of the ground should have been plowed before now, but there still is time to prepare the soil, if you will do your part. Plowing is still the method most used in breaking the soil, and under most conditions it is the best way, although listing is all right under some conditions in the West. Ground for wheat should be plowed about five inches deep, on an average, if it is plowed in July, but the depth of plowing should be decreased as the season advances. Probably between three and four inches is the best for plowing if the land is not plowed until September. This early, deep plowing is mighty important, for most of the ground in the Middle Western states is not plowed deep enough.

After the soil is plowed, it should be kept cultivated during the summer in order to kill the weeds, conserve moisture, and encourage the formation of available plant food. The ideal seedbed for wheat consists of firm, well compacted soil, and to get this firm seedbed from a soil that has been plowed deeply requires time and cultivation. And remember this about the seedbed—if the seedbed is not fairly firm, if the soil has not been well prepared, there will not be good capillary connection of the soil with the subsoil, and if this capillary attraction is not restored, the subsoil water cannot be used by the growing plant. And if the young wheat plants cannot use the soil moisture promptly, they will not make good growth before the winter sets in. If the wheat does not make a good growth in the fall the young plants will be injured by the freezing of the ground, for the root system will not have had time enough to get well established.

Disk the soil every two or three weeks after it is plowed until the seed is sown if there is a growth of weeds and a firming of the soil by the falling rains so that it needs disking that often. Of course if there is no rains, the soil need not be disked so often. But keep the ground stirred so the surface is kept loose, and evaporation of the soil water checked.

Harrow the land well before the seed is planted. And when you plant the seed have this condition in the soil: Have the soil loose about as deep as the seed is planted, and below the seed the soil should be firm and have a good capillary attraction with the subsoil. The firm soil below supplies moisture for germination and growth, while the mellow soil above the seed allows a good circulation of soil air. It also aids in warming the soil, as it absorbs the heat from the sun during the day, and acts as a blanket over the soil to conserve this heat at night.

Don't plant wheat too early, because of danger from the Hessian fly and other insects. In Kansas, for example, wheat should not be planted in the northern counties until about October 1, and this time should be extended in the southern part of the state until about October 10th. Of course, wheat must be planted so that it will make a good growth before winter, but if it is planted much before these dates there is great danger that the crop will be injured by insects. But get the crop in promptly after you begin sowing, for very late planting is even worse than too early planting.

Most of the wheat in the West is not pure, or even anywhere near it. If all farmers planted wheat of pure, high yielding strains that had been passed through a fanning mill to remove all of the undesirable kernels, the nation's average yield easily could be raised several bushels an acre. The use of good seed is a mighty easy and profitable way to raise the yield of any crop.

The milling department of the Kansas State Agricultural College sends its agents into the fields of the State, and they personally inspect about 150 fields of wheat every year after the wheat is headed and before it is cut. These agents make a report on all of these fields, and the reports are published in a list prepared by the department. Both soft and hard varieties of wheat are included in this list. It gives the name and address of the growers of the wheat, the yield, purity, disease and insect injury, and the price. The report is made in every case by a disinterested person. This list may be obtained from the Milling Department, Kansas State Agricultural College, Manhattan, Kans., free of charge. Most of the agricultural colleges in other states keep in touch with the growers of good seed and are glad to furnish the names of all such growers.

In many cases, no matter where you get your wheat, be sure you get good seed. And don't buy seed wheat that has been grown in a country where the weather and soil conditions are different from the conditions in your country.

The Middle West is divided into hard and soft wheat belts by the moisture and soil conditions, and if one is in a hard wheat belt he should grow hard wheat, and if he is in a soft wheat belt he should grow soft wheat. Take, for example, the region around Hutchinson, Kans., which is a very good hard wheat country, hard wheat will do better there than soft wheat, and hard wheat should always be planted. But farther east, in Eastern Kansas and Missouri, where there is more moisture, the soil is better adapted to the growing of soft wheat, and soft wheat should always be sown.

About 20 per cent of the wheat seed that is planted in the West every year consists of cracked or immature kernels that will not produce strong plants. These poor kernels should be removed by the use of the fanning mill. Much of the wheat is planted just as it comes from the threshing machine, and the yield the next year is never what is might have been if the seed had consisted of strong kernels. You can make mighty good wages using a fanning mill.

The amount of wheat to sow depends mostly on the soil and moisture conditions. In some parts of Western Kansas three pecks of seed may be enough, while further east double that amount should be used on some soils. Study your yields from different thicknesses of planting, and find what is the best thickness for your conditions.

And finally, a word about pasturing wheat. Be very careful about pasturing wheat. The yield of much of the wheat in the western country is reduced every year by heavy pasturing. There is one condition, however, under which there is a benefit to the wheat from pasturing, and that is where the wheat ground is very rich and there is danger that the wheat will lodge. In that case, the wheat should be pastured heavily and late into the spring, in order to reduce the yield of straw. Late pasturing for such wheat is very important, for after wheat has lodged, it won't produce a good yield. But under average conditions, where the soil is not excessively rich, you should be mighty careful about pasturing the crop. Don't pasture it at all unless it has made a good growth.

IN THE WHEAT FIELD IN AUGUST.

The soil has been well disked, plant food is being made available, moisture is being conserved, and the seedbed will be in splendid condition in September.

New Association in North Carolina.

The Haywood Fruit Exchange, headquarters at Waynesville, N. C., has been formed, with Charles W. Mason as manager, and will market the apples of its members this season. A high standard will be maintained in packing and the association will stand back of every package of fruit sold.

This organization has in contemplation the packing of all apples grown by its members, and desires to know whether it is practicable to maintain central packing houses for this work. Some of the members are somewhat removed from the others, and it is a question how far members can afford to haul their apples before they are packed. What has been the experience of other associations along this line?

Ask your neighbors to subscribe for The Fruit-Grower. They'll thank you.

Here's
The Road to Comfort

A vanished thirst—a cool body and a refreshed one; the sure way—the *only* way is via a glass or bottle of

Coca-Cola

Ideally delicious—pure as purity—crisp and sparkling as frost.

Free Our new booklet, telling of Coca-Cola vindication at Chattanooga, for the asking.

Demand the Genuine as made by
THE COCA-COLA CO.
ATLANTA, GA.
1-J

Whenever you see an Arrow think of Coca-Cola.

FOREMOST FARM PAPERS

1,392,000 Circulation at $6.55 a Line

	Guaranteed Circulation	Line Rate
The Fruit-Grower .... St. Joseph, Mo.	100,000	$ .50
Successful Farming .... Des Moines, Ia.	600,000	3.00
Farm, Stock & Home ... Minneapolis, Minn.	105,000	.40
Southern Ruralist .... Atlanta, Ga.	150,000	.75
Kimball's Dairy Farmer . Waterloo, Ia.	100,000	.50
The Gleaner ..... Detroit, Mich.	125,000	.50
Green's Fruit-Grower... Rochester, N. Y.	125,000	.50
Inland Farmer ..... Louisville, Ky.	57,000	.25
Western Farmer ..... Spokane, Wash.	30,000	.15

CHICAGO
J. G. BILLINGSLEA
Western Representative
815 First National Bank Building, Chicago

NEW YORK
A. H. BILLINGSLEA
Eastern Representative
1 Madison Avenue, New York

ST. LOUIS
A. D. McKINNEY
Third National Bank Building, St. Louis

MINNEAPOLIS
R. R. RING
Globe Building, Minneapolis

THE FRUIT-GROWER
ST. JOSEPH, MISSOURI

Title Registered in U. S. Patent Office. Bro. Jonathan—Trade-Mark—Registered
Copyright, 1912, by The Fruit-Grower, St. Joseph, Mo.

Address all communications and make remittances payable to "The Fruit-Grower,"
Eighth and Charles Sts., St. Joseph, Mo.

WM. G. CAMPBELL, General Manager JAMES M. IRVINE, Managing Editor
E. H. FAVOR, Associate Editor

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....J. C. BILLINGSLEA.....First Nat'l Bank Bldg.
New York Office..... A. H. BILLINGSLEA.....No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS.....821 New York Life Bldg.
St. Louis Office.....A. D. McKINNEY.....Third Nat'l Bank Bldg.
Minneapolis Office.....ROY R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents Agate Line. $7.00 per inch. Fourteen Lines to an Inch.
Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
No advertising in class generally termed "Objectionable" accepted under any conditions. Editions mailed on first day of month. Forms close on 20th of preceding month, i. e., January forms close December 20th, etc.

An Advertisement in The Fruit-Grower will place you in touch with One Hundred Thousand of the Most Prosperous Farmers in America

SUBSCRIPTION RATES

Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c, or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list.

Remit Coin, Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 AUGUST, 1912 Number 8

What Shall Be Done With Old Orchards.

The Fruit-Grower's articles concerning Eastern orchards call attention to the fact that a number of years ago the apple growers of New York and other Eastern states were confronted with the same problems which confront the orchardists of the Middle West today. They came to a point where they had to spray and otherwise care for their orchards or go out of the fruit-growing business It has taken longer for this condition to be reached in the Middle West, but it has come now and must be considered.

It is said that the area planted to orchards in Ohio decreased 100,000 acres in the ten years from 1900 to 1910. It is also a well-known fact that there are fewer apple trees, by far, in Missouri, Iowa and Kansas today than there were ten years ago. The New York grower cleaned up his orchard when he came to the last ditch, and his Western competitor, in many cases, has cut down his trees, and has planted corn or alfalfa and gone right along with his work.

Let us not shed tears over the apple trees which are cut down. If a man will grow good crops of corn, or alfalfa, or potatoes, and will not do the work necessary to grow good crops of apples, then let him change his plan of farming. If he will not care for his apple trees, and will not sell them to someone else who will care for them, then it is better for them to be cut down.

At the same time, we believe there is a suggestion worth while in our articles which tell how old trees in Eastern states are made to produce profitable crops. The right kind of men can do a good work in some of our Middle Western states right now in taking hold of neglected orchards. There are fine opportunities for the right man.

A Problem for City Men.

In a recent address by Dr. H. J. Waters, president of the Kansas Agricultural College, before a meeting of business men, he urged that commercial organizataions take up the study of country-life problems with a view of helping to improve conditions, and he said that in its last analysis the problem is one for city men, rather than for farmers.

He called attention to the constant movement from the farm to town, and said that unless this movement is checked the production of foodstuffs in this country will decrease to such an extent that we will be a food-importing country, instead of a country which has enough and to spare. As long as farmers' boys and girls move from country to town, increasing the number of consumers and decreasing the number of producers, we can expect a constant increase in the cost of living. It is likely that those who remain on the farm will make more money, because of decreased competition, and the farmers themselves cannot be expected to check the immigration to the city. But, on the other hand, city men are the ones vitally interested.

Doctor Waters said that commercial organizations of all kinds should be interested in every movement that will make country life more attractive and more remunerative. They should help to provide good roads, so that farmers can get about more readily, and so that consolidated schools can be secured. Business men should help to bring about the consolidation of country churches, so that better conditions will prevail.

The country school and the country church must wield a greater influence in country communities. The school must have a graded course, must teach the principles of agriculture, and at its head must be a man with vision, who lives on a farm connected with the school, and who works out many of the problems confronting the farmers of his community. The pastor of the country church must be a man in sympathy with country life; he must be a resident minister, who comes in touch with the lives of his parishioners, and not a man who drives out from the county seat once or twice a month to preach to persons whom he does not see in the meantime, and of whose personal lives he knows but little.

"We must recognize that every nation which has gone down has begun to decay first in its country life, and when once rural life is crumbling the nation is surely on the decline. We must recognize the great need of community work and get away from the idea that one needs to go to town to help in the general uplift. Let our retired farmers realize that they can do a greater work in the country than by moving to town, and we will have gone a long step forward."

The speaker urged that every county have one or more experts to advise with farmers and to help improve conditions, and said that when this is done, we will still be far behind Denmark, which has scores of such men at work. Because of this help Denmark supports 155 persons per square mile, as against only 20 persons per mile in the United States, and Denmark also exports $9 worth of produce for every acre of land under cultivation.

It may be added, in passing, that the St. Joseph (Mo.) Commerce Club, before which this address was delivered, will get back of a movement to have an agricultural expert employed by the county, under a Missouri state law which has not been generally understood. Pettis County, Mo., is the first county in the state to use public funds in this way, and Buchanan County will be the second.

Distribution Expense Too Great.

Fruit growers are not the only persons who believe there are too many middlemen taking toll from the products which pass through their hands. Read this statement, not from a man interested in selling apples or strawberries, but who sells an entirely different line of goods:

"There are too many merchants, not only retailers, but wholesalers; there is too much lost motion in selling and reselling, shipping and reshipping; and every time the goods are handled on goes an extra to the price, which does not add to the value of the article to the consumer. Now, it may be that all of these motions are necessary; I do not say they are not, but I do claim that there are too many persons making these motions, and they all seem to be wanting pay for their services, whether they are necessary or not."

What's the answer? How can some of the middlemen be eliminated? It must be solved in every line, and especially in the handling of food products.

Deceiving Ourselves.

The man who has any commodity to sell studies the ways of his competitors, and he also studies the products they sell in competition with his own. If he under values the competing article, and deludes himself into believing there is no real competition, he is likely to suffer rude awakening some day.

There's a suggestion here for our apple-growing friends. The man in the Far West claims that strictly fancy fruit cannot be grown east of the Rocky Mountains; the grower in the Middle West claims that no apples from any section can compare with Jonathan, Grimes and Winesap as they are grown in his section; the Eastern man may admit the Western fruit is of higher color, but claims that it has no flavor and cannot compete with the Eastern-grown apples.

All these sections grow good apples, and every section is increasing its production. Let's not try to deceive ourselves into believing that we stand alone, and that our apples have no competition. Let's recognize the situation as it exists, and then all work together to improve our standards of quality; let us grade and pack our apples better. If we don't, our Canadian friends, who also grow mighty good apples, are going to drive our fruit out of the foreign markets.

Protecting Its Readers.

The Fruit-Grower may not make as much noise about it as some other publications, but there isn't a paper in the country which protects the interests of its readers more carefully than we do. We are reminded of this by a letter from a Texas reader, who refers to an article published several years ago calling attention to the booming of the fig industry in the Gulf coast country by false claims of some land-boomers. Our article was prepared by a careful, experienced man, who knows the possibilities of the wonderful Gulf coast country, and who also knows the drawbacks to be encountered in growing figs. When the article was published The Fruit-Grower was denounced as a "knocker," it was threatened with libel suits—but the correctness of the position of our correspondent has been demonstrated by later developments.

During the height of the craze for dust spraying The Fruit-Grower tried to get at the facts in the case and when an article was published reporting serious results from using the dust spray on peach trees, we were actually sued for $50,000 libel. It cost us some money to get the facts together and to prepare for trial, but when the case finally came up it was thrown out of court; the money we spent in the case was well expended, we believe, because of the warning given our readers.

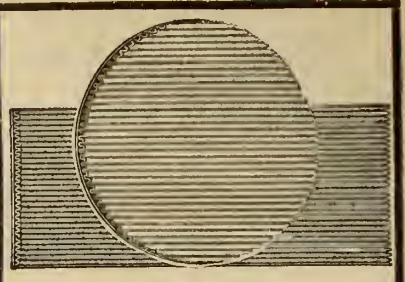
On still another occasion we found that a fraudulent individual had used our columns to defraud. The case was so clear that we laid the facts before the postal authorities, secured all the evidence, and finally brought about the conviction of the guilty person, and he served a term in the penitentiary. This same man has since been located, doing business under various names, but he has never been able to get well started since being released from prison.

Dozens of similar cases can be cited, and these are mentioned only to show that every precaution is taken to protect Fruit-Grower subscribers from being defrauded, and to call attention to the fact that in several instances we have been singularly successful.

Order Apple Packages Now.

This notice isn't intended to help the business of manufacturers of fruit packages, but its purpose is to save Fruit-Grower readers from disappointment. The admonition is timely:

Order your apple packages now, if you have not done so already. Barrels and boxes are in great demand and the mills are working overtime to fill orders. Get your order in now.



APPCO

CORRUGATED
Barrel Caps and Box Lining

Better fiber, deeper corrugations and more of them, and, better gluing makes the APPCO line better for you.

Here is Our F. O. B. St. Louis Price:

	Per 1,000
Single-Faced Caps, 12 Inches, -	$4.25
Single-Faced Caps, 14 Inches, -	5.50
Single-Faced Caps, 15 inches, -	6.25
Single-Faced Caps, 16½ inches, -	7.00
Double-Faced Caps, 16½ inches, -	10.50
Box Linings, 11 x 18 inches, - - -	6.00

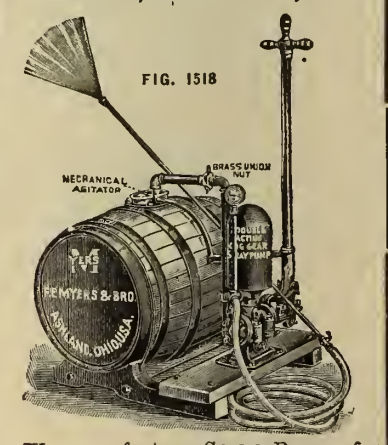
Don't buy until you see a sample of the APPCO line. Write for sample, stating about how many you will use.

We make the entire APPCO line in St. Louis and can ship any quantity at once — instanter.

Try the APPCO Dozen Box for shipping fancy apples this year. Ask for our "Fruit Bulletin" which pictures, describes and prices our entire line of Fruit Packers' Specialties. Address,

American Paper Products Company,
251 Bremen Ave., ST. LOUIS, MO.

MYERS SPRAY PUMPS
ALL KINDS NOZZLES, FITTINGS, ETC.



We manufacture Spray Pumps for every need, from the small hand and bucket pumps to the large power outfits. Send for catalogue and prices of Pumps, Hay Tools and Barn Door Hangers
F. E. MYERS & BRO.,
160 ORANGE ST., ASHLAND, OHIO

DEFENDS N. W. APPLES

In the May Fruit-Grower appeared an article by C. S. Harrison, headed "A Note of Warning." Mr. Harrison spent the winter in California and proceeds to pass judgment on the whole Northwest. After reading this article, one might be led to believe that there is grave danger of fruit growers of the Northwest coming to want, because of the over-production of apples. I want to speak in defense of our own special locality, the Palouse country, a valley about forty by seventy-five miles. Here we grow fruit with as fine flavor as is produced anywhere, and we do this without irrigation. We are not only able to save the expense of irrigation, but with our cool nights we are able to control codling moth with but one spraying, getting 97 to 99 per cent perfect fruit.

Now, while we are increasing our planting, and can increase almost to an unlimited extent, we see no danger of over-production of good apples. We will continue to ship our apples to Chicago, New York and other markets until the Eastern districts put on the market better apples than they have been doing. I was in Chicago during the land show and made several visits to South Water steret to see the apples. The finest fruit and the best packs came from Washington. Some of the packages sent to market from Eastern districts contained a large percentage of small, knotty, wormy apples, which we would have left in the orchard as culls. This same condition was found to exist in all Eastern markets.

We not only produce apples of finest quality, but we grow 40 to 50 bushels of wheat per acre, 40 to 90 bushels of oats, 150 to 250 bushels of potatoes, 20 to 30 tons of carrots, and great quantities of alfalfa, corn, etc. This county alone produces 2 per cent of the wheat of the United States. Come out and see us before you pass judgment. W. B. HARRIS.

Garfield, Wash.

California Fruit Growers Plan to Establish State Produce Exchange.

Fruit marketing in California will assume an altogether different aspect if a plan now under way to eliminate the middlemen is successful. Petitions have been filed with the state authorities asking that a measure be placed on the ballots for the November election providing for the establishment of a "State Produce Exchange."

Under the proposed plan, the governor is to appoint a commission of five members, with a salary of $6,000 each per annum, whose duties would be to establish and supervise public markets. Such markets would be in every city and town in the state and fruitgrowers, farmers and dairyman would dispose of their produce through these markets direct to the consumer.

It is noteworthy that the moving figure behind this scheme is a woman. Mrs. Mollie Block Flagg, a well known club woman of this state, originated the plan and has traveled throughout the entire state delivering lectures before clubs, civic societies, etc., to interest the people in her proposition. As a result of her work sufficient signatures have been procured under the new initiative law and the question will be placed on the ballot.

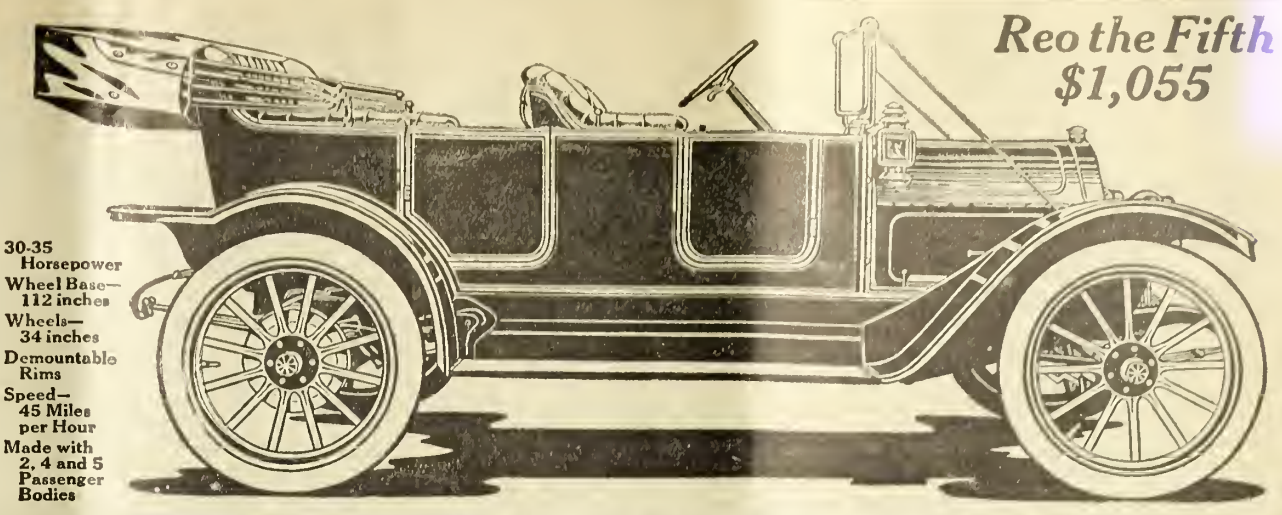
"We claim that such a commission," said Mrs. Flagg, "would decrease the cost of living from one-third to one-half. Now, produce has to be sent to the great centers of the state for distribution and then reshipped back over the same route to the small retailers. We propose that produce shall be sold near at hand without large freightage or express charges.

"The cost of living to the housekeeper and home maker will be lowered, we pledge you, because of these reasons, and because all agricultural, horticultural, dairy and farm products and anything manufactured or processed therefrom in the state of California will come under the control of the commission which will consign, sell and ship.

"Furthermore, the bill proposes the state shall itself become a packer and market produce under its own brand, this being a guarantee of quality.

"The commission will aid the producer and the housekeeper alike by issuing instructions as to growing and caring for crops and products, data in regard to markets and prices, and through its bureau of information will give these matters wide publicity."

California. L. L. DeBRA.



Top and windshield not included in price. We equip this car with mohair top, side curtains and slip cover, windshield, gas tank and speedometer—all for $100 extra. Self-starter, if wanted, $20 extra.

The Center Control

By R. E. Olds, Designer

Nearly every builder of high grade cars is designing a center control.

In another year, cars with side levers which block a front door will be so out-of-date as to hardly be salable.

Bear this in mind in selecting a car. The side lever car is now a back number, as every maker knows.

Left Side Drive

In some cars the side levers are merely moved to the center. That idea won't do. Men want to get rid of the reaching. They want the front of the car to be clear.

In Reo the Fifth there is only one lever, and that is placed close to the seat. All the gear shifting is done by moving this lever only three inches in each of four directions.

There are no brake levers, for both the brakes are operated by foot pedals.

This arrangement permits of the left side drive, as in electric cars. The driver sits close to the cars which he passes. He is on the up side of the road. In making any turn which crosses a road he is sitting where he can look back.

That is the greatest reason for the center control—to permit of the left side drive. Every car is coming to it as fast as models can be changed. The side levers and the right side drive are going out at once.

This Year's Sensation

Reo the Fifth, with the center control, has been this year's sensation. Our spring output was five times oversold.

In all the 25 years I have spent in this industry, I have never seen such a popular car.

It is this amazing demand which has driven makers to the immediate adoption of center control.

But That Isn't All

There are other reasons beside center control for this car's immense popularity.

It is the final result of my 25 years spent in car building. In every detail it marks the best I know.

The cars are built under my supervision. And I insist on absolute perfection.

The steel is twice analyzed, before and after treating.

The gears are tested in a crushing machine of 50 tons' capacity.

Parts are ground over and over to get utter exactness. The parts in each car pass a thousand inspections.

Engines are put through five severe tests—48 hours in all.

Finished cars are tested over and over.

There are in this car 15 roller bearings. Ball bearings are nowhere used, save in the clutch and fan.

The bodies are finished in 17 coats. The seats are luxurious. The tonneau is roomy.

With a lifetime's reputation at stake on this car, men know I am mighty careful.

Then the Price of $1,055

And the underprice has been another sensation. We fixed the initial price at $1,055, which is $200 below any car in its class.

The price of this car must soon be advanced, because of advancing materials. It is much too low. But the price remains at $1,055 while our present materials last.

Reo the Fifth is sold by dealers in a thousand towns. Write for our catalog, showing all styles of bodies, and we will tell you where to see it. Address

R. M. OWEN & CO., General Sales Agents for REO MOTOR CAR CO., Lansing, Mich.

Canadian Factory, St. Catharines, Ont.

(98,

Fine Imposed for Not Cutting Out Blight.

An orchardist in the Naches Valley, Washington, was recently fined $50 and costs, amounting to a total of more than $70, for failure to cut blight out of his apple and pear trees after having been notified to do so by the horticultural inspector. The instructions of the inspector were to cut all infected branches of apple trees twelve inches below infection, and to cut all branches of pear trees thirty-six inches below the infection. It was charged that the orchardist failed to do this.

Neighbors who were trying to control fire blight in their orchards testified against the defendant, claiming that his infested trees threatened their orchards. The case has been appealed, but in the meantime all orchardists are being warned to fight blight vigorously. This shows how this disease is being fought in the Northwest.

In connection with this crusade against blight it has been found that many persons, in thinning apples, use their thinning shears to cut off blighted twigs. Instead of checking the disease, this method really helps its spread, for the shears are infected and carry the bacteria to sound wood. It is recommended that separate shears be used to remove blighted twigs, and that disinfectants be used after every cut.

Planting Trees With Dynamite.

In the July Fruit-Grower H. B. Cooper asks about setting fruit trees with dynamite, and for his benefit I want to state that I would not put out trees in any other way. We set 400 trees this spring, using dynamite to dig the holes, and with all our dry weather our trees have grown from twelve to sixteen inches up to July 13. I use Red Cross 25 per cent dynamite, and in the fall before freezing make four shots from one eight-inch stick; this does as well as half a stick for each shot, and we have tried all sizes of shot. We don't tamp the soil at all, simply punching a hole two and a half feet deep, drop in the load and let 'er go.

We also shoot out all old trees with dynamite, using half a stick for this purpose, and in the spring plant a new tree where the old one was removed. We have had splendid success at this work. I certainly will never plant any more trees except by opening the soil with dynamite; one man who understands his business can shoot 200 holes a day.

Fruit prospects are good; all apples promise well except Grimes Golden and Huntsman trees. I had one Yellow Transparent tree from which I harvested nine bushels, which netted me $1 per bushel. All my small fruit plants and grapes are making a wonderful growth. A. J. WILLIAMS.

Platte County, Mo.

A most interesting article in the September issue of The Fruit-Grower will be a report of a visit to one of the best-developed sod orchards of New England. A Fruit-Grower subscriber in Massachusetts is doing things that some persons say cannot be done, and we will tell of his work in September number.

NOTES FROM NORTHWEST

June was a very unseasonable month, but we sold considerable truck during the month. Sales amounted to $240, from ten acres of ground, which was far behind the record for June, 1911. We had a smaller patch of strawberries this year, and rains injured the crop very much. The cool weather and rains were good for celery, lettuce, cabbage, etc.

We are now—July 2—selling potatoes from our planting of January 30; will plant the land to beets. First potatoes sold at $1.50 per hundred, but price is now down to 85 cents. Last year all our early potatoes brought $2 per hundred. We find that we do not get as heavy a yield from early-planted potatoes as we do from the plantings made in May and June.

During the hot spell we had to use a lot a water. Our ground is close-planted, and the trees and garden truck take lots of moisture for prop-

GOOD PEACH CROP AND FINE YIELD OF CABBAGE FROM SAME GROUND.
Intensive cropping like this requires the use of lots of barnyard manure and the application of water when needed.

er development. We cultivate all our crops as long as possible, and when plants get too large to cultivate we mulch with manure and then let a little stream of water run through between the rows every few days. This plan makes all plants and trees grow vigorously. On our small place of ten acres we use lots of manure and water and cultivate thoroughly.

Why is it that more fruit-growers do not prepare to irrigate their small-fruit plantations? I formerly lived near St. Joseph, Mo., and know that scarcely a year passed that blackberries or some other crop would not have been helped by an application of water at just the right time. This is also true of other states in which I have lived.

Those who have a spring or creek on their farms, and who can arrange to irrigate a small plat of ground from the same, are making a mistake if they don't install a system which will water at least part of the land in time of drouth. A small irrigation system will help out wonderfully, and yields of vegetables, berries etc. can be greatly increased. After my experience with irrigation I would never neglect to provide a system for irrigating small fruits in any part of the country. J. E. BUTLER.

Lewiston, Idaho.

Pruning Nursery Stock Before Shipment.

A Fruit-Grower subscriber asks why it would not be a good plan for nurserymen to prune ornamental stock and fruit trees before shipment. He believes that the stock can then be better packed and that it will carry better with less freight charges.

This subject has been discussed a number of times, but the chief trouble seems to be that nursery men have different ideas of pruning, just as planters have, and it might be a hard matter to please everyone. When it comes to apple trees, however, they can well be pruned before shipment, if one year trees are to be be planted, for the trees will be only a straight whip and can be cut back to the desired height. The planting of one-year apple trees is becoming more general, and there is no reason why they should not be cut back before shipment, permitting better packing, with less weight to run up the freight charges.

Cherry Season Unsatisfactory.

Word comes from the Yakima Valley that the Washington cherry season has been very unsatisfactory. Bing and sour cherries have brought the growers something, but Royal Anns practically nothing. The latter variety being light-colored, have arrived on the markets in bad condition, showing dark spots where the cherries were bruised.

The Himalaya Berry Again.

The Berrydale Experiment Gardens, Holland, Mich., which introduced the Himalaya berry, send us a letter from a customer in Mississippi saying that plants set out in 1911 are doing exceedingly well and that the flavor of the fruit is delightful. This man says he will increase his planting, for he believes the berry is a great thing for that section.

The same mail which brought this letter contained a communication from an ex-president of the Nebraska State Horticural Society saying he had thoroughly tested the Giant Himalaya berry in Nebraska and it has proved worthless. This gentleman at first thought the variety had something to commend it and listed it in his catalogue, but now will not fill orders for it, believing it to be worthless.

The Fruit-Grower has no desire to prolong this controversy. It seems to be pretty well established that the Himalaya berry is not hardy here in the Middle West, although the introducer says the plants in Michigan have a large crop of fruit this season, after the cold winter of 1911-12. The berry may be all right for the Southern and Pacific Coast states, but we have yet to hear from a single subscriber who is successfully growing it in the Middle West. Opinions seem to differ as anything that freezes out before it can be grown, but there is no use planting to the value of the fruit where it can bear, however good the quality might be.

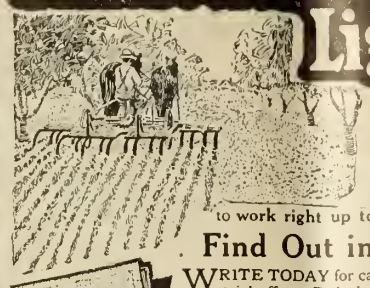
Let's consider that we have heard from both sides, and close the incident.

Threatens to Make Trouble If the Fruit-Grower Doesn't Come.

"You ask if I want The Fruit-Grower continued. I should say I do. It's the best paper of its kind in America, and if you quit sending it to me there will be trouble."—J. H. Goodknight, Indiana.

MR. BUTLER'S YOUNG PEACH ORCHARD.
As soon as pea vines are ripe they are mowed off; some of the pods are saved for seed, and remainder is fed as hay to cows and chickens.

Find Out About the Forkner Light-Draft Harrow!



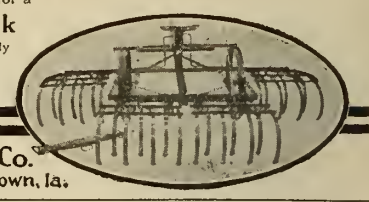
THIS low-priced harrow for orchards and vineyards—and general use—is a world-beater. Wonderfully light of draft—weight carried on wheels, not on horses' necks. Great worker—20 to 30 acres a day with one team—and every inch of soil **cultivated thoroughly—lifted and turned in long wavy level.** Best of all—it hangs low and has great extension—making it a snap to work right up to trees without horse or driver disturbing boughs or fruit.

Find Out in Your Orchard—At Our Risk!

WRITE TODAY for catalog and 30 day trial offer. Pick the machine suited to your soil and orchard and use it for a month—**and send it back if you don't find it the finest cultivator made.**

Send for This Free Book

"Modern Orchard Tillage"—written by highly successful orchardist—contains information that may be worth hundreds of dollars to you. Sent for the asking.



Light Draft Harrow Co.
907 E. Nevada St. Marshalltown, Ia.

J. H. Hale, the "Peach King," writes: "THE DOUBLE ACTION 'CUTAWAY' is a splendid tool. I use it in polishing off my peach orchards several times a year. A good pair of horses handle it all right."

The genuine "CUTAWAY" tools are used and endorsed by successful orchardists from coast to coast and bay to gulf.

In orchard work the driver can cultivate under the trees and below the low limbs, the horses not interfering with the branches. The double levers give the driver full control of tool at all times. For regular farm work the gangs can be drawn together.

CUTAWAY DOUBLE ACTION ORCHARD HARROW

Every orchardist and fruit grower should have one or more of these labor savers and fruit makers. They will positively pay for themselves in one season. To investigate is to be convinced.

Thorough cultivation makes large crops. Stirring the soil lets in the air, sunshine and new life, and kills foul vegetation. The "CUTAWAY" disk slices, stirs, lifts, twists and aerates the soil. CLARK'S "CUTAWAY" TOOLS run lighter and do better work than any other machine. Lasts a lifetime.

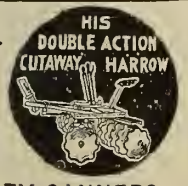
Send today for new catalog, "*Intensive Cultivation.*" Of course, it's free.

CUTAWAY HARROW COMPANY
968 MAIN STREET HIGGANUM, CONNECTICUT

CLARK'S CUTAWAY TOOLS

Orchard *and* Farm Harrows, Cider Mills, Etc.

Also Spray Pumps and Outfits, Rhodes Pruning Tools, Pointed and Step Orchard Ladders, Veneer Tree Protectors, Wilson Picking Bags, Kee's Fruit Pickers and other good things for the fruit grower. Nurserymen's Tools, Thomas Baler and Box Clamp. Common Sense Tree Digger, Etc. **Raney Home Canner, the best ever.** Fodder Balers, Barrel Headers.



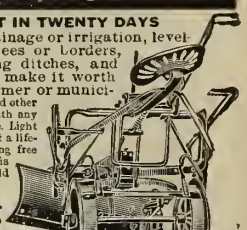
ELASTIC PRUNING PAINT
For Damaged Fruit and Shade Trees. Save those already damaged by rabbits, borers, pruning or other causes.

IMPROVED RANEY CANNERS
Make Home Canning Practical and Profitable to every housekeeper, farmer, fruit and truck grower. Write for catalogue.

Fruit Evaporators and Supplies
A SPECIALTY. SEND LIST OF WANTS.
E. G. MENDENHALL, General Distributing Agent "Clark's Tools"
ALSO FRUIT GROWERS' SUPPLY DEPOT BOX 300, KINMUNDY, ILLINOIS

20th Century Grader

SAVES ITS COST IN TWENTY DAYS
Cutting ditches for drainage or irrigation, leveling land, making levees or borders, grading roads, cleaning ditches, and many other uses which make it worth ten times its cost to farmer or municipality. Has sage brush cutter and other useful attachments not found with any other grader. A one-man machine. Light—strong—guaranteed. Will last a lifetime. Write now for interesting free book telling how the use of this machine will increase the yield of your crops.



THE BAKER MFG. CO.
530 Hunter Bldg., Chicago

Harvey Bolster Springs

prevent damage to eggs, garden truck, fruits, live stock on road to market. Make any wagon a spring wagon. Soon save cost—produce brings bigger prices—wagon lasts longer—horses benefited—thousands in use—"my wagon rides like auto" says one. Get a pair at dealers. If not at dealer's write us. Insist on Harvey's. 40 sizes—fit any wagon—sustain any load to 10,000 lbs. Catalog and fistful of proofs free.
HARVEY SPRING CO., 7361 7th St., Racine, Wis.

GUARANTEED

CIDER PRESSES

THE ORIGINAL MT. GILEAD HYDRAULIC PRESS produces more cider from less apples than any other and is a

BIG MONEY MAKER

Sizes 10 to 400 barrels daily, hand or power. Presses for all purposes, also cider evaporators, apple-butter cookers, vinegar generators, etc. Catalog free. We are manufacturers, not jobbers.

HYDRAULIC PRESS MFG. CO.,
(Oldest and largest manufacturers of cider presses in the world.)
51 Lincoln Avenue, Mount Gilead, Ohio

Get the Best Monarch Hydraulic Cider Press

Write us today for our remarkable offer on —all sizes—guaranteed strength and capacity. Also Gasoline and Steam ENGINES, Threshers, Saw Mills.

Free Catalog
Write for it today

MONARCH MCHY. CO., 642 Hudson Terminal, New York

WANTED, men to become independent farmers in Central Arkansas; finest fruit and berry country; the nation's garden spot; large profits on small capital; booklet free. CLOPTON HOPKINS, Kensett, Ark.

SOME HARDY PEACH TREES

Not long since I staled that practically all my peach buds were killed by the severe winter of 1911-12. I shall have to modify that statement a little. It is true that the greater part of the buds were killed, yet when the time came for the trees to bloom I found quite a number of trees blossomed lightly, while some had a fairly good bloom. This fact, together with another, viz., that a great many trees had no blossoms at all, made very plain to me certain causes and the remedy for the winter killing of peach buds—at least to a reasonable extent.

Most of the trees I examined in the winter were low trees or limbs that I reached from the ground. I found almost all the buds destroyed. The trees that showed the heaviest bloom were usually the tallest trees, showing that the higher up we get from surrounding low lands the less the danger from winter killing. A small orchard, situated near my main orchard but some twenty-five feet lower, lost every fruit bud.

Of course, the hardier varieties had most of the live buds, while the tender kinds did not bloom at all. Elberta in no case made any attempt to bloom, and trees of the Crawford type followed Elberta closely in this respect. Trees of even the hardy varieties that bore a big crop of fruit last year, failed to bloom almost as completely as Elberta. Noticeable among the latter class were Carman and Champion, both of which bore an immense crop last year, and now show plainly the devitalizing effect of this.

Among the yellow peaches, Crosby and Kalamazoo are about the only ones that will fruit this year. Both bore heavy crops last year, but the trees were thinned of fruit more thoroughly than others, Crosby having been twice thinned in July of last year.

The varieties that bloomed most freely were Greensboro and Mountain Rose, and another peach very similar to Mountain Rose, but smaller, the name of which I do not know. Both varieties appear to me to be fully at the head of our list of most hardy varieties.

A most singular thing is that where certain varieties situated on the south side of the hill on which I have my orchard are fairly full of fruit, even the hardy varieties on the north side have almost no fruit.

So then, if I had only the most hardy varieties in my orchard, such as Mountain Rose, Greensboro, Stump, Old Mixen, Crosby, Conover, etc., and had those varieties been properly thinned last year, I should have had quite a respectable crop this year.

Friends of mine, whose orchards were situated on flat land, had not only the buds, but also the trees themselves injured by last winter's cold.

One lesson that came very forcibly to me this season is the need of care for fully and spray thoroughly an orchard that is not to bear fruit. Having been drawn juryman, I was obliged to neglect some things the present spring, and one of these was the first spraying of my peach orchard. I had read that spraying for leaf curl is cumulative in its effect, hence I reasoned that as I had sprayed my peach trees so faithfully for the past five years, I could be excused for not doing it this year, since the crop would be light anyhow. The result was my trees, like everybody else's about me, had leaf curl badly—another thing that is not conducive to vigorous wood and fruit buds, and a big fruit crop for 1913.

I often hear the question, "What do you consider the best peach?" In my experience with some forty varieties, I have never yet found for a local market and especially a retail trade, any peach that in vigor of wood, hardiness of fruit buds and delicious quality of all grades of fruit—even to culls—would surpass or even equal Mountain Rose.

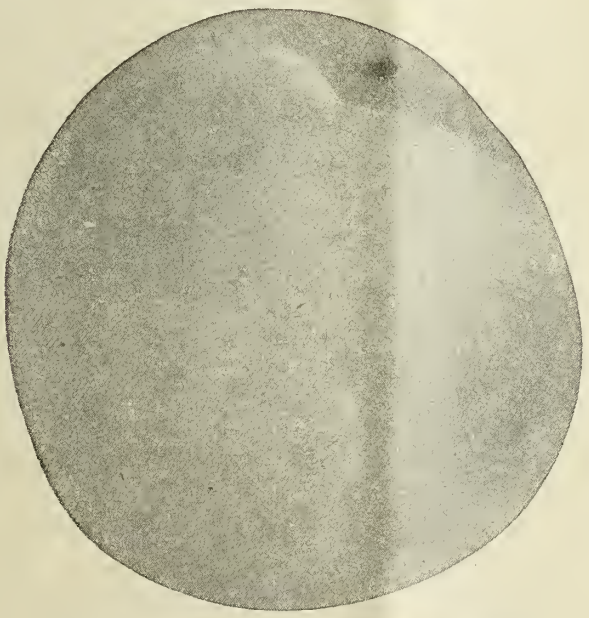
Another money-maker, I think, is Steven's Rareripe. This has the most vigorous trees in trunk, branches and roots of any variety I have ever seen, while the fruit which ripens the last thing before frost, is of fine quality.

ALBERT F. TENNEY.

Massachusetts.

The J. H. Hale Peach.

The accompanying illustration shows the new J. H. Hale peach, natural size, but it fails to show the beautiful coloring of the specimen from which the photograph was made. The specimens of this variety which we received were sent us by Mr. Hale from his Georgia orchards. The package came by express and the fruit arrived in perfect condition, showing the new variety to be a splendid shipper. Mr. Hale calls attention to the strong points in favor of this peach as follows:



NEW PEACH, "J. H. HALE." (Natural size.)

"One-third to one-half larger than Elberta; a peach without fuzz; a perfect freestone, with the solid flesh of a cling; has the habit of coloring thoroughly on the outside and to the pit a week or ten days before mellow enough for eating"

From the specimens we received we should say that all these good points are found in this variety, and in addition the fruit is of high quality. It is a beautiful, large yellow peach, with red cheek where sun strikes the skin; a very firm peach, with small pit for so large fruit, and the new variety should prove a winner, if the habits of the tree, as to productiveness, hardiness, etc., are all that can be desired. Certainly the variety is well worth testing wherever peaches can be grown.

Prof. J. C. Blair of Illinois Sells His Apple Orchards.

We are in receipt of the announcement of the sale of the Blair orchards of Southern Illinois. Some ten years ago when Professor Blair was striving hard to upbuild the commercial orchard interests of Southern Illinois he conceived the idea of himself engaging in the commercial orchard work, so as to be able to put into concrete form his methods and ideas with regard to the improvement of the orchard business as then carried on in the southern third of the state. In order to do this he had the hearty cooperation and financial backing of the Ennis Estate. Orchards were bought at Kinmundy and Salem, in Marion County and at Calhoun in Richland County. About 500 acres of farm land, including 280 acres of bearing orchard, have been operated as the "Blair Orchards," under the personal supervision of Mr. Blair. The yields of these, even under adverse climatic conditions, have steadily increased until this year there will be harvested about 22,000 barrels of excellent fruit.

Feeling, therefore, that he has fully demonstrated what he set out to show, namely, that commercial orcharding in Southern Illinois can be made extremely profitable, and wishing to give his entire thought and attention to the work of his office as state horticulturist, he has concluded to withdraw from an active participation in the commercial enterprise. Mr. Blair has, therefore, disposed of his interest in the "Blair Orchards" to his former business associate, Mr. Ennis, of Chicago

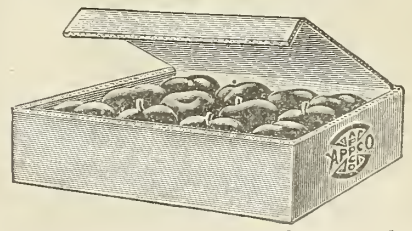
In the August St. Nicholas.

There is a sketch for older readers of St. Nicholas in the August number—a narative of the noble life and splendid work of that English hero of whom Sir William Butler said: "Absolutely without parallel in our modern life, Charles George Gordon stands out the foremost man of action of our time."

Additional interest attaches to the sketch when it is known that the author, Hamilton Fish Armstrong, was still a lad in school when he wrote the article.

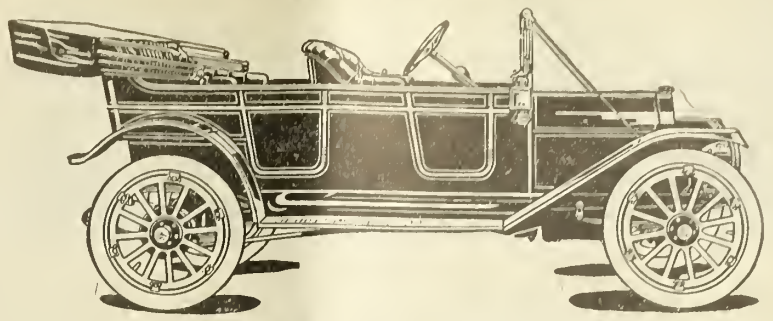
Paper Carton for One Dozen Apples.

The American Paper Products Company, St. Louis, Mo., which has been in correspondence with hundreds of Fruit-Grower readers to ascertain what is desired in the way of small packages of apples, reports that it seems to be the general opinion that a package holding one dozen apples



and another holding two dozen apples will meet a popular demand. Accordingly, this concern is making corrugated paper packages similar to the one shown in the accompanying illustration, in which growers can market fancy apples direct to consumers in original packages. We shall be glad to hear from any reader who tries these new-style packages for especially fine fruit.

KRIT



Model "K" Touring Car, Fully Equipped—$900

Equipment includes three oil lamps, two gas lamps, generator, top with side curtains and top cover, windshield, horn, demountable rims, with spare rim, tool kit with jack and tire repair outfit with pump.

Have the dealer bring the Krit right out to the farm

Do that.

Telephone the nearest Krit dealer. Tell him that you and the family want a demonstration. He'll be glad to accommodate you.

We ask you to do this because in no other way can you form such a true estimate of the Krit's ability.

You'll have it right on your own roads, your own hills, your own farm.

You can see exactly how the car behaves in the neighborhood where you would use it most

Your family can see how easy it rides, how comfortable and roomy the tonneau is.

Remember that you place yourself under no obligation whatever in asking for the demonstration.

We simply want you to have the right idea about the Krit; and you can't get it unless you see the car do its work.

We'll tell you this, though:—You are going to be delightfully surprised at its power and its easy riding; its finish and its style.

And you are going to admit to yourself secretly—if not openly—that you can't see the advantage of a larger, heavier car; or one that costs more money.

If you don't know the Krit dealer nearest you or can't locate him, write us and we will send you his name and a card of introduction.

Other Models

Model "U" Underslung Roadster $1000
" "KR" Roadster 900
" "A" Roadster..... 750
" "KD" Covered Delivery. 900

KRIT MOTOR CAR COMPANY, 1009 E. Grand Boulevard, Detroit, Mich.

Don't Wear a Truss

New Rupture Cure

Brooks' Appliance. New discovery. Wonderful. No obnoxious springs or pads. Automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves. No lymphol. No lies. Durable, cheap. Sent on trial. Pat. Sept. 10, '01.

Catalogue Free.

C. E. BROOKS, 57A State Street, Marshall, Mich

Coyne Brothers Handle All Kinds of Fruit and Produce
160 Water Street, Chicago, Ill.

Notes from Morrisania

It is a part of the policy of the Grand Junction (Colo.) Fruit Growers' Association to keep its members informed about the general condition of crops in other parts of the country and to advise them as to the best way in which to handle their fruit crops Early in July of this year the Association issued a circular, which was sent to its members, calling attention to the condition of the apple crop in different sections. The circular closed with a paragraph which is worth quoting:

"Please remember that only the very best quality, grade and pack of fruit will be in demand this year. Inferior stock can be secured at all times for a song, and a song with only one verse, therefore, let us all realize fully the true conditions and do our best to furnish nothing but the very finest. Those who succeed will have cause to rejoice after the hard work is over and the returns credited to their bank account. Quality! Quality! Quality is, and will be, the cry of every fruit market this year. We can furnish it, so let's keep busy."

ALFALFA HONEY IS OF VERY FINEST QUALITY

Thinning.

Quality, however, is a term that has a variety of meanings, and may be applied to the flavor as well as to the condition of the fruit, such as its perfection of coloring, freedom from insects and fungous injuries and carefulness in packing. It may vary also with the individual who uses the term and with the part of the country in which it is used. I take it that the meaning of "quality" as used by the Grand Junction Association applies more strictly to the physical quality of the fruit, and on this account it is necessary to bear in mind what factors enter into the production of fruit of the finest appearance. Spraying is one of the most important of these factors. In such a season as this, when insects and fungi are exceedingly plentiful, fruit of utmost perfection cannot be produced without thorough, careful and proper spraying.

But there is another thing, a thing not often thought of, particularly outside of those fruit districts which are the most progressive. This other factor is that of thinning, or reducing the number of fruit on a tree early enough in the season to let that which remains have a more liberal supply of nourishment from the tree. Thinning is an operation that is not very generally practiced, for nature usually steps in and removes a portion of the crops by what is commonly known as the "June drop." This natural dropping of the fruit is a part of the struggle for existence. There are several causes for this dropping, but there is usually one apple in a cluster slightly larger than the others and appropriates a larger supply of the nourishment furnished by the tree. This apple frequently takes so much of the food supply that the remainder of the cluster is literally starved out, in which case they drop from the branch. This dropping generally occurs during the month of June in most parts of the country, from it derived the name of "June drop."

In seasons when the trees set an unusually heavy crop of fruit, this June drop does not always take off enough of the fruit which has set to allow that which remains to reach good size for the variety Not only that, but the trees will be broken by the excessive weight and much fruit lost in that manner. To avoid such conditions, it becomes necessary for the orchard man to remove the excess fruit early in the season.

In the bearing orchard at Morrisania a force of fifteen men spent practically the whole of the month of July at thinning the apple crop The work was begun immediately after the second spraying for the codling moth was completed, or when Jonathan apples were but little over half an inch in diameter Although thinning has been a regular practice at Morrisania for a good many years, no data pre- of thinning has been collected.

By another year there will be a guide that will show positively whether it is better to thin so as to leave one apple to a cluster, two apples to a cluster, or whether to allow the fruit

NOW IS THE TIME TO SEE

Morrisania

Within the past year a great many readers of The Fruit-Grower who contemplate changing their location have asked about Morrisania, and expressed a desire to see the place. A number of readers have visited Morrisania and have bought tracts of land, and others who contemplate doing so should arrange to go now to see this fine tract of fruit land.

Crop Conditions the Very Best

Crops of all kinds are good. By visiting Morrisania now you can see just what can be produced there. You will not need to take anyone's word for anything, for the place speaks for itself. When you see the abundant fruit crops of all kinds, then consider that this has been the record of Morrisania for twenty years, and you will have some idea of its advantages as a place for growing fruits of highest quality.

Climate Is Ideal

By visiting Morrisania now you will also have an appreciation of the wonderful climate. You will sleep under blankets every night and awake in the morning refreshed and ready for the enjoyment of another perfect day. Colorado's climate is ideal for those afflicted with pulmonary complaints of any kind, and Morrisania has as fine climate as can be found in all the state.

Shipping Facilities Are Good

Morrisania has the advantage of being located on main line of two railroads, the Denver & Rio Grande and Colorado Midland. This gives best of shipping facilities. Our fruits are marketed through the Grand Junction Fruit-Growers' Association, one of the best shipping associations in the country. No fruit district is better located than Morrisania.

MORRISANIA

Is an Ideal Location for a Home and for Growing Fruit of Highest Quality

Everything is right at Morrisania. Everyone who sees the place agrees that it is a remarkable location, and such men as Dr. W. L. Howard, of the Missouri Agricultural College; Prof. Wendell Paddock of the University of Ohio; Orlando Harrison, the nurseryman, of Berlin, Md., say that conditions are just right. Everything has been tested—the soil, the water rights, and crops of all kinds have been grown long enough to know those which pay best. There is no uncertainty about anything at Morrisania.

Go Now and See Morrisania

Low rates are now made by all railroads to Colorado points, and your trip can be made for less money now than after the summer rates are withdrawn. You can see the crops on the trees now. If you want to grow fruits where crops are sure and where conditions are ideal, or if some member of your family needs the benefit of Colorado's wonderful climate, you owe it to yourself to visit Morrisania now and to make careful investigation of its advantages.

Only a few tracts of land remain to be sold. Price ranges from $150 to $300 per acre, including perpetual water right. When these tracts are sold, no more land at Morrisania is available. Go now and see the place for yourself.

For any additional information write

Morrisania Land & Orchard Co.

Grand Valley, Colo., or Box 1277, St. Joseph, Mo.

to stand as closely as it has set, or to thin out to a distance of as much as ten inches between individual apples. An experiment has been started this year, using Jonathan trees, which it is hoped will bring out this information. The experiment has been planned along the line of a similar experiment made by Prof. R. S. Herrick of the Colorado Experiment Station, and reported in Bulletin 170 of that station. Professor Herrick's experiment was made with Winesap trees, a variety which does not attain the best size under Colorado conditions unless well thinned. In our case Jonathan was used, largely for the same reason,

HOW THE CHERRIES GROW AT MORRISANIA.

as our trees tend to overbear and the apples consequently under size.

Professor Herrick summarizes the results of his experiment in the following terms:

"1. That thinning of the mature Winesap tree pays in money returns the first year.

"2. The more evenly distributed the fruit on the tree the more uniform will be the size and color of the pack.

"3. That Winesaps respond to thinning by increased size and better color when thinned as late as July 20.

"4. The earlier that thinning can be done, the better will be the returns from the fruit sold and the greater will be the vitality of the tree.

"5. The best results are attained in thinning an old Winesap tree by leaving the apples from 9 to 10 inches apart.

"6. That proper pruning, and keeping the trees a proper distance from each other will facilitate thinning.

"7. That systematic, annual, uniform thinning done from the time the trees come into bearing, should have much to do in securing an annual crop, thereby doing away with the so-called 'off year' bearing of some of the apple varieties."

From our past experience in this work we agree with these conclusions, but this experiment will afford positive proof.

The results of this thinning experiment on Jonathans will be reported in these columns after the fruit has been harvested, and will undoubtedly be of much value to everyone who is endeavoring to produce the fruit of quality which is in continually increasing demand.

Bees.

An apiary is maintained at Morrisania both for the purpose of aiding in the pollination of the apple blossoms and to harvest the honey crop made available in the alfalfa fields. No better honey is produced than that from alfalfa and closely related legumes such as sweet clover and white clover. There is a large acreage of alfalfa in the vicinity of our apiary, and miles of the ditch banks in this locality are bordered by sweet clover, so that there is an abundant pasture for the bees. The apiary at Morrisania now contains 86 stands, with a total of 200 stands within a radius of a mile. Several of our hives have already filled two supers, with a third almost full at this time (July 21). This has been done with what experienced apiarists consider as only a moderate flow of honey. What would be done in a season having a heavy flow of honey can only be conjectured, as the average production for large apiaries in this locality is only two supers per stand.

The bees which have stored up this supply of honey for us are hybrid black and Italians. They are splendid workers and very quiet. Swarming has been quite frequent and a large number of new hives have already been established this season. It is expected that our apiary will eventually be enlarged to about twice its present size, by which time the available pasture will be carrying all the bees it will support.

Potatoes.

The potato crop at Morrisania again promises to be a good one. By far the largest portion of the potatoes on this ranch are being grown by those who have purchased tracts, and are using this crop between the trees in their newly planted orchards. We are growing a few, but they will be used here at home only, as we cannot grow potatoes and apples in a commercial way at the same time, as the harvest season for each comes at the same time. The settlers who have new orchards are not, however, confronted with this difficulty.

While potatoes constitute the principal intercrop in the young orchards, Mr. H. W. Allison has a large block of onions in one of his orchards, and Mr. H. E. Butler is growing a couple of acres of garden peas for seed for the Henry Field Seed Co., in one of the young orchards under his care. From the manner in which this crop is growing there is every indication that this section may soon become a seed growing center of prominence.

Curing Cowpea Hay.

Several subscribers want to know how to cure cowpea hay, the vines having made a very rank growth, and consequently contain much water. With danger of frequent rains, it is risky to allow the hay to lie until thoroughly cured, and perhaps these persons can do no better than to try the plan recommended to us a number of years ago by Mr. Roland Morrill, who at that time grew a considerable acreage of cowpeas on his farm in Texas.

Mr. Morrill cut his cowpea vines and cured them in haycocks somewhat larger than the ordinary. These cocks

HIVING A SWARM AT MORRISANIA.

were made by piling the hay around a stake, on which stubs of branches had been left, forming short arms extending out each side of the stake. The hay was piled against this stake, and of course the stubs prevented the hay from settling, leaving air spaces all through the cock. These stakes were cut from the timber, usually of blackjack oak, and as the haycocks were quite large, not a great many were needed. The hay cured perfectly in these cocks, after which it could be stacked as desired. This same plan ought to work well with alfalfa.

Another plan for curing alfalfa was recently shown us by Mr. H. B. Fullerton, who is growing alfalfa down on Long Island. Instead of allowing the hay to cure in the swath or windrow, Mr. Fullerton lets it lie for, say, twenty-four hours, and then puts it in the stack, and to prevent its heating he provides a current of air under and through the stack.

This is accomplished by making a platform about a foot or fourteen inches from the ground, and instead of having a solid top, this platform is covered with wire netting with a quarter-inch mesh, which permits the air to circulate under and through the hay. The stack is built around a chimney-like affair, made by tacking this wire screen over a skeleton framework, which extends from the bottom of the stack to the top. This "chimney" is about a foot square, and of course is as long as the stack is high; the air not only passes up through this ventilator, but also passes out through the mesh into the hay.

Mr. Fullerton says he cures his hay perfectly, quickly, and without leaving it exposed until the leaves drop. The plan is inexpensive, and is worthy of trial by those who have difficulty in curing alfalfa or other kinds of hay.

To Keep Flies From Stock.

Are the flies bothering the cows and other farm animals these days? Yes? Well, you can keep them away from the stock if you will apply the following mixture on the animals with a brush. Take 1½ pounds of resin, 2 cakes of laundry soap, ½ pint of fish oil and water enough to make three gallons. Dissolve the resin in a solution of the soap and some of the water, and then add the fish oil and the rest of the water.

Barrels are too high in price to allow the packing of inferior apples this year. Use them for evaporating or cider purposes.

The Colorado Midland

Affords the Best Service to

The Fruit Lands and Farming and Grazing Lands of the Western Slope

There are thousands of acres of good lands still uncultivated in the fertile valleys of eastern Utah and western Colorado, and oceans of water in the streams and on the mountain tops. Special rates made for landseekers to go and look at these lands and for settlers. Write us or come in and ask us for information about what has already been done in that section.

MIDLAND ROUTE

W. B. THROCKMORTON, City Passenger Agent
E. D. WHITLEY, City Ticket Agent

Telephone Main 6280. Seventeenth and California Sts., Denver, Colo.
DINING CARS, PULLMANS AND CHAIR CARS ON ALL TRAINS

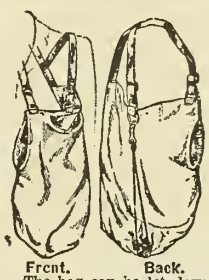
$29.50 Buys This Elegant Top Buggy.

WARRANTED FOR Five Years.

Retail Price $60.00. Buggies, Surreys, Spring Wagons, Farm Wagons. We have cut out our Jobbers, our Wholesalers and our Retailers and offer YOU their profit. Write today for our

Free Catalog and Delivered Prices

Mutual Carriage & Harness Mfg. Co., Station 35N East St. Louis, Illinois, or 290 5th Avenue, New York City.



Front. Back.

Ideal Fruit Picking Bag

Made of heavy weight duck and so arranged as to equalize the load on both shoulders.

The openings are arranged so both hands can be used in picking and the draw string is arranged at the fruit can be let out so the bottom in emptying the bag.

The bag can be let down to the bottom of the barrel before opening the draw string, thus not bruising the fruit.

This is the best and handiest arrangement for picking fruit that has ever been offered. A trial will convince the most skeptical.

Sample Postpaid, $1. Agents Wanted

BARKER MFG. CO.

35 Ambrose Street. Rochester, N. Y

Pack Your Apples

and other fruits with the

"NEW ST. LOUIS BARREL HEADER"

—the Standard Barrel Press of the U. S. Strongest, simplest and quickest acting press made. As light and strong as steel and hardwood can make them. Thousands now in use by most successful fruit growers everywhere. Indispensible to every grower who would pack his fruit evenly and tightly before heading his barrels. Special price in quantities. Order today. Every header fully guaranteed.

HYNSON TOOL & SUPPLY COMPANY
4756 Easton Avenue. St. Louis, Mo.

KEES FRUIT PICKER

F. D. KEES MFG. CO. BEATRICE NEBRASKA.

GATHERS APPLES, PEACHES, ETC. as carefully as by hand with less work. Saves climbing ladder. No fruit out of reach. No wires to injure fruit or tangle in branches. Fruit drops into cloth bag, which can be filled before lowering. Price complete, except long handle (a fish pole will do), 75c, postage paid. Your money back if not O. K. Circular sent on request. Address Box 425.

Ladders

We Make the Best Step Ladders on the market for Fruit Picking. Send for our illustrated catalog.

Morrill & Morley Mfg. Company
BENTON HARBOR, MICHIGAN

PREPARING FOR ALFALFA

A Good Seed Bed, the Alfalfa Bacteria and Good Seed Necessary to a Good Stand

A great boom in planting alfalfa has struck parts of the country east of the Rocky Mountains, where it was formerly thought alfalfa could not be grown. In practically every state of the Union soil is now being made ready for planting alfalfa, and thousands of dollars' worth of time and seed will be wasted, simply because conditions for getting a stand of alfalfa are not properly understood.

Alfalfa is easy to grow on soils that are adapted to the plant. You should not have any trouble in getting a stand on good alfalfa land, if you plant good seed in a well-prepared seedbed. This is the condition of a good seedbed for alfalfa: The soil is loose about as deep as the seed is planted, and below that it is firm and makes a good connection with the subsoil. Be sure the capillary attraction with the subsoil is well restored after plowing. A loose seedbed will not do for alfalfa.

Ground for alfalfa should have been plowed before now, and you should now be putting in some good time working the seedbed down in good shape. If you plow the ground for the crop now, you can make a good seedbed if there is plenty of rain, but if there is not a good supply of rain you can't.

Alfalfa will succeed on many different soils, ranging from sandy soils to the heavier types. It will grow best on a deep fertile loam that is well supplied with the mineral elements of plant food. The soil must be well drained, for on wet land where the ground water is near the surface, alfalfa will grow very poorly, and the plants soon die. And the crop will not grow on soils that are deficient in lime if there is a tendency for the soil to be acid. Alfalfa will not live if there is an acid condition in the soil; and this is the cause for much of the failure in getting a stand on the older soils in Eastern Kansas. The crop will do very well, usually, on the limestone soils. It does well on flinty soils formed by the decomposition of flint rock. Take, for example, in Eastern Oklahoma, there are, in some sections, flint hills alternating with sandstone and limetone hills and around the base of these hills the legumes, alfalfa, clover and cowpeas, all do better than they do on the sandstone soils.

Some of the land in the corn belt is so worn that it is not in good physical condition to grow the crop, and it may be best to build the soil up by growing an annual legume crop, such as cowpeas, before the alfalfa is planted. In that case, you might put on the soil all of the barnyard manure you can get, for it will have time to get into the soil before the alfalfa is seeded. Don't put manure on the soil the same year the crop is planted, for it will interfere with the capillary attraction, and not leave the soil in good condition for the crop.

Alfalfa Bacteria Must Be Present.

Much of the failure in growing alfalfa is due to the lack of nitrogen-gathering bacteria in the soil. Bacteria grow on the roots of alfalfa, and gather the nitrogen from the air, which is stored on the roots in little nodules or swellings. Alfalfa will not make a good growth unless these bacteria are present. Nitrogen is an essential element for the growth of all plants, and on most soils it is the element most easily exhausted. And it is the most expensive element to purchase in the form of commercial fertilizers. The legumes are the only family of plants that can use the nitrogen of the air, and they can't do so unless the bacteria are present and are working properly. All other plants must use merely the supply of nitrogen in the soil, and this usually is the limiting element in the yield of crops.

If the alfalfa bacteria are not present, you must supply them, of course. Now, there are many commercial cultures advertised that are successful if the conditions are all right, but if all of the conditions are not right they will fail. So it is best to inoculate the land by the transfer of soil from a old alfalfa field. Transfer about 300 pounds of soil to the acre, and spread it over the field that is to be put in alfalfa, just before the seed is planted. Be very careful that the soil does not dry out while it is being spread on the field, and harrow it in promptly, in order to mix it with the other soil. If the soil dries out too badly, the bacteria may die. And always use soil from an old alfalfa field to inoculate the new field if you can get it, for it is much more certain than the artificial cultures. And this is important also: The bacteria that grow on the roots of sweet clover are the same as those that grow on the roots of alfalfa, and you can use soil from a sweet clover patch if you cannot get alfalfa soil.

Under humid conditions, it usually will be best to sow alfalfa in the fall Further west, spring seeding is sometimes to be preferred to fall seeding. If the seed is sown in the fall, some of the small grain crops usually will be grown for the preceding crop. In this case, the soil should be plowed early in July, about four inches deep. Harrow the ground after the plow, promptly, in order to break up the clods. Then disk the ground about every two weeks during the summer until the seed is planted. Of course, if a drouth sets in and the surface becomes dry and loose, you needn't disk the soil until a crust forms. These diskings will firm the soil and restore the capillary attraction with the subsoil, conserve the moisture and aid in the formation of available plant food. All of this will put the soil in good condition so the plants can make a good growth to stand the freezing of the winter.

No matter what methods you use, have these conditions when you plant the seed: Have the soil well pulverized about as deep as the seed is planted, and have it very firm with a good oapillary attraction with the subsoil below that.

Use Only Good Seed.

There is some very poor alfalfa seed on the market this year. Much of it contains a large amount of weed seed such as the seeds of dodder, plantain and dock, and with much of it the germination is low. In the buying of alfalfa seed, take this as an axiom to follow: Don't take anybody's word for anything. Always buy on sample, and know just what you are getting. Unless you are familiar with alfalfa seed you had better send a sample of the seed you expect to buy to the botanical department of your state agricultural college. The department will tell you the percentage of weed seeds present and just what these weeds are, and the per cent of the alfalfa seed that will grow. In that way, you can be certain of what you are getting. And you will, of course, have to pay a good price for seed. The good grades of seed always are the cheapest. The colleges will cheerfully do this testing work free of charge.

If you desire to make a germination test of the seed yourself, and it is an interesting and important thing to do even if you have the seed tested by someone else, you can do it in this way: Take a cigar box or other small box, and place several folds of wet paper in the bottom. Place 100 seeds in this box that are a fair sample of the seed you desire to test. Cover the seeds with several folds of wet paper, and set the box in a warm place, almost anywhere will do in the summer months. Examine the seed in five days, count the seeds that have germinated and throw them away. Remoisten the paper and set the remainder of the seeds away for about five days more. At the end of that time, count the germination results again, and stop the test. A large percentage of germination for the first five days indicates good, strong seed, while a slow germination indicates a weak seed that will not germinate in the field except under the most favorable conditions. The seed should germinate as high as 80 per cent.

Drill Alfalfa Seed If Possible.

If you have planted the alfalfa on a well prepared seedbed in favorable soil, you needn't drill in so very much seed. Heavy alfalfa seeding is not necessary. Twelve pounds of alfalfa sown on a well prepared seedbed will produce a good stand of the crop.

Always drill in the seed, if you can get a drill with a good grass-seed attachment. The drill will put the seed in the soil where the moisture will be available for the germination. Don't plant the seed too deep. Usually the seed should not be put in deeper than one inch, and on very heavy soils the seed should be covered much less than that. If the seed is planted too deeply, the young plants cannot reach the surface, as the amount of plant food that is stored in an alfalfa seed is very small.

After the growth of alfalfa is established, keep the weeds mowed off the first year, or they will kill out the crop. After the alfalfa has been stunted by the weeds, the crop is often killed by close mowing, which lets the sun in on the tender plants and kills them. Keep the weeds mowed off promptly.

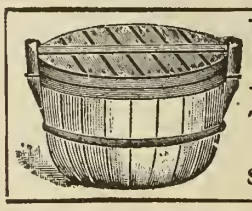
Don't pasture alfalfa before the plants have a chance to establish themselves in the soil. Don't pasture the field the first year at all, and even the second year's crop should not be pastured heavily. After the alfalfa is established, it should be disked every spring. This disking will conserve moisture, aid in the formation of available plant food and destroy the eggs and larvae of insects that may be present. Set the disks rather straight, so the crowns of the plants will not be cut off. Weight the disks so they will run at least two inches deep. Harrow the land after the disking so the soil will be left smooth.

THE IDEAL
Corrugated Paper
CUSHION
For Packing Apples

Absorbs the shocks in travel, and apples are delivered unbruised and as round and solid as the day they were packed. These add a tone of distinction, and cleanliness to any shipper's product, and the cost is so proportionately low that it will pay packers to investigate by simply sending for our catalogue and price list.

THE HINDE & DAUCH PAPER COMPANY
Department "3" SANDUSKY, OHIO

Apple Barrels and Boxes
Barrel Material, Supplies, Presses Picking Ladders, Etc. Second Hand Whiskey Barrels and Kegs
Hauber Cooperage Co., Kansas City, Kan.



Baskets Fruit Packages and Berry Boxes
TREE PROTECTORS A SPECIALTY
Address 146 Arsenal Street
St. Louis Basket & Box Company, St. Louis, Missouri

APPLES
We want to hear from you as to what you will have in EARLY AND LATE APPLES.
Write and tell us what you will have in PEACHES, PEARS, PLUMS, Etc. Ask for Booklet "G."
MYERS, WEIL & COMPANY, 750 Broadway, CLEVELAND, OHIO

APPLE BERRY BOXES
WESTERN WHITE PINE
Local Shipments—Carload Lots.
Place Orders Early.
F. A. CARRIER
Dwight Building. Kansas City, Mo.

Plant Peonies This Fall
Pick out the spots where you would like to see them blooming and plant Wild Bros.' Peonies early this fall. They are full of real life and vigor and will reward you next spring with their beautiful, fragrant flowers. Write now for descriptive Peony list.
WILD BROS. NURSERY CO.,
Box 501. Sarcoxie,, Mo.

ENTOMOID
THE UNIVERSAL SPRAY.
Combines the best features of the Lime-Sulphur Oil Emulsion and Soap Sprays, against scale, all soft-bodied insects and fungus diseases. Endorsed by Experiment Stations. Cheapest and most effective. Unequaled insecticide and fungicide. Sample and prices on request.
ENTOMOID CHEMICAL CO., WOONSOCKET, R. I.

BINDER Attachment with Corn Harvester cuts and throws in piles on harvester or winrows. Man and horse cuts and shocks equal with a Corn Binder. Sold in every state. Price $20.00. W. H. Buxton, of Johnstown, Ohio, writes: "The Harvester has proven all you claim for it; the Harvester saved me over $25 in labor last year's corn cutting. I cut over 500 shocks; will make 4 bushers corn to a shock." Testimonials and catalog free, showing pictures of harvester. Address New Process Mfg. Co., Salina, Kas.

RIGHT NOW
is the Time to Send for Our Price List on
FRUIT TREES
Varieties True—No Disease—We Pay the Freight
For Price List Address
NEW HAVEN NURSERIES
Box 125 New Haven, Mo.

QUESTION OF MARKETING

Ask a dozen farmers or other producers what they consider the most important department of their business and they will nearly all, ten of them, at least, answer that marketing is much the most important. Given good land, favorable weather and reasonable cultivation and the crop will be good enough to satisfy the most fastidious. But after it is grown the question of selling it at a profit looms large. And as the years pass and the selling becomes more and more complicated this question assumes more and more importance.

For fifteen years the writer has been a market reporter in New York, the greatest of all centers for the disposal of garden truck, fruits and farm products. It is the producers of these under products who suffer most from the over-supply one day and the poor quality of stock the next, caused by this over-supply.

The returns to the grower are pitifully small in many instances. Often they are absolutely nothing and instances are not wanting where the grower is obliged to pay his own freight.

To begin, there are too many people now who get more or less profit from farm products. Commission men seem to be necessary under present conditions, though sometimes there is a strong feeling that their elimination would benefit grower and consumer alike. But there are brokers, freight handlers, teamsters and others before the retailer is reached who must secure their share or the shipments are held up in some mysterious way and the stock is damaged by lying too long in transit. Growers are familiar with the effects of these delays and they understand that something is done which injures them and reduces their profits below expectations. But they do not know the reason always, and they sometimes feel that they are more unjustly dealt with than almost any other business man. The men who profit by this combination are not wholly to blame. It is the system which is at fault and until something can be devised which is better and which will insure a larger portion of the profits to the grower, the situation will remain substantially as it is now.

Some years ago the growers thought they had solved the problem of profitable selling when they formed associations to handle their goods for them. They did settle some problems, notably delayed shipments and some other questions of that character. But in numerous instances they added another burden to their already overloaded system. The association must have its share, otherwise it cannot exist, and it does not reduce the cost of handling after arrival in New York one penny. The brokerage is just the same on each car. The transportation charges about the city are just the same. It costs just as much for lightering across from Jersey City. The commission man gets quite as large a percentage If he sells to the jobber, as he frequently does, the jobber must have something for his portion of the work of distribution, and it all winds up with the retailer taking his profits, which have to be sufficient to keep him good, even though he over buys and loses a considerable quantity each day.

Through this long line of hands your produce must percolate, each one getting something for the work he does. Many growers say that these men who do practically no work, receive more proportionately than they do themselves. Small wonder, then, if the grower feels as though he were unfairly treated and his profits are unnecessarily reduced below the reasonable basis which most business enterprises are supposed to yield.

These facts cannot be controverted. They are so true that everyone who knows anything about the produce markets and the system under which the selling is done will admit at once that there is no room for argument.

The next point in the discussion is the matter of remedy. And here it is impossible to propose anything which seems now to meet the case with a sufficiently attractive proposition to entice growers and others to adopt what is offered. There is much talk about eliminating the middleman or the middlemen. But retailers look to jobbers for their goods and could not be induced to go elsewhere for them. Commission men sell to retailers to some extent, but they prefer to handle the stocks sent them in larger quantities than retailers buy. It would increase their cost of doing business if they employed the bookkeepers and others needed to do business directly with the retailers. So they discourage anything like this and plainly announce their preference for the present system.

So it might be pointed out all along. Each department of this complicated business believes it is quite as important as all the other departments and has no present intention of retiring. Neither has any individual department any desire to modify its business in such a way as to reduce its control upon the market. The commission man can control now. The jobber can, if he chooses. The retailer can in his own neighborhood, and, after all, none other interests him. So it will be extremely difficult to secure modifications which will help the grower to a larger proportion of the profits of his labors.

One method has suggested itself to many and there has been serious discussion of it in a small way, but so far nothing definite has been done. The organization of this department of trade into one homogeneous whole, which should control the business all over the country. Once the growers accomplish that, they can dictate their own terms. They could then establish their own selling agencies in every city and eliminate all the middlemen they chose. It would be impossible to secure stock without going to the selling end on their own hook. Then salaried employes and brokers and commission men and jobbers would alike be eliminated. Not all the expense now incurred could be saved, but some of it could, and some very astute men believe that this will be the ultimate solution of the problem.

They point to the California orange growers as proof that the scheme has merits. Their product is marketed through auctions, but it is handled previous to that by a salaried employe whose business it is to attend to California oranges and lemons and nothing else. The result is reported to have satisfied all growers and the system might be utilized by growers of farm produce, modified somewhat, perhaps, to suit the exigencies of the case.

One practice of commission men deserves the severest condemnation. They have a way of evening up sales, which is a poor method of encouraging shippers to send good stuff. For example, say they receive several shipments of spinach from one locality. Some of it may be selected stock and worth much more than the average. On the other hand, some of it may be correspondingly poor and sells below the average. The commission man, instead of remitting exactly as he receives his pay, will even them up. The man who sent the selected stock will obtain less than his goods sold for, while the man whose stock sold for less will receive as much as the average. This discourages one of the principal things which growers should do, selection and grading of their products. The commission man loses in the end because the practice keeps the stuff from one locality all down to a price level, which allows no profit and growers often become disheartened and cease shipping. Or, if they do ship, they make no attempt to send better stock than the average. Evening up of sales should be condemned from every standpoint and the sooner commission men stop the practice, the better it will be for them and for the produce business as a whole.

Too little care is exercised in handling. The injury done in this way is so serious that immediate investigation should be undertaken to modify or stop it. Receivers send ignorant handlers after their purchases and the way they are slammed around is enough to frighten one who understands what the effect will be. If the packages are not extraordinarily strong they are broken or damaged, and the contents are jammed. Often they are left standing or lying in the hot sun until they are wilted. Imagine a pile of crates of nice lettuce standing in the sun two or three hours. It is not difficult to estimate what the general result of that will be. And the same observation applies to all salad plants. No more care is exercised than if they were wood and couldn't will at all. And so it goes through the list. They all suffer in some way and the damage in the aggregate could probably be reckoned in hundreds of thousands of dollars in a season.

In the winter the same neglect results in damaging freezes and there is no redress. Much of the truck thus neglected must be thrown away and the grower must, in the last analysis, stand the consequences. These things require reformation. Not all receivers do that, but enough do to make it a serious matter and one that should be considered by the grower in preparing his shipments. If they can be put in crates or other receptacles which will prevent wilting when left in the sun, or freezing if left in the cold, then one fruitful cause of low prices will be removed. It is all a matter which ought to be carefully studied from both sides the side of the shipper and grower and the side of the receiver. If the third party is included—the consumer—the investigation will be that much better. It is an important matter, but so far as the observations of the writer go, one that has never been adequately understood by any of the factors interested in it. It is easy to criticise, but it would require the united wisdom of all those interested to formulate a plan which would be certain to be helpful. Perhaps that will be done in the future. Up to now it has never been attempted.

B. H. ALBEE.

New Jersey.

Some of the Western mills are declining to accept orders for apple boxes. This shows that the apple crop will be exceptionally heavy this year.

The "RAPID" Picking Sack

REASONS WHY APPLE GROWERS SHOULD USE THIS SACK

It is easy on the picker, as it can be buckled on two different ways, allowing relief from one continuous position.

With this sack held tight on picker he has both hands to pick fruit, instead of but one, while holding pail or basket with the other, and picks twice as much as by old method.

Does not bruise the fruit, as the heavy wire frame top part of sack holds it open. The bottom opens so fruit slides into box easily without being bruised.

Materials are of best grade throughout; best seamless sack; electric welded wire frame; re-tinned after made, so will not rust; extra heavy webbing which lies flat and does not curl up and cut the shoulders; riveted parts reinforced with leather, so will not pull out; triple thickness sack in front to take wear. In fact, the best we can make them for our own use.

This sack is the result of several years of use and improvement. This sack saves a dollar a day in speed and better quality of fruit. They will last for years, being practically indestructible.

$2.00 EACH, Cash with Order. Discount to Trade.

Manufactured and for sale by

UNDERWOOD & VILES

HUTCHINSON, KANSAS. Manufacturers Underwood Orchard Heaters. Apple Growers. Send postal for references from growers using this sack last year.

Fancy Apples For Sale

At Morrisania Ranch, near Grand Valley, Colo., we will have about 20,000 boxes of Fancy Apples for sale. Crop is mainly Jonathan, Mammoth Black Twig and Rome Beauty, with some Gano, Ben Davis and Missouri Pippin. Fruit has been well sprayed, thinned and promises to be of gilt-edge quality.

We will grade and pack these apples right, and would like to arrange with a responsible concern to handle the entire crop on f. o. b. basis, fruit to be packed under supervision of inspector representing the buyer.

These apples are grown at an altitude of about 5,600 feet above sea level, they ripen when nights are frosty and have the snap and crispness and the keeping quality of fruit grown in the Northern limits of the apple districts.

All reports indicate a shortage in the Jonathan crop this year, and any firm which has a demand for this popular variety can get about ten carloads of Jonathans in buying this crop.

Here is a chance to get a lot of fancy apples of most popular varieties, which should not be overloooked. Write for full particulars.

Morrisania Land & Orchard Co., Grand Valley, Colo.

PACKERS AND SHIPPERS ATTENTION

WE ARE HEADQUARTERS FOR

APPLE BARRELS

Also manufacturers of all kinds of Cooperage. Let us figure with you when ready to buy.

THE WEINRICH COOPERAGE CO., BURLINGTON, IA.

FOR SALE

ALBEMARLE PIPPIN ORCHARD. 1,100 bearing apple trees, 400 bearing peach trees, 110 bearing Damson trees. Prospects for 1,000 barrels of apples this fall. Will sell out complete and give immediate possession. For terms, write,

T. U. TAYLOR, BATESVILLE, VA.
Albemarle County.

MEDICINAL ROOTS—Golden seal, Senega, Pink Root, Etc. Easily Grown. Profits large. Send for prices. SELIGMAN PLANT COMPANY, SELIGMAN, MO.

TOO LATE FOR CLASSIFICATION

For Sale—Apple barrels, low prices. Queen City Cooperage Co., St. Joseph, Mo.

Young Man, would you accept and wear a fine tailor-made suit, just for showing it to your friends? Could you use $5.00 a day for a little spare time? Perhaps we can give you a steady job. Write at once and get beautiful samples, styles and this wonderful offer. Banner Tailoring Co., Dept. 739, Chicago.

Famous Springdale fruit district; fine apple crop in sight. These should appeal to men of means; 240 acres, few miles out; exceptional improvements; about 100 acres bearing apple orchard, balance strong grain land; $30,000. Also 180 acres edge of town, fine improvements; 60 acres bearing apples, 30 acres peaches, balance timber and pasture, including 16 acres alfalfa; $20,000. All investments and bound to grow in value. Terms and possession can be arranged. Fredericks Realty Company, Springdale, Washington Co., Ark.

Questions and Answers

Late Pruning of Peach Trees.

Would it injure peach trees to cut them back one-third now, as late as this (June 3)— I couldn't get hands to do it at proper time, and as we have not a peach, I was very anxious it be done, and if it will not do now, will it do to cut them in fall? I enjoy reading your paper, and wish it were in my power to have more of its suggestions carried out.—Reader, Elsberry, Mo.

Answer by Dr. W. L. Howard: The second week in June is entirely too late for cutting back peach trees as severely as they ought to be pruned this year, following the severe freezing they received last winter. However, I think it very probable that a large majority of the peach trees will die anyway, if not cut back, and this being the case, you could not make matters any worse by dehorning your trees now. On the other hand, by removing a great deal of the wood you might save their lives and cause them to take on a new growth. However, if the trees seem thrifty, or fairly so, as shown by a good growth of leaves, then I think I should let them go over until next winter before cutting them; but that would prevent you from getting a crop next year.

Spraying Questions.

We are trying to be very thorough in spraying this year. Sprayed with lime-sulphur solution, one and one-half gallons to fifty gallons of water; arsenate lead, three pounds to fifty gallons, dormant. Sprayed them just after fall of petals and in three weeks again, making three sprayings. Now, what are we to look for to be necessary to spray again? And if necessary, what material best to use? What is objection to lime-sulphur?

Found one wormy apple, and that the worm entered through stem end. Now this I cannot understand, as we spray blow end for codling moth eggs. Also please give explicit directions about spraying peaches, pears and cherries, and greatly oblige. Some orchards infested with canker worm, but none in ours. How do you account for it? One orchard was sprayed with London purple and orchard is nearly ruined by worms. Is there a law compelling spraying in Kansas?—F. F. W., Kansas.

Answer by Dr. W. L. Howard: It is impossible to know exactly how to dilute a lime-sulphur solution without testing it with a hydrometer to learn its strength. However, on the average, one and one-half gallons of the lime-sulphur to fifty gallons of water should be about right. My earnest advice would be for you to purchase an orchardist's hydrometer. You could secure one of these, together with a glass cylinder with which to use it, for $1.00 from the Bausch & Lomb Optical Company, Rochester, New York. Full directions come with each outfit.

You used your arsenate of lead a little more generously than we usually recommend. We never use over two pounds to fifty gallons of water or other spray mixture. Some people use only one and one-half pounds, although I think it is desirable to use two pounds.

You seem to have given the regular spraying before the blossoms opened; another application as soon as the flowers were off, and a third one three weeks later. If you used the arsenate for the last two applications, there should be little need of any more spraying, unless you are in a location where there is danger of bitter rot. If there are any signs of codling moth after the second and third sprayings, then it will be necessary to spray for the second brood of this insect again in early July. However, this season where spraying has been well done, there are no signs of codling moth, and hence a fourth spraying may be entirely unnecessary where there is no danger from bitter rot. In the southern counties of Missouri we always expect to spray with Bordeaux mixture and arsenate of lead for the codling moth and bitter rot in July. Lime-sulphur will not control bitter rot. After the apple calyx closes, which is within a week or two at most after the flowers drop, the codling moth are just as apt to enter through the stem end or the side of the fruit as anywhere else.

You speak of canker worms being rather abundant in some places. It is now rather late for this insect, so I think you do not need to fear its doing any damage. Your early sprayings probably kept your orchard entirely clear of this insect.

The parties who sprayed with London purple should not be surprised if they have insects of all kinds; this is an insecticide that is entirely out of date. In the first place this material quickly loses its strength, and even when fresh, it is not nearly so effective as arsenate of lead.

So far as I know there is no law in the state of Kansas compelling anyone to spray. However, you might inquire of Professor Hunter, State Entomologist, at Lawrence.

You ask for directions for spraying peaches, pears and cherries. Pears should be sprayed the same as apples.

Peaches are sprayed early in the season with the self-boiled lime-sulphur in order to control the brown rot. However, it is also necessary to poison the curculio insects in order to keep them from spreading the disease. The first spraying is given as soon as the calyx tube (shuck) has dropped from the little peach, using arsenate of lead paste, two pounds; lime, four or five pounds; water, fifty gallons. A second application should be given three weeks later, using one and one-half pounds of the arsenate of lead with the 8—8—50 self-boiled lime-sulphur. A third spraying should be given one month before the fruit is ripe with self-boiled lime-sulphur alone, using it at the rate of eight pounds of lime, eight pounds of sulphur to fifty gallons of water.

Cherries and plums are sprayed in much the same manner as peaches, except wit hcherries it is not feasible to give more than one application; that is, with the lime-sulphur and arsenate at about the time the calyx tube is being shed—any later sprayings would be apt to disfigure the fruit, which ripens quite early.

I am sending you a copy of our Bulletin No. 102, which will give you full directions for spraying.

No Preservatives Needed in Tomato Catsup.

Question: Please give directions for putting preservatives in tomato catsup and jams, such as benzoate of soda. Is it necessary to use these preservatives, in order to keep jams, catsup, etc., from spoiling? Could a private person put up catsups and jams under his own recipe and sell them in the open market, under the pure food law?—W. S H., Paterson, N. J.

Answer: It is not necessary to use preservatives, such as benzoate of soda, if proper methods of making catsups, jams, etc., are employed, and sentiment generally condemn the use of the same. A private person can market his own product under his own name, of course, and must comply with the pure food laws.

Transplanting Large Trees in Orchard.

Question: The writer will have to remove about 125 vigorous apple trees of standard varieties, eight or nine years old. Can trees of this size be satisfactorily transplanted to vacant places in the orchard? If so, how can the work best be done?

2. If these fillers cannot be successfully transplanted, would it pay to use dynamite in removing them? How much of the explosive would be required for each tree?

3. Would there be anything gained by using boxes instead of barrels for careful packing of Yorks, Ben Davis and Mammoth Black Twigs in an Eastern orchard?

4. Can you give any pointers on the construction of a cistern to secure from a large shed in the orchard enough water to use in spraying? How large a cistern will be needed to store enough water to spray fifteen acres?—Ova, Ohio.

Answer: We don t believe it is practical to transplant such large apple trees, and would prefer to plant young trees and push them to bearing age Of course, large trees are transplanted occasionally, for sentimental reasons or to get immediate effect, but it is hardly practicable as a commercial orchard practice

2. Dynamite can be used very satisfactorily, and half a stick at a shot should be sufficient to unroot the trees. The DuPort Powder Co., Wilmington, Del., and the Atlas Powder Co, Chicago, Ill, have booklets on this subject, and will give all desired information as to details.

3. We would not put Ben Davis or York apples in boxes: the former is hardly worth it, where barrels can be secured, and the York isn't an apple that packs well in boxes, because of its irregular shape Mammoth Black Twigs, if well grown and well colored, can profitably be put in the box

4. It is hard to say what size cistern you will need to hold water enough to spray fifteen acres, but it would be a mighty big one. Assume that you have sixty trees per acre, and that five gallons of mixture per tree will be needed for each application, and that four applications are made This would be twenty gallons per tree for the entire season, or 1,200 gallons per acre, so that a cistern of 18,000 gallons capacity would be needed for the fifteen-acre orchard. As the trees become larger more mixture per tree will be needed, and in some seasons more applications will be required. We would prefer to dig a well or two to furnish water supply, rather than to depend on water stored in a cistern.

Fertilizers for Strawberries.

Question: Is a commercial fertilizer which contains 10 per cent potash, 9 per cent phosphate and 2½ per cent nitrogen suitable for strawberries and raspberries? If so, when should it be applied and how much per acre?—M. C., Corydon, Ky.

Answer by Dr Whitten, Missouri Experiment Station: The inquiry of the correspondent is one which is being made by a large number of strawberry growers and one which data at hand renders it difficult to answer in a satisfactory way. The experiment station is now in the midst of some fertilizer experiments with strawberries in the Ozark region of Missouri. From our present knowledge I would say that on an average thin or well worn soil lacking in plant food generally, the fertilizer suggested by the correspondent ought to be a good one. It would probably be best to apply it at the rate of 100 pounds per acre and cultivate in between the rows just after the young plants are set, or on old beds it would probably be better to apply it and cultivate it in between the rows when the plants are being renewed after the fruiting season.

On some soils in South Missouri an application of fertilizer containing nitrogen has in some years been beneficial and in some years harmful to the product. It has increased the yield where there were no spring frosts to kill the early bloom. Where early spring frosts have killed the early bloom on nitrogen fertilized plots, the plants have not continued to put out a succession of late bloom, but have gone to making runners too quickly instead, so that an early removal of runners gives a stimulation rather than a late bloom and late crop of strawberries.

Where phosphates have been applied, at the rate of 75 pounds bone meal or acid phosphate to the acre, to the plants after they were set or after a fruit crop was off, beneficial results have been obtained in every case. Potash in our Missouri soils has yielded less in the way of results, but most of the soils worked upon are relatively higher in potash. That leaves us with the assumption that there is enough potash contained in the soil without the addition of potash fertilizer.

It might be well for the correspondent to write to the horticultural department of his own state experiment station as its officials would be better acquainted with any local conditions of his neighborhood than could one from another state

New Bulletins.

Transactions and Proceedings First Annual Meeting California Association of Nurserymen, Henry W. Kruckeberg, secretary, Los Angeles, Cal.

Planning and Adorning the Farmstead. Bul. 126, Iowa Exp. Sta., Ames, Iowa.

The Use of Explosives in Clearing Land. Bul. 216, Wisconsin Exp. Sta., Madison, Wis.

Practical Lessons from the Management of the University Dairy Herd. Bul. 217, Wis. Exp. Sta.

Report of the Director, Wis. Exp. Sta.

Wheat Breeding Experiments. Bul. 125, Nebraska Exp. Sta.

Diseases of Ginseng and Their Control. Bul. 250, Bureau of Plant Industry.

The Pasteurization of Milk. Cir. 184, Bureau Animal Industry.

Concentrated Lime-Sulphur Spray. Bul. 115, Pa. Exp. Sta., State College, Pa.

Effects of Alkali Water on Dairy Products. Bul. 132, S. D. Exp. Sta., Brookings, S. D.

The Pear Thrips. Bul. 343, N. Y. Exp. Sta., Geneva, N. Y.

Grape Leaf Hopper and Its Control. Bul. 344, N. Y. Exp. Sta., Geneva, N. Y.

Lime-Sulphur Wash. Bul. 198, Ont. Dept. Agr., Toronto, Ont.

Onions by A. McMeans. Bul. 199, Ont. Dept. Agr., Toronto, Ont.

Bee Diseases in Ontario. Bul. 197, Ont. Dept. Agr., Toronto, Ont.

The Agricultural Possibilities of the Canal Zone, Report 95, Office of the Secretary U. S. Dept. Agr.

Vegetable Growing in Alabama. Cir. 14, Ala. Exp. Sta., Auburn, Ala.

Potato Growing in Iowa. Extension Bul. 8, Iowa Agr. Col., Ames, Iowa.

The Soybean and Cowpea. Bul. 237, Ohio Exp. Sta., Wooster, O.

The Hardy Catalpa. Cir. 20, Kansas Exp. Sta., Manhattan, Kan.

The Avoidance and Prevention of Frost. Bul. 79, Nevada Exp. Sta., Reno, Nev.

Report Maryland State Horticultural Society, Vol. XIV, 1911, T. B. Symons, Sec., College Park, Md.

Farm Poultry. Cir. 118, Ohio Exp. Sta., Wooster, Ohio.

Cooperative Forestry Work. Cir. 119, Ohio Exp. Sta.

The Seed Corn Situation. Cir. 121, Ohio Exp. Sta.

Flour Mill Fumigation. Bul. 234, Ohio Exp. Sta.

The Climate of Ohio. Bul. 235, Ohio Exp. Sta.

Strawberry Notes for 1910-1911 by Green. Bul. 236, Ohio Exp. Sta.

Cross-Breeding Corn. Bul. 218, Bu. Plant Int., Washington, D. C.

Strawberry Culture. Bul. 6, Va. Truck Exp. Sta., Norfolk, Va.

Truck Crop Potatoes. Bul. 7, Va. Truck Exp. Sta.

Annual Report of Nebraska State Horticultural Society. C. G. Marshall, Secretary, Lincoln, Neb.

The Danger of Using Foreign Potato Seeds. Cir. 93, Bureau Plant Industry, Washington, D. C.

Orchard Spray Calendar. Cir. 34, Ind. Exp. Sta., Lafayette, Ind.

Orchard Heating. Bul. 154, Purdue Exp. Sta., Lafayette, Ind.

The Chestnut Bark Disease. Bul. 137, W. Va. Exp. Sta., Morgantown, W. Va.

The Pruning of Fruit Trees. Bul. 12, Ohio Dept. Agr., Columbus, Ohio.

Pear Thrips and Peach Tree Borer. Bul. 228, Cal. Exp. Sta., Berkeley, Cal.

San Jose Scale in Missouri. Bul. 98, Mo. Exp. Sta., Columbia, Mo.

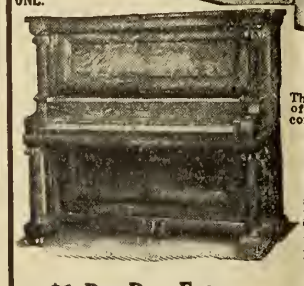
Farmers' Bulletins.

481. Concrete Construction on the Live Stock Farm.
483. The Thornless Prickly Pear's.
484. Some Common Mammals of Western Montana in Relation to Agriculture and Spotted Fever.
485. Sweet Clover.
486. Experiment Station Work.
488. Diseases of Cabbage and Related Crops and Their Control.
489. Two Dangerous Imported Plant Diseases.
490. Bacteria in Milk.
491. The Profitable Management of the Small Apple Orchard on the General Farm.
492. The More Important Insect and Fungous Enemies of the Fruit and Foliage of the Apple.

2 Automobiles Ten Pianos $2050 in Cash FREE!

Let Meredith Hand You a Check in Addition.

FREE TEN $465 PIANOS LIKE THIS ONE.



This is an actual picture of one of the checks sent to one of our contestants in a recent contest

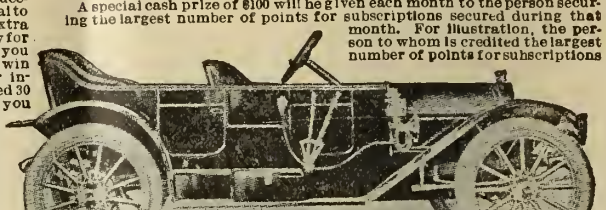
SEND NO MONEY! It will cost you nothing to get full information about this great $10,000 Prize Contest, and it will not cost you anything to enter it. I feel confident that you are interested because you surely would like to have one of these elegant pianos, one of the big, powerful, luxurious, four-cylinder $1650 Maytag Touring Cars, or some of these large cash prizes absolutely free. It is within your power to get one of these grand prizes free. It depends on yourself. The contest closes Oct. 31. By entering NOW you will have a better chance to win one of the grand prizes.

$1 Per Day Extra

Here is another big inducement that will surely appeal to you. You will receive an extra cash payment of $1 per day for each day of eight hours you work in the contest if you win one of the pianos. For instance, if you have worked 30 full days and win a piano, you will receive an extra cash prize of $30. If you work 90 full days and win a piano you will get an additional $90, etc. Please understand that this $1 per day to piano winners for actual time they work in the contest is in addition to any and all other cash and other prizes mentioned elsewhere in this announcement.

Special $100 Monthly Prizes

A special cash prize of $100 will be given each month to the person securing the largest number of points for subscriptions secured during that month. For illustration, the person to whom is credited the largest number of points for subscriptions secured during the month of August will receive the special cash prize of $100 for that month. How would you like to have one of these $100 checks like the one shown above?



Two of these Maytag Touring Cars given away.

I Will Help You

I will help you in this contest. I have planned several things that I will be glad to do to help you in this contest. I want to help you in every way that I can because I want you to succeed, and of course, I want this contest to be a big success. You may as well have the benefit of my help as not. Fill out the coupon and send it to me today. The day I receive it I will write you and tell you about the contest, including territory, regulations, etc, I will also tell you about the ways I shall assist you, and give you my reasons for making the contest so liberal. All this information is free. Send in the coupon or write me a letter or postal card today while the matter is in your mind, and you will hear from me by return mail, Send no money! Remember, it costs nothing to enter the contest. Simply send me the attached coupon and I will send you by return mail complete outfit and information.

As you read on I am sure you begin to feel that this is by far the most liberal contest that you ever heard of. It is liberal, and I assure you that I have good reasons for making it liberal. I will be glad to tell you what these reasons are when you send me the coupon.

Every Contestant Gets a Prize

There is still another feature of the contest that I know will please you. It is this: I guarantee a prize to you if you become a contestant and send in only one subscription other than your own, and do not receive a grand or special cash prize. This is what I call my "Surprise" and is sure to please you. Mail the coupon right now. You are bound to win a prize.

E. T. Meredith, Publisher Successful Farming
269 Success Building, Des Moines, Iowa

Please send me by return mail full information regarding your $10,000 prize contest and descriptions of the prizes you are going to give away. Also give me your reasons for making your contest so liberal.

Name _____

P. O. _____

R. F. D. _____ State _____

4 BUGGY WHEELS FREIGHT PAID STEEL TIRES **$8.75**

With Rubber Tires, $18.45. Your Wheels Rerubbered, $10.30. I make wheels ¾ to 4 in. tread. Tops, $6.50, Shafts, $2.10; Repair Wheels, $5.95; Axles $2.25; Wagon Umbrella free. Buy direct. Ask for Catalog Q

SPLIT HICKORY WHEEL CO., 530 F St., Cincinnati, Ohio.

CUT WEEDS IN PASTURES

Is your pasture producing as much feed as it should? Are the weeds abundant? If the pasture is all right in every way it is not following the law of the average, for 75 per cent of the pastures in the West are not producing nearly so much feed as they were 10 years ago. There has been a great increase in the common pasture weeds, and in buckbrush and trees. The pastures on the smaller farms have suffered especially in the last few years, because they have been overpastured more than the larger pastures. The heavy pasturing and tramping the ground has received has increased the washing of the soil, and there are more rocks on the surface than there used to be. Many pastures are not producing a good return on the investment.

The best month in which to kill pasture weeds is August, for the plants are not in so good a condition to withstand cutting then as they are earlier in the year. You should cut all of the weeds in the pasture this month, if the ground is not too rocky, and you can get the time. Set the cutter bar of the machine high so you will not clip the grass too much. If you will do this, the yield of grass will be much greater later in the fall, and the pasture will be in better condition next year. You can cut huckbrush with a mowing machine, if it is not too heavy and woody. If it is, you will, of course, have to use an ax. If you will cut the buckbrush, the grass will spread over the ground again, and it will produce as good crops as it did before the brush came in.

Rocks are much worse on the pastures of the country than they used to be. The tramping the ground has received has increased the washing of the soil, and more rocks come out on the surface every year. On most of the more valuable farm lands, it will pay to haul off the rocks and pile them in a ditch. In many of the live-stock communities, take for example in the prairie hay section of Southeastern Kansas, much of the pasture land is worth at least $30 an acre. If one-third of this land is covered with stones, and much of it is, you can afford to pay $15 an acre to remove these stones, for if the land was producing a full crop of grass it would be worth $45 an acre, based on the present price and two-thirds of a crop. Usually the rocks can be removed for much less than $15 an acre. After the rocks are once removed, they do not work to the surface rapidly, unless the ground is tramped and washes badly.

And next spring, don't begin to pasture the grass too soon. Much of the pasture crop is stunted every year by turning the farm animals on it too soon. Wait until the grass has reached a reasonable size, for the young, tender grass does not have a very high feeding value anyway, because of the high percentage of water it contains. Don't turn the animals on the grass too soon in the spring.

The poor returns from the pastures is one of the big losses on most of the farms of the Middle West. Farther East, farmers care for the pastures better than in the West, and they get much better returns. It will pay, and pay big, to put more work on the pastures, and get more grass of a better quality. First declare war on the weeds. August is the best month to kill them.

Curing Hay of Leguminous Crops.

Hay from the legume crops, alfalfa, clover and cowpeas, is hard to cure so it will make good hay, unless you go at it right. Cowpea hay, because of its large stems, is especially hard to cure properly. The principle on which the curing of hay is based is simple, and it is this: All you have to do is to reduce the moisture content of the hay from the high amount of water the plants contain down to the proper water content for good hay. In this process, it is essential that all of the plant shall dry out evenly. Good legume hay contains about 17 per cent of water, on an average.

All hay must be cured mostly in the shock or windrow, if the best quality of hay is to be produced. The hay should be raked into the windrow as soon as it has wilted well, in order to prevent the loss of the leaves. When the hay is cured in the swath, the leaves are cooked, and they crumble and fall off the stem while there is still a high moisture content in the stem of the plant. If the hay is raked after the leaves are well wilted they will continue to pump the water out of the stems, and all of the plant will cure out in a good, uniform manner, and there will not be much of a loss of leaves. The leaves of the legume hays, because of their high protein content, are the most valuable part. Good alfalfa hay, on an average, contains about 45 per cent of leaves and about 55 per cent of stems, by weight.

Most of the clover and alfalfa hay is allowed to stand too long before it is cut. After these crops have passed the proper stage for cutting, they become woody quite rapidly, and their feeding value decreases very fast. Cut alfalfa when about 10 per cent of the plants are in bloom, and cut clover sometime between the time of full bloom and when one-third of the heads are brown. Clover has the full amount of feeding value present at full bloom, but as the water content is so very high at that time, it is hard to cure. So if you have but a small patch, you should wait until about one-third of the heads are brown, but if you have very much to cut, you should begin sooner. On many of the farms of the corn belt, clover cutting, harvesting and corn plowing come with a rush along in June and the first part of July, and usually it is the clover that must wait. Much of it is allowed to stand until most of the heads are brown, and it then is nothing more than clover straw. Many farmers harvest a crop of clover straw every year instead of clover hay, and the feeding value of the crop never is what it might have been.

Cowpeas are mighty hard to cure, but as they are cut at a time when usually there is not a great amount of rainfall you can cure them properly if you manage things right. In most cases the best way to cure them is to rake after they are wilted, and allow them to cure for a week or more in the shock. Be sure the moisture content is reduced so it will be safe to stack, before you put them in the stack or the mow. And you will be mistaken about the moisture content on this crop more than any other crop you grow for hay. Be sure the stems are cured, and then stack the crop in small stacks, for if you don't, they may burn up by what an old darky called "spoonifus conbustus." You can't be too careful with cowpea hay.

Store all your hay in hay barns or sheds. If you don't have shelter for your hay, build a hay barn. You can make a higher rate of interest on money invested in hay sheds than in almost any other thing on the farm; perhaps money invested in machinery sheds would be an exception. After you have grown a good crop of hay, you can't afford to have this hay blown away by the wind and spoiled by the rain. The saving in the quality and quantity of the hay will pay the interest on the money invested in the sheds, and leave a mighty good profit besides.

Good Strawberry Yield.

Dr. O M. Huestis, Minneapolis, Minn., writes us that in spring of 1911 he set 200 Senator Dunlap strawberry plants, and permitted two plants to set from each mother plant, making 600 plants in all. This season he harvested 300 quarts of berries, and believes this is a yield worth reporting—and he is right, too.

Doctor Huestis says that the Delicious apple tree and Banner grape vine he received from The Fruit-Grower as premiums have done well and seem perfectly hardy in his latitude.

THIS PONY FREE

"C-H-U-M" is his name, and we are going to send him and his complete outfit as it looks in the picture below free to you or some other boy or girl. Pony, Harness, Buggy, Saddle, Bridle, all sent free, to your door, all charges paid. Send us your name today if you want "Chum."

HERE ARE THE NAMES OF 30 OF OUR 58 LUCKY PONY WINNERS

1. "Bob," John B. Corn, Jr., Pulaski Co., Ark.
2. "St. Nick," Marcella Conley, Chicaksaw Co., Ia.
3. "Tom," Helen Herrmann, Cuming Co., Nebr.
4. "Duke," Dorothy Lee Eagle, Jackson Co., Mo.
5. "Dixie," Walter McLaren, Moody Co., S. D.
6. "Trixie," Frank Harris, Yellowstone Co., Mont.
7. "Fritzie," M. and M. Parker, Knox Co., Ill.
8. "Jerry," Cleta Johnson, Douglas Co., Kans.
9. "Bingo," Jeanette Lansing, Knox Co., Nebr.
10. "Roine," Clarence F. Busick, Adams Co., Ind.
11. "Sonny," Elmer Hoth, Allamakee Co., Ia.
12. "Jim," Joey Edwards, Barton Co., Kans.
13. "Patsy," Rena Smith, St. Lawrence Co., N. Y.
14. "Gus," F. and Vera Brown, Dakota Co., Nebr.
15. "Sparkle" Eloise Savage, Codington Co., S. D.
16. "Empress," A. and O. Knight, Chickasaw Co., Ia.
17. "Brownie," Twylah Hart, Shelby Co., Ohio.
18. "Beauty," Bertram Eldridge, Stark Co., Ill.
19. "Fuzzy," Mary McMahon, Cavalier Co., N. D.
20. "Joe," Harold Palmer, Oswego Co. N. Y.
21. "Ginger," Chas. Foster, Randolph Co., Mo.
22. "Buster," Gifford Tures, Brookings Co., S. D.
23. "Happy," Harry Parker, Fergus Co., Mont.
24. "Jean," John H. Elrod, Smith Co., Tenn.
25. "Sportsman," H. A. Pierce, Waushara Co., Wis.
26. "Cheyenne," M. Hallett, Winnebago Co., Ia.
27. "Inez," Edwin Kobenstein, Goodhue Co., Minn.
28. "Evangeline," Gladys Houx, Saline Co., Mo.
29. "Scotty," Cath. Rohrbeck, Pacific Co., Wash.
30. "Midget," John McCartney, Massac Co., Ill.

Here's "CHUM"

And His Dandy Outfit

You'd Be Proud of Chum

"Chum" is a real Shetland Pony, three years old, 42 inches high, and weighs about 320 pounds. We selected him at the famous Heyl Pony Farm, at Washington, Illinois, where we had over 100 ponies to choose from. In lots of these towns where we have sent ponies free, our Lucky Pony Winners are the only children who own a real Shetland Pony in their town. Think how proud you would be driving "Chum" to school, and to the post office, and to church, and everywhere. You would be just the happiest child alive if "Chum" were yours. Didn't you ever notice what good times children have who own ponies, and how pretty these cute little fellows look trotting up the road? Everybody runs to the door and stops to look at a Shetland Pony going by. Can you think of anything you would like to own better than "Chum?" Read this page through carefully and then send us your name and address at once.

1000 Votes Free

If you send us your name and address right away we will at once send you 1,000 votes free toward winning "Chum." See what a fine start these free votes will give you, and if you follow our directions and do as these 58 other boys and girls did, you will have just as good a chance to get "Chum" as they had to get their ponies, and none of our Lucky Pony Winners nor their brothers or sisters can get "Chum." But you have a chance to get him if you send us your name and address today. Boys and girls who write us quickest are generally the luckiest in winning our ponies. Cut out the coupon good for 1,000 free votes, write your name and address on it, paste it on a postal card or put in an envelope and mail it to us today.

Cut Out and Sign This Coupon and Mail Today. Do It Now.

GOOD FOR 1000 FREE VOTES!

THE FARMER'S WIFE, 526 Webb Bldg., St. Paul, Minn.
Please record me as one of your FREE voters for "CHUM," and send me your Certificate and full particulars how to take care of Shetland Ponies and feed them. I intend to own "Chum."

Name _____

Postoffice _____

R F D _____

State _____

Just as soon as we hear from you we will send you the coupon good for 1,000 free votes, enter your name in the contest, and tell how to take care of Shetland Ponies and feed them. And we have a surprise for you which will double your chances of getting one of our Shetland Ponies free. The work we require you to do to become a registered contestant for "Chum," is something that pretty near any boy or girl who could drive a pony can do, and we promise every contestant a fine prize of his or her own selection.

Your Best Chum "Chum" is the pony's name and he's the best chum you or any other boy or girl could ever have. "Chum" is not like your other chums. He's always around when you want to play with him. He will learn to know you and come a-running when you call or whistle. He's never too tired for a canter in the saddle or to be harnessed up to his nobby pony wagon which we also send free, and he will carry you and all your boy and girl friends just about as fast as you would want to go.

Don't Let Anyone Persuade You That You Cannot Win "Chum"

Probably some folks will tell you that we won't give you "Chum," just like people told these other 58 boys and girls, and if you believe these people you'll never be one of our Lucky Pony Winners.

But the bankers or the postmasters in their towns told these other 58 boys and girls that the Webb Publishing Company, publishers of The Farmer's Wife, is one of the largest Publishing Companies in the United States and that of course we could afford to give away so many ponies and outfits to boys and girls to advertise our paper. So these 58 boys and girls sent us their names and addresses and won their ponies, and you will have to send us your name and address if you want us to send "Chum" to you. Wouldn't you rather be one of our Lucky Pony Winners and believe that we give away ponies? If we didn't give away ponies free the editor of this paper wouldn't let us print this advertisement. But you know we do give them away, so you must send us your name and address if you want "Chum," and we will help you right away by giving you 1,000 votes free roward him.

THE FARMER'S WIFE
526 Webb Bldg., ST. PAUL, MINN.

Fruit Crop Reports For July

All reports concerning the 1912 apple crop, agree that the prospective crop, including all sections where apples are grown commercially, has deteriorated since The Fruit-Grower's reports for last month were published. The government's reports, as well as those from Fruit-Grower's correspondents, agree as to this. It is hard to ascertain to what extent the crop has been injured by drouth, by insects and by apple scab, or the extent to which this injury will continue.

It is generally believed by those who are studying the situation, that next month will show still further decline in the condition of the crop. In parts of the country the weather has been very dry and apples have not grown as they should have done; in other sections apple scab is more injurious than usual, and conditions have been ideal for the spread of the disease; in still other sections the crop has been overestimated, for the reason that many trees are too full of fruit and apples will be small at harvest time.

In sending out crop-report cards this month we asked correspondents if buyers are talking prices. No one reports any prices having been made, but all agree that buyers are talking big crop and correspondingly low prices. Many of them claim that the apple crop for 1912 will be the largest since 1896. While it seems that the crop will be larger than for several years just past, our reports do not indicate a crop equal to those of 1902 to 1904, which were over 45,000,000 barrels per year, nor is it believed the yield will equal the 48,000,000 barrel crop harvested in 1900.

It is very evident that the marketing of the 1912 apple crop will be a ticklish business, because of the great difference of opinion which seems to exist between the buyers and growers. It is also very evident that conditions are such that what now promises to be a very large apple crop may shrink to a very ordinary crop before harvest time, because of the conditions which exist in many of the best apple-producing sections. By next month a better estimate of the crop can be given, and perhaps one can get a line on prices at that time.

One thing seems evident, and that is that the Jonathan crop will be light throughout the Middle Western states. Buyers agree that this variety will be short and say that prices should rule strong, as compared with prices for other varieties. It is also evident, if statements of buyers are to be believed, that they will not buy at any price a lot of the wormy, scabby apples which are likely to be offered to them at harvest time. If buyers will persist in this stand, then really good apples should bring fair prices this fall.

Some of the best fruit-producing sections of the country are not represented in our reports this month, simply because cards which were sent to correspondents in those sections were not filled out and returned promptly. The Fruit-Grower wants to make these crop reports as helpful as possible, but in order to do so we must have the co-operation of our readers. We cannot report crop conditions in your neighborhood. If your section is not represented, send us the name of some good person to act as correspondent, and we will send return postal cards for reports every month. Let us work together to make these reports as complete as possible, so that they may be most helpful to those who have fruit crops to market.

The Government's Report.

The Crop Reporter of the United States Department of Agriculture for July shows a deterioration in the apple crop throughout the country, the average condition declining from 72.3 per cent of full crop to 67.9. The reduction really amounts to more than this, however, as will be seen by studying the following table, which shows condition on July 1, on July 1 last year, and also on June 1, 1912. This table shows that since June 1 there has been improvement in a number of states and a loss in others, and it should be borne in mind that the improvement is amost wholly in states which produce few apples commercially, especially some of the Southern states. The great apple-producing states, except Virginia and West Virginia, all show a loss of condition over June 1; New York reports a decline of 11 points, Pennsylvania 9, Illinois 3, Missouri 2, and so on. This fact should be borne in mind in considering the government's table.

The government's experts report that giving due weight to the importance of the apple industry in the various states, the crop for this year promises to be larger than for several years past, but no reports indicate a crop approaching the record crop of 1896. This report says: "The condition of the crop on July 1, compared with average condition (not normal) on July 1 of recent years, was as follows: Apples, 115.9."

This does not mean, it will be noted, 115.9 of a full crop, but using 100 to represent the average crop of recent years, the 1912 crop is 115.9.

The government's report, tabulated, is as follows:

	Condition on		
State—	July 1, 1912.	July 1 1911.	June 1, 1912.
Maine	80	86	93
New Hampshire	76	70	90
Vermont	80	73	96
Massachusetts	76	76	85
Rhode Island	74	75	77
Connecticut	74	77	75
New York	76	70	87
New Jersey	60	73	75
Pennsylvania	57	73	66
Delaware	78	50	77
Maryland	68	61	73
Virginia	80	40	75
West Virginia	77	57	75
North Carolina	75	37	80
Ohio	53	73	55
Indiana	45	60	51
Illinois	47	62	50
Michigan	69	57	81
Wisconsin	48	72	67
Iowa	28	78	33
Missouri	78	49	80
Nebraska	62	52	67
Kansas	75	37	80
Kentucky	67	46	67
Tennessee	72	37	70
Oklahoma	82	44	78
Arkansas	77	47	81
Montana	94	80	96
Colorado	76	65	85
New Mexico	77	75	82
Utah	96	50	99
Idaho	94	82	99
Washington	88	72	96
Oregon	90	66	92
California	86	72	93
Average for U. S.	67.9	57.9	72.3

It will be noted that the government's report gives the condition of the apple crop, taking the country as a whole, as exactly 10 points better than on same date last year. If the crop of 1911 amounted to 33,000,000, as has been stated, then the crop of 1912, from these figures, should amount to nearly 39,000,000.

The Fruit-Grower's Reports.

Reports from The Fruit-Grower's special correspondents in different states, are as follows, these reports having been made out from July 17 to July 20, in most cases:

Arkansas.

Decatur.—Apple crop about 45 per cent of full crop, or 15 per cent better than last year. Crop is showing up better than expected, but unsprayed fruit shows scab. Jonathan, Grimes and Maiden Blush are fine.—E. N P.

Siloam Springs.—Three-fourths of apple crop indicated, much larger than last year. Few worms, but considerable scab.—H. W. H.

Imboden.—Half crop of apples, which is better than last year. Early apples about all sold at 50 to 65 cents per bushel.—J. R. C.

Jonesboro.—Three-fourths of full crop of apples, which is about same as last year; quality generally good. Red raspberry and blackberry crops best for years; cannery badly needed.—H. M. C.

Garfield.—About half crop of apples, which is more than last year; quality good in sprayed orchards; no worms and but little scab.—W. B. F.

Bentonville.—About 40 per cent of crop, or double last year's yield. No worms, but scab is very bad. No prices yet, but growers want $2.50 to $3 barrel for Jonathan apples delivered on packing table.—C. H. C.

Booneville.—Half crop of apples, but worms and disease have injured the fruit greatly.—W. F. O.

Farmington.—One-half to three-fourths crop of apples, which is more fruit than we had last year; unsprayed fruit has been injured by insects and disease, and many Ben Davis apples are ill-shaped on account of cold rains and heavy winds at blooming time.—A. T.

Cecil.—Full crop of apples, which is much better than last year. Insects and disease have lowered quality considerably.—J. T. T.

Ozark.—Three-fourths crop of apples, which is much better than last year; quality generally good. Will have 4,000 to 5,000 barrels to ship from here.—W. H. S.

Mena.—Good crop of apples here, much better than last year and of better quality. Winter apples growing nicely and of fine quality.—A. H. B.

Colorado.

Grand Valley.—About 90 per cent of apple crop here, which is somewhat better than last year. Quality very fine; in fact, it is hard to find a wormy apple in the orchard. Should have about 20,000 boxes of very fine apples, half of which will be Jonathan, Rome Beauty and Mammoth Black Twig.—E. H. F.

Canon City.—Half crop of apples, which is much better than last year; some parts of the valley, however, have no apples whatever, on account of injury by leaf roller. Apples doing well, but is about three weeks late.—M. E. S.

Palisade.—All varieties of apples are full except Winesap and Mammoth Black Twig. Quality good, being more free from worms than usual. Full crop of peaches and pears.—J. H. D.

Lebanon.—About 90 per cent crop of apples, or about same as last year. No insect injury and no disease. We will have about fifty cars of high-grade apples.—S. H. P.

Hotchkiss.—Nearly full crop of apples here, shortage being in Winesap, Mammoth Black Twig and in a few orchards Ben Davis. Quality very good. No prices yet, hut it is believed prices will rule lower than last year.—T. P.

Delta.—About 75 per cent of full crop, which is more apples than we had last year. Quality fine.—L. W. S.

Idaho.

Payette.—About 90 per cent of full crop, or a great many more apples than we had last year. So far, quality is excellent.—T. A.

Caldwell.—Full crop of apples; more fruit than last year. Hail in this immediate vicinity did much damage, and blight in some orchards has cut crop down somewhat.—C. H. R.

Illinois.

Creal Springs.—Half crop of apples here; quality good. Buyers are paying $2.50 to $3 barrel for summer apples, f. o. b.—L. J. R.

Quincy.—Apple crop is short, not more than half as many as last year; quality generally good. Dry weather may shorten the crop. Pears about one-fourth crop; grape crop good.—W. H. P.

Neoga.—Sprayed orchards have nearly full crop, but unsprayed orchards have very little fruit.—H. A. A.

Plainville.—Three-fourths of apple crop, which is one-fourth more than last year's crop; considerable injury by insects and diseases; spraying is not general here.—J. C. B.

Alton.—One-fourth crop of apples, or about same as last year; quality good, except that many orchards have scale.—E. A. R.

Carmi.—Half crop of apples, which is much better than last year; quality fair.

Batchtown.—About 70 per cent of apple crop, or considerably better than last year; sprayed orchards have fine fruit, unsprayed orchards very poor quality.—B. T. D.

Indiana.

Lafayette.—Prof. C. G. Woodbury has reports covering the state showing that Indiana has about half a crop of apples this year, southern part of the state making the best showing.

Lawrence.—Apple crop about 20 per cent of full crop, as against 75 per cent of full crop last year; quality variable, for scab has been very bad in unsprayed orchards.—W. B. F.

Mitchell.—About 90 per cent of apple crop, or twice as many as last year; some scab and blotch attacking fruit, few worms.—J. A. B.

Marshall.—About 10 per cent of apple crop; last year trees were over-loaded. Our crop is not only short, but scab, worms and bitter rot are getting what apples we had early in the season.—T. T.

Iowa.

Des Moines.—A summary of reports covering all parts of Iowa show that the apple crop is very short, winter apples promising only 17 per cent of crop, summer varieties 21 per cent and fall apples 20 per cent. Many trees, especially Ben Davis, are in bad condition.—W. G.

Hamburg.—About 55 to 60 per cent of apple crop, which is 60 per cent of last year's crop; unsprayed orchards have suffered injury, sprayed fruit of good quality.—J. M. B.

Council Bluffs.—About 25 per cent of apple crop, which is perhaps one-fourth what we had last season; apples dropping badly. More boxes will be used as packages this year than heretofore.—J. A. A.

Harlan.—Not over 15 per cent of apple crop, which is 65 per cent less than last year; what apples set on trees are dropping badly; weather very dry.—W. M. B.

Ames.—About 30 to 50 per cent of apple crop, or about half last year's yield. Quality not good, worms being bad in unsprayed orchards, scab being bad in Central and Eastern Iowa, and blotch in Southwestern Iowa. Southern Iowa, where most of our apples are grown, has 40 to 50 per cent of full crop; some varieties, notably Jonathan, having very light crop.—L. G.

Glenwood.—Forty per cent of apple crop, which is not so good as last year; dry weather is causing a heavy drop of Ben Davis; quality not good in some orchards.—S. H. P.

Williamsburg.—Apple crop about 20 per cent of full yield; many trees injured by winter. Dry weather is checking growth of apples.—F. I. H.

Kansas.

Sabetha.—Apple crop about 80 per cent—last year's crop was almost a failure; quality generally good.—J. J. H.

Mound City.—Apple crop 'way above average, best for several years; quality generally good. Grapes doing fairly well; potatoes good crop.—W. S. K.

Bethel.—About 60 per cent of crop, as against no apples last year; quality generally good.—J. G.

Edwardsville.—About one-fourth apple crop, or less than last year; crop will be less than estimated earlier in season, for Ben Davis and Jonathan, our leading varieties, are very light, and all varieties are badly stung.—E. T.

It Pays to Clear Land

WITH

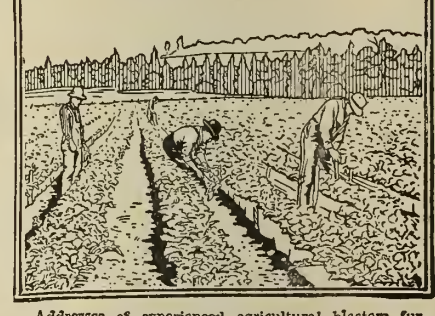
DU PONT Red Cross Dynamite

The upper view shows how groups of big stumps are blasted out clean at one time, with all dirt off the roots and stumps shattered into kindling wood. At the same time the subsoil is thoroughly broken up, creating a fine home for the new crop. Lower view shows a celery crop worth $800 per acre ten months after stumps were blasted out.

Booklet Free

To learn how progressive farmers are using dynamite for removing stumps and boulders, planting and cultivating fruit trees, regenerating barren soil, ditching, draining, excavating, and road-making, write now for Free Booklet—"Farming with Dynamite, No. 35"

DU PONT POWDER CO.
PIONEER POWDER MAKERS OF AMERICA
WILMINGTON, DEL.



Addresses of experienced agricultural blasters furnished on request, if desired. DuPont Powder Co.

DID YOUR BERRIES PAY EXPENSES This Year

If you had common varieties, and gave the plants extra good care, maybe you made a little money—but you worked mightty hard for it, didn't you? Why not make more money next year, with less work? You can if you plant the right kinds—those I tell about in my "Berry Book." Seven hundred dollars has been made from one acre of my plants!

You will save one year by planting Berries this fall. The soil works easier now than in spring; the plants will be rooted and ready to start early, which means strong growth in hot weather, and

Berrydale Plants Set This Fall Will Bear Fruit Next Summer.

Himalaya Berry. Like a blackberry, but not a blackberry; strong grower; bears first year; 16,000 quarts, worth $2,400.00, picked from 500 two-year plants.

Golden Drop Gooseberry. Big as a Richmond cherry. Thin yellow skin. Flavor rich and sweet. Plants strong and compact. Fruit ripens latter part of June.

Mitting's Whinhams Gooseberry. The largest Gooseberry known. Creamy green when ready for market; deep red if left to ripen on bush. Write today for my Berry Book, and get ready to make some money next summer.

A. MITTING, Proprietor
Berrydale Experiment Gardens, Fruit Ave.,
HOLLAND, MICHIGAN

In writing advertisers please mention The Fruit-Grower.

Rubber Stamps

You need Rubber Stamps for marking berry boxes, crates, stationery, etc. Send for free catalogue.

Gardner Office Supply Co. SPRINGFIELD MISSOURI

PEACH SEEDS FOR SALE

1911 AND 1912 STOCK. Write for Prices and Samples.
THOS. R. HAMAN, 1614 Oliver Sreet, Baltimore, Md.

Hiawatha.—Half crop of apples, which is much better than last year; quality good.—J. A. J.

Hutchinson.—We will have twice as many apples as last year; unsprayed apples showing injury by worms.—W. H. U.

Leavenworth.—Apple crop of this section bids fair to equal if not surpass any crop of recent years. Conditions favorable, and quality good.—E. J. H.

Council Grove.—Half crop of apples, or about the same as last year; some injury, especially by apple blotch. I will have over 4,000 boxes of apples free from insects and disease.—J. S.

Cedarville.—About as many apples as last year, which was a very light crop; not many orchards here.—B. F. T.

Kentucky.

Bardwell.—Sixty per cent of apple crop, which is better than last year; unsprayed orchards show injury, but more spraying was done this year than ever before.—G. G. W.

Lewisport.—About 45 per cent of crop here; with hot, dry weather, apples have dropped badly. Buyers are talking bumper crop and low prices.—E. N. A.

Massachusetts.

Amherst.—About 80 per cent of apple crop, or better than last year. Quality generally good; weather very dry.—F. A. W.

Ipswich.—Sixty per cent of apple crop, a trifle better than last year; insect injury is apparent, and tent caterpillar and gipsy moth have played havoc with fruit trees, and drouth has been still worse. Few peaches and plums, few blackberries and plenty of grapes.—A. F. T.

Rowley.—Half crop of apples, which is about what we had last year; quality fair.—J. H. W.

Michigan.

Clare.—But few winter apples here, but summer and fall varieties have good crops.—J. R. H.

Clinton.—Apple crop is very large; trees are overloaded and unless thinned will break down and apples will run small.—D. W.

Coloma.—Late apples promise 75 per cent of crop, Baldwin and Spy crops being much better than last year. Early varieties very short. Bartlett pears light crop, Kieffer good.—A. B. B.

Parma.—About one-fourth of apple crop. My neighbor, who had 4,000 barrels last year, estimates his crop at one-fifth that quantity, but I think this is too low. Quality generally good.—O. S. L.

Allegan.—Half crop of apples, or one-fifth more than last year; scab quite bad in some orchards, and will reduce crop of good apples. Fair prices for good apples are expected.—W. A. S.

Holland.—Where orchards were well sprayed they have about 75 per cent of crop of good, clean apples, which is slightly more than we had last year; unsprayed orchards have practically nothing.—R. M.

South Haven.—About 20 to 30 per cent of apple crop; much less than last year. High winds caused heavy drop.—F. F. F.

Douglas.—About 80 to 90 per cent of apple crop, which compares with last year's crop as 4 to 1. Quality good, orchards generally being sprayed.—T. S.

Copemish.—About half crop of apples, or less than we had last year; some growers not spraying as they should, and quality in such orchards is poor.—L. L. M.

East Jordan.—About 40 per cent of crop of apples, which is somewhat more than we had last year; scab quite bad in unsprayed orchards, but more spraying has been done this year than ever before, and quality generally will be better. Extreme dry weather in June and early in July caused heavy drop.—E. H. C.

Missouri.

Columbia.—Apple crop for the state promises 66 per cent of crop at this date (July 9), as against 37.5 per cent at same date last year. Codling moth, scab and blight are bad in neglected orchards, and unfortunately, not enough orchards are given proper care. Spraying this season has produced excellent results.—W. W. C.

Cape Girardeau.—About 60 per cent of apple crop, which is much better than last year. Summer apples selling from $1 to $1.25 bushel.—L. R. J.

Parkville.—About 60 per cent of apple crop, or double last year's yield; quality good. Estimate of 74 per cent of crop for Northwest Missouri, as made from Columbia, is too high, I think.—J. H. D.

Columbia.—Crop around here promises 70 per cent of full yield, which is better than last year; quality good. Crop here is more general and of better quality than for many years.—J. C. W.

Lebanon.—Seventy per cent of crop here, which is 50 per cent better than last year; quality good in sprayed orchards, in orchards not sprayed not more than 20 to 30 per cent of apples on trees will be worth packing. Where sprayed, apples will grade 90 per cent fancy; few worms, but lots of scab.—A. T. N.

Seymour.—Half crop of apples, which is more than we had a year ago.—S. L. W.

Ozark.—Three-fourths crop of apples; better crop than last year; quality fair, about 15 per cent of apples being wormy.—J. H.

Pilot Grove.—One-half crop of apples; quality good where sprayed, poor where unsprayed.—J. E. S.

Skidmore.—From 15 to 25 per cent of crop of apples here, which is from one-fourth to one-third what we had last year; quality generally poor, for too many orchards are unsprayed. Very dry and apples have dropped badly.—W. W. G.

Marionville.—About 60 per cent of apple crop, or double what we had last year; well-cared-for orchards have fine fruit, unsprayed orchards very poor.—W. T. F.

Richland.—Full crop of apples, 25 per cent better than a year ago; quality generally good. Fine opening for buyers here.—E. A. S.

Mount Pernon.—About 80 per cent of apple crop here, or double last year's crop; quality good where sprayed, otherwise very poor. Indications are for the best crop in years in sprayed orchards, but insects and worms will get most of the apples in unsprayed orchards.—J. C. T.

Poplar Bluff.—Less than half crop, less than we had last year.—J. N. H.

Springfield.—About 75 per cent of apple crop, or 50 per cent more than last year; unsprayed orchards have 50 per cent of apples scabby; sprayed orchards generally clean and smooth. Prospect is for lower prices than last year for good apples, and scabby fruit will go to cider mills for a song. Dust spray a failure here this year.—W. A. I.

Cedar Gap.—About 80 to 90 per cent of apple crop, which is much greater than last year; no worms, but some scab on certain varieties. Conditions have been favorable, and crop will develop better than usual.—L. E.

Brookfield.—About 65 per cent of crop; some injury by disease and insects.—L. D. K.

Pleasant Hill.—Good apple crop here; a few worms showing up.—A. D. L.

Rocheport.—Apples dropped badly, but we have about two-thirds of crop left. About an average crop on old trees, and a good crop on all young trees. Large orchards are all well sprayed. I have 100 acres with the best crop I have ever had.—G. W. R.

Rogersville.—About 60 per cent of crop, or twice as many as last year; quality poor in unsprayed orchards, and some scab and blotch in sprayed orchards.—A. W. H.

Nebraska.

Pawnee.—About 80 per cent of apple crop, which is much better than last year. Worms have caused some injury, but dry weather more.—J. M.

Johnson.—Ninety per cent apple crop, or five times as many as last year; quality poor in unsprayed orchards, good quality where sprayed. Winesap, Gano and Ben Davis trees are full; very light crop of Jonathans.—G. S. C.

Falls City.—Three-fourths of full crop of apples; much better than last year; quality generally good.—A. F.

Table Rock.—Three-fourths crop of apples, or 10 per cent better than last year; quality good. Dry weather has caused summer apples to be under-size; they are selling for $2.50 barrel.—O. D. H.

New Jersey.

Hammonton.—This section has by far the largest peach crop we have ever had. Shipment of Elbertas should start about August 20; 300 cars expected. Nearly all growers use the summer spray.—W. H. P.

New York.

Medina.—Crop mostly Baldwins, and we have more apples than last year.—C. A.

Albion.—About 85 per cent of apple crop; last year, 55 per cent; no serious injury from insects and disease. This is for the lake counties, from Oswego to Niagara.—J. S. B.

Valois.—About same crop of apples as last year; quality good.—K. M. C.

Halls.—About 60 per cent of apple crop, not as many as last year; quality good.—T. B. W.

Penn Yan.—Sixty per cent of crop, which is more than last year. Quality good; plenty of rain, and apples are of good size.—R. L. E.

Jay.—Three-fourths of apple crop, not nearly so many as last year; some injury by insects and disease. A very late, cold spring, and in some sections heavy frosts, injured fruit.—T. T. S.

Adams Basin.—Half crop of apples, about same as last year; quality generally good. I don't think the county has any more apples than last year.—C. O. B.

Ballston Lake.—Half crop of apples, or twice as many as last year; some injury by worms. Set in many orchards was light and some growers report heavy June drop.—G. R. S.

North Carolina.

Taylorsville.—Fine crop of apples in this section, perhaps 90 per cent of full crop; quality good.—W. T. R.

Gahanna.—About one-fourth of crop of apples; one-fourth of last year's yield. Scab is worse this year than last.—C. E. D.

Batavia.—About one-fourth crop of apples, less than half what we had last year; many worms and scab is very bad in unsprayed orchards and even in some orchards which have been sprayed.—J. H. D.

Gypsum.—About 70 per cent of apple crop, or some as last year; some hail injury and some codling moth, no disease. Peaches are our great crop here, and it will be a good one; probably 10 per cent of trees were injured by the cold winter.—W. M.

Proctorville.—About 70 per cent of apple crop, or four times as many as last year; quality fair to good, scab being found in unsprayed orchards.—U. T. C.

Middleport.—Half crop of apples, larger than last year; quality good in sprayed orchards. Peaches, half crop.—G. E. C.

Oklahoma.

Ada.—Three-fourths of crop of apples, but codling moth will get half of them. Not much spraying done, and some of us who did spray were not early enough to catch worms.—J. R.

Big Cabin.—Full crop of apples, or double last year's crop; quality very poor in unsprayed orchards.—R. L. M.

Salisaw.—Not many apples grown here, but crop is good. Summer apples selling at $1 bushel.—E. V. D.

Norman.—Three-fourths of crop of apples, which is more than we had last year; more growers spraying and quality will be good.—M. W.

Tahlequah.—Half crop of apples; insects and diseases worse than usual. It seems almost impossible to protect apples against insects and diseases here, while with peaches we have full control.—D. N. L.

Guthrie.—Three-fourths of crop of apples, or 50 per cent better than last year; quality good. The loss of trees last year by drouth reduces our apple crop to barely enough to supply home demand.—G. E.

Pondcreek.—About 60 per cent of apple crop, which is a little more than last year; quality generally good, although some orchards have been hurt by hail.—J. T. E.

Sterling.—Half crop of apples; quality good.—J. G. M.

Chandler.—Sixty per cent of apple crop, which is better than last year; quality good.—J. S. D.

Oregon.

Mosier.—About 66 per cent of apple crop, double last year's yield. Crop promises to be fine quality as to color and size and output will be rigorously graded. Ask Fruit-Grower correspondents if wider co-operation is favored, or if it is being tried.—A. P. B.

Hood River.—Apple crop is from 60 to 75 per cent of full crop, which is three times as many apples as we had last year, and 15 to 20 per cent more than in 1910. Quality fine.—E. H. S.

Cove.—About 85 per cent of apple crop, or four times as many as we had last year. Qualtiy promises to be good, although scab is affecting about 15 per cent of crop.—K. J. S.

Clackamas.—Better apple crop than last year, perhaps 90 per cent of full crop.—E. R. B.

Pennsylvania.

Mifflintown.—Apple crop is very short, not one-fourth of last year's crop; quality good where well sprayed. Apple crop promises to be fair, but fruit generally dropped off.—T. B.

Light Street.—Half crop of apples; quality medium, codling moth being very bad.—H. A. T.

Harrisburg.—One-half of last year's crop; quality good where fruit was well sprayed, unsprayed fruit very poor. Most varieties bloomed full, but failed to set, on account of cold, wet weather during blooming time.—H. F. H.

Vermont.

Middlebury.—Apple crop much larger than last year, but insects have been very bad. Hard to estimate crop, as unsprayed fruit is dropping badly, but the few growers who have sprayed have good crops. My own trees are hanging full of the finest fruit ever.—C. L. W.

Bellows Falls.—Not over 20 to 25 per cent of apple crop, or 50 to 60 per cent less than last year; quality poor, and many trees were injured by extreme cold weather last winter. Apple crop is generally light, no pears, plums or cherries.—A. A. H.

Vergennes.—About 70 per cent of apple crop, which is much larger than last year; insects and diseases are affecting crop somewhat. Tent caterpillar has done more damage than usual, and blight and June drop have also reduced the crop.—A. T. C.

Virginia.

Crozet.—Reports covering entire state of Virginia indicate a crop of about 65 per cent. Crop looks more promising than when bloom fell, and though the crop will not be as large as two years ago, it promises to be a good one, pretty well distributed throughout the various fruit sections. We should have better crop than last year. Buyers are talking low prices and tell of great crops in all parts of the country this year.—W. W.

Callaway.—Apples promise good crop, with but few worms and little scab; crop is twice as large as last year. I have never seen apples larger or in better condition than at present.—S. G.

Staunton.—Three-fourths crop of apples, which is 50 per cent better than last year; quality good. Season is a few days earlier, and size better than usual for this time of year.—W. A. McC.

Waynesboro.—About 65 per cent of apple crop, or twice as many as last year; worms are bad and some scab. I look for a heavy depreciation in the apple crop at picking time, on account of worms, for they have been hatching continuously, and most growers have not sprayed enough.—J. C.

Washington.

Selah.—Full crop of apples, of fine quality, although blight is injuring some orchards.—E. H. P.

Snohomish.—About 80 per cent of apple crop, which is one-third more than last year. No worms, but some scab.—E. C.

Clarkston.—Probably 95 per cent of apple crop, which is four times as many as last year. Quality good. This section has limited acreage of trees in bearing, but will ship more apples than ever before.—H. J.

Cashmere.—Full crop of apples here, or twice as many as last year; quality very good.—M. H.

Kennewick.—About 80 per cent of apple crop here, or double last years' crop.—E. M. S.

North Yakima.—Apple crop promises unusually good; quality fine. Fine crop peaches, half crop pears.—W. F. M.

West Virginia.

Palestine.—About 60 per cent of apple crop, or same as last year; quality generally good.—J. M. D.

Martinsburg.—About half as many apples as last year.—N. T. F.

Cave vs. Cold Storage.

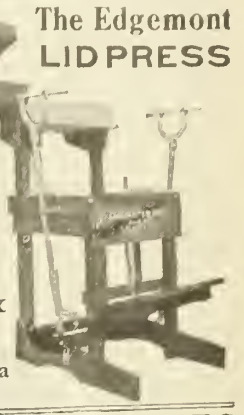
I am selling apples at $1.25 per bu. this first day of May. Cave holding 3,000 Bu. for $500. Cave will last forever. Guaranteed to keep fruit. Ventilation perfect. For plans write to W. T. Swan, Auburn, Nebraska.—Adv.

POOR ORCHARDS MADE GOOD

Six years ago one-half the trees in the orchard of the Fairview Orchard Company, Kearneysville, W. Va., were tagged by the Inspector, who reported it the worst scale-infected orchard he ever saw. After four years' use of "Scalecide" exclusively as a Winter wash, the same orchard is pronounced one of the cleanest in the State, and produced in 1910 over 11,000 barrels of apples, which sold for over $29,000. If the continued use of "Scalecide" brings an orchard that is half dead to life, is it reasonable to expect injury to a good orchard? "Scalecide" shows greater fungicidal properties than any other Winter wash. "Scalecide" has no substitute. A postal request to Dept. E will bring you by return mail, free, our book, "Modern Methods of Harvesting, Grading and Packing Apples," and new booklet, "SCALECIDE, the Tree-Saver." If your dealer cannot supply you with "SCALECIDE," we will deliver it to any R. R. Station in the U. S. east of the Mississippi and north of the Ohio Rivers on receipt of the price; 50-gal. bbls., $25.00; 30-gal. bbls., $16.00; 10-gal. cans, $6.75. 5-gal. cans, $3.75. Address, B. G. PRATT COMPANY, 50 Church Street, New York City.

H. J. WEBER & SONS NURSERY CO., WESTERN DISTRIBUTING AGENTS, NURSERY, MISSOURI

The Handiest Rig on the market for nailing Box Apples



The Edgemont LIDPRESS

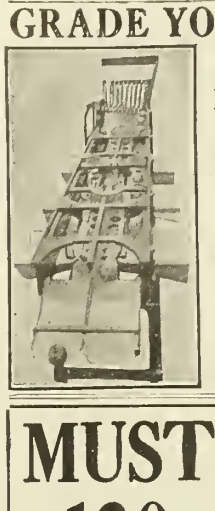
Price $11

Send for Circulars

H. PLATT & SONS

Como Montana

GRADE YOUR APPLES



and Sell Them for All They're Worth

—We have perfected a machine that will assort and size your Apples More Accurately, More Rapidly and More Gently than CAN be done by hand.

The Jones Sizers

for peaches, plums, apricots, onions, oranges, grape fruit, lemons, etc.—are standard—tested and approved by fruit growers everywhere. Catalogues FREE.

The Jones Grader Co.
1710 P. St., N. W.
Washington, D. C.

MUST SELL 120 Acres

two and one-half miles from small town, one-half mile from church and school; all under new hog-tight fence; good five-room two-story residence; plenty of outbuildings; 30 acres of high-grade apple orchard, 7 years old; rural delivery. Similar orchards around it selling for $7,000, but owner is an aged man and will sell at a sacrifice price of $3,600, with liberal terms. This is a snap. Who is first? Send for our free special bargain list in fruit farms.

COCKMON & BANKS, Bentonville, Ark.
Largest dealers in fruit lands in the state.
Exchanges Made.

The Famous Forest Hill Fruit Farm For Sale

Located in Southeastern Nebraska, 13 miles northeast of Falls City, Nebraska. This farm contains 100 acres of good fruit land. About seventy acres in bearing orchard. Good crop on trees now estimated at 7,000 barrels. About ten acres in young trees just coming into bearing. Will sell crop with farm if taken soon. Car of Wealthy apples ripe about August 10th. Principal crop, Grimes Golden, Jonathan, Winesap and Ben Davis apples.

Price $25,000,00 including this year's crop, $18,000.00 without crop. Address

Forest Hill Fruit Farm, Falls City, Neb.

PATENT YOUR IDEAS

$9,000 offered for certain inventions. Book "How to Obtain a Patent" and "What to Invent" sent free. Send rough sketch for free report as to patentability. Patents advertised for sale at our expense in Manufacturers' Journals.

Patent Obtained or Fee Returned

CHANDLEE & CHANDLEE, Patent Att'ys
Established 16 Years
1046 F. Street, Washington, D. C.

BLACK LOCUST, CATALPA

Speciosa, Box Elder, Sycamore, Ash, Elm, Red Bud, Sweet Gum, Mulberry, Walnuts, Maples, Poplars, California Privet, Deutzia, Spirea. Trees, Shrubs, Seeds, etc., at lowest prices.

Send for wholesale list.

FOREST NURSERY COMPANY
McMinnville · Tennessee

GUARANTEED ALFALFA SEED

Absolutely pure; free of weeds; vigorous; hardy. Endorsed by Experiment stations. Sold on approval. Will grow on your land. Big money-maker. Free samples and cultural instructions.

HENRY FIELD SEED CO.,
Box 15 Shenandoah, Iowa.

HIRED HELP PROBLEM

Efficient farm laborers are scarce in the Middle West, and their number is becoming less every year. The problem of good farm help is one of the most serious problems a farmer has to face. Single men usually do not stay long in one place, and the farm owners are not certain of keeping men on whom they can depend.

There is just one remedy for this condition, and that is the employment of more married men as farm laborers on the farms. And there is no reason why this cannot be done. There are any number of farmers in the West who can afford to pay from $30 to $40 a month for married men, and furnish them a house in which to live. With this house, they should furnish a garden and cow, and allow the hand to keep some chickens and a few hogs. Such an arrangement would be of great benefit to the farm owner, because it would allow him to have a hand on whom he could depend to stay with him through the rush of the season's work. Married men do not move from place to place so much as unmarried men.

Such an arrangement would be fine for the hand and his family. In the country, with wages of $30 a month and a house, garden spot, hogs and chickens furnished, he can make a much better living than he can in the city, on the average wages for common unskilled labor. His family would get much better food, and they would live under more sanitary surroundings. And the work should be much more agreeable for the hand. Of course, some farm labor is very hard, but on an average it would not be so hard or so disagreeable as working at the average unskilled work in the cities. His whole, general lot, and the welfare of his wife and children would be far ahead of his life in a city.

And such an arrangement would be of supreme value in helping solve the problem of the help in the farm homes. Under the conditions as they now are in the country, it almost is impossible for the mistress in the average farm home to get girls to help her at all. And sometimes, especially in cases of sickness, they are needed very badly. If the hired hand's family was living in a house on the farm, some of the women or girls usually could be obtained to help the farmer's wife, especially when there was sickness in the family, or a special rush of work, such as canning fruit and the like.

Of course, the employment of married hands will not be successful where a system of farming, such as straight grain farming, is used so there is a heavy rush some seasons, and nothing to do at other times. But that is not a permanent type of agriculture anyway, and the successful farmer usually is the man who has work for himself and his men all of the year.

And finally, married hired hands would do away with the keeping of hired hands in the farm home. No farmer's wife likes to board a hired man. No matter how proper the man may be, the wife prefers to have only the members of the family in the home, and you can't blame her. And, many times, the hired men are not so good as they should be, and they don't set a good example for the children of the home. Some of the men are positively vicious, and their influence is distinctly bad. Farm home life would be better if married hands were employed more, so there would not need to be so many strangers in the farm homes.

Avoiding Waste of Manure.

Barnyard manure wastes rapidly during the hot summer months. If you desire to get the best results from the manure that is produced on your farm, you must keep it hauled out on on the land promptly in the summer. Manure that has heated and "fire-fanged" badly never will be of much value to the land, because much of the fertilizing material is lost.

When manure is left out in the piles during the summer, there is a great loss of nitrogen, the most expensive plant food element, by heating, and much of this element passes off into the air as ammonia and other nitrogen compounds. Much of the remaining fertilizer material is washed away by the summer rains. Manure that has laid in piles all summer long will have lost more than half of its fertilizing value before winter. Always get all of the manure out on the fields as soon as you can in the summer, for if you don't, there will be a mighty serious loss before winter.

Then, most of the flies that bother around the house in the summertime have their beginning out in the manure piles. From the standpoint of health, and also from the standpoint of soil fertility, the manure should be hauled out. Most fruit farmers can't afford to waste fertility.

Protecting Live Stock Against Lightning.

This year, as in most previous ones, there have been many reports about the killing of cattle by lightning, when the cattle had bunched up along the fence during a storm. Cattle that are out on the open pasture always will tend to bunch up against a fence in a storm, for they will travel with the storm until they meet something to stop them. Many times they will get in a corner of the pasture.

As the barbwire fences are good conductors of lightning, many cattle are killed by the heavy charges of electricity that go along the wires when they are struck by lightning. If you will ground the wires, however, there should be no danger from this source. It is very easy and simple to ground fence wires, and this is the way to do it: Take any good, medium sized wire, wrap it firmly around all of the wire in the fence, and place the end in the ground. Put these wires about three rods apart on the fence.

Start the Day on Time.

"Plow deep while sluggards sleep," said wise old Ben Franklin. He knew that the farmer who is first in the field is generally first in other things. By starting the day right your progress will be smoother and quicker.

Many a farmer has been rudely jolted out of a sound sleep by the ear-piercing whr-r-r of a cheap noisy alarm clock. Such an awakening is not desirable for obvious reasons.

One of the newest developments in alarm time pieces is Big Ben, the clock made by the Western Clock Mfg. Co. of LaSalle, Illinois. This clock, the evolution of many years of clock making skill and experience, is different from anything of its kind ever manufactured before. It is known as the "big watch with a breakfast bell." The bell rings steadily until the sleeper is wide awake or gives a short ring at the appointed hour and several reminder rings at intervals for several minutes.

Such a sleepmeter as this is just the thing for farmers. It gets them bright and early in the field each morning. It will get the farm hands out, too, thus saving much time that is usually lost waiting for them. By beginning your work on time you'll get the most done every day. This means bigger yields. Big Ben is endorsed by such nationally known jewelers as Lebolt, New York, and Baldwin of San Francisco. The Western Clock Company say that Big Ben is sold only by jewelers at a uniform price of $2.50. Where the local jeweler doesn't handle Big Ben they ship direct, express prepaid, from their factory at LaSalle, Illinois.—Adv.

Apple Recipes.

Spiced Apple Pie—Pare and take out the core of the apples, cutting each apple in eight pieces; lay neatly in a baking dish, seasoning them with brown sugar and any spice such as pounded cloves, cinnamon and a little grated lemon peel, also a little quince marmalade. Add a little water, cover with a good pie crust or paste, bake slowly forty-five minutes.

Apple Turnovers — Prepare three apples as apple sauce, cut left over pastry in ovals, spread in apple sauce rather thick; fold, wet edges with cold water; fold edges up over and prick with fork; bake in warm oven.

Apple Sandwich — Cut lady-finger cakes in halves and spread with apple sauce; press halves together and cover with whipped cream and walnuts chopped fine.

Apple Cake—Stew three apples and let cool; take one-half cup of butter, one cup sugar, two eggs, one tablespoonful soda, one cup of sour milk, four cups of flour, cinnamon, cloves and nutmeg; then two cups of apple sauce, two cups of molasses; bake in moderate oven; when done spread with whipped cream.

Apple Jelly With Cream—Dissolve three teaspoons of gelatine in some hot water, add to it two cups of hot water, stir in apples chopped fine, about one cupful, one cup of pulverized sugar, two teaspoonfuls of vanilla. Let freeze cold and cover with thick cream.

Apple Tapioca—Soak one cupful of tapioca over night, in morning boil until soft, beat in whites of two eggs, one cupful of sugar, one teaspoonful of vanilla; full a dish with sliced apples and put over it the tapioca and bake fifteen minutes in oven; when done frost with whites of eggs.

Apple Pudding—Half fill an earthen dish with good cooking apples pared and cut in pieces—do not put in any water. When the bread dough is light, take a piece large enough to cover the apples. Simply pull and stretch over the apples. Lay a clean cloth over, turn a plate over it and tuck corner of the cloth closely over all. Put dish on top of stove, back where it will not be too hot and let steam three hours. When done take off crust, spread apples on it and eat with butter, sugar and cream.

Apple and Rice Pudding—Six apples, one pint of milk, two eggs, a little sugar, jam, and three teaspoonfuls of rice. Put well washed rice into a greased pie dish, and cover with water, peel and core apples, when rice is swollen, place apples in dish and into each crevice put a teaspoonful of jam, cover dish with a plate to keep fruit in place and replace in the oven; when aples are nearly cooked pour over the custard and return to the oven, and when the custard is set, dust over a little sugar and serve hot.

Massachusetts. H. A. S.

Notes.

The premium list of the Missouri State Fair, to be held at Sedalia, Sept. 28 to Oct. 4, is out, and those interested can secure copies from the secretary, John T. Stinson, Sedalia, Mo.

The Virginia State Horticultural Society will hold four packing schools this year at four different places, one week at each place, opening as follows: At Roanoke and Charlottesville the week of August 19, and at Staunton and Winchester the week of August 26. Particulars can be secured from the secretary, Walter Whately, Staunton, Va.

It is reported from Iowa that a great many Ben Davis trees in that state are dying because of winter injury. The whole Ben Davis family is said to be in bad shape after the very severe winter. If Ben Davis proves not to be hardy, another mark can be scored against this popular old sort.

It is to be hoped the refrigerator cars used in marketing the Southern peach crop will be released in time to handle apples. If not, there will be a great scarcity of cars—indeed, there may be a shortage anyway.

The Manville apple grader is ready for delivery from Chicago to handle this year's apple crop. It has been perfected in steel and some of them are in transit. Anyone interested in economical and practical grading can get full details and prices from the Manville Fruit Company, Boise, Idaho. —Adv.

ORNAMENTAL IRON FENCE
Strong, durable and cheaper than wood. Hundreds of patterns for lawns, churches, cemeteries, public grounds, etc. Write for free catalogue and special offer.
WARD FENCE CO., Box 631 DECATUR, IND.

DANGEROUS as well as painful
Backache Neuralgia
Lumbago Rheumatism
Stiff Joints Sprains
Combault's Caustic Balsam
WILL RELIEVE YOU.
It is penetrating, soothing and healing and for all Sores or Wounds, Felons, Exterior Cancers, Burns, Boils, Carbuncles and all Swellings where an outward application is required CAUSTIC BALSAM HAS NO EQUAL. Removes the soreness—strengthens the muscles. Price $1.50 per bottle. Sold by druggists or sent by us express prepaid. Write for Booklet L.
The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

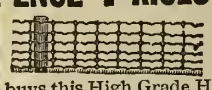
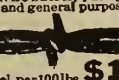
In writing advertisers please mention The Fruit-Grower.

Shoo Fly THE ANIMALS FRIEND

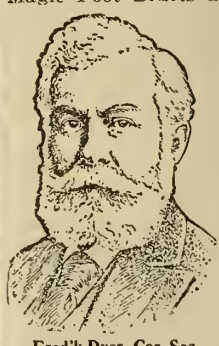
Keeps flies and other insect pests off of animals—in barn or pasture—longer than any imitation. Used and endorsed since 1885 by leading dairymen and farmers.
$1 worth saves $20.00 in milk and flesh on each cow in a single season. Heals sores, stops itching and prevents infection. Nothing better for galls. Kills lice and mites in poultry houses.
SEND $1, if your dealer can't supply you, for enough Shoo-Fly to protect 200 cows, and our 3-tube gravity sprayer without extra charge. *Money back if not satisfactory.* Write for booklet, FREE. Special terms to agents.
Shoo-Fly Mfg. Co., Dept. 31 1310 N. 10th St., Phila.
Editor knows from experience that Shoo-Fly is O.K.

In writing advertisers please mention The Fruit-Grower.

ABSORBINE
Before After
Cures Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Bolls, Sores, Wire Cuts, Bruises, Swellings, Lameness, and allays Pain quickly without Blistering, removing the hair, or laying the horse up. Pleasant to use. $2.00 per bottle, delivered. Describe your case for special instructions and Book 5 E Free.
ABSORBINE, JR., liniment for mankind. For Strains, Painful, Knotted, Swollen Veins, Milk Leg, Gout. Price $1.00 per bottle at dealers or delivered.
W. F. YOUNG, P.D.F., 34 Temple St., Springfield, Mass.

FENCE PRICES BUSTED

15c PER ROD
buys this High Grade Hog Fencing; heavier than usual kinds offered. 26 inches high, 7 bars, weighs about 6 lbs. to a rod, all heights at proportionate prices. 48 inch Poultry Fencing, strongest built, per rod..... 27c
$1.25 Per 100 Lbs. for GALVANIZED WIRE
This price is for No. 6 gauge. Other sizes in proportion. This is our Galvanized Wire Shorts, put up 100 lbs. to a bundle, suitable for Fencing and general purposes.
BARB WIRE

Best and strongest; standard weight. Made of No. 12 gauge, galvanized, put up 100 lbs. to a reel, per 100 lbs. $1.95
FENCE CATALOGUE FREE Quotes low prices on Fencing, Wire Gates, Lawn Fence, Fence Posts, etc.
Chicago House Wrecking Co., Dept. L22, Chicago

In writing advertisers please mention The Fruit-Grower.

RHEUMATISM
Make Summer Heat Help Rid You of Pain-Causing Poisons. Send for My Drafts.
To Try Free—Write Today
Help Nature expel acid impurities through the great foot pores by wearing Magic Foot Drafts a few days. Now is

Fred'k Dyer, Cor. Sec.
is the time to get rid of rheumatism, by assisting Nature to cleanse the system thoroughly in her own way. Send my coupon today. By return mail you will get my regular $1.00 Drafts To Try Free. Then if you are satisfied with the benefit received, send us the Dollar. If not, keep your money. We take your word. No matter where the pain or how long and severely you have suffered, Try My Drafts. You cannot lose a penny, and I know what they are doing. Send no money, but mail this coupon at once—today — while you can.

This $1 Coupon FREE
Good for a regular $1.00 pair of Magic Foot Drafts to be sent Free to try (as explained above) to
Name .....
Address .....
.....
Mail this coupon to Magic Foot Draft Co., 832F Oliver Bldg., Jackson, Mich.

CANNING VEGETABLES

I am asked for information in regard to canning vegetables in fruit jars, which I take to mean glass jars, and I feel rather up against it. It has been, and still is my rule to write only from my experience, and as it is limited in this direction, I am quoting largely from a bulletin of the Department of Agriculture, which certainly should be reliable.

I have canned beans in Mason jars with good success, for several years, but since I first used packers' tin cans, I have discarded glass altogether. Right here let me put in a plea for that method—the packer's can. So many confound those cans with the sealing wax tin cans of olden days. A good, sensible look will show a vast difference. Packers' cans can be secured from a local cannery, or if there is none, I can give addresss of the parties from whom I have gotten mine. The cost will not exceed 3c per can, in the smallest lots. A dollar will provide the necessary coppers and 25c additional will secure sal ammoniac, muriatic acid and solder. Nearly every home where The Fruit-Grower is read boasts of a wash-boiler and cook stove. And there you are. One thing I have omitted, zinc; but an old Mason jar cover will furnish that. Put it in an old teacup, pour your muriatic acid over it, and when it has ceased to bubble, add one-third to one-half the bulk of water, and you have a good soldering acid. No preservatives are used. Some factories do use them, but the home canner needs them not.

To return to glass jars, however, whose name is legion: I have used the Mason jar almost entirely, and most satisfactorily, with one exception. I had three or four glass jars with glass top, using a rubber, like the Mason jars, the top held in place by a wire spring. These came into my possession some twenty years ago, and though I have seen them elsewhere in use, have never seen them for sale. I liked them even better than the Mason type. I have used a wide-mouthed jar, requiring no rubber ring, but using a metal top, lacquered, and having a groove around the edge, filled with a composition which is melted during the canning process by the heat of the contents of the can and forms a seal that takes the place of a rubber ring. I have been very unsuccessful in keeping either fruit or vegetables in these jars. So I shall speak of the Mason jar only in giving my experience.

I prepare and cook my string beans just as for the table, that is boiling them in water to cover until done. I use no seasoning of any sort, putting the beans in the jars, using enough of the water in which they were boiled to fill the jar and screwing the cap on tight. I used to use salt, but found that by omitting it we liked the beans better. I have used one or two kinds of acid—which I also found unnecessary. I have canned peas the same way, but my experience is more limited with them, as I only did it one season, and only four cans then, and lost one of them. This was due to old covers; I believe, as I lost an unusual number of jars of fruit that year. My covers were quite old and I found several of them leaking when I came to use them. I discarded all that were old enough to vote, or not above suspicion, and with the new covers have not lost more than a fractional per cent, though the cans have been through the process of a family move a time or two.

I tried corn by a different process, cutting it off the cob, putting in the cans, with rubber adjusted and top lightly screwed on. The cans were then set in a wash-boiler, on a false bottom of slats, with cold water coming a little over half way up to the neck of the can, the water brought to a boil and kept there two hours. The tops were then screwed on tightly, and the cans set aside to cool. The corn looked nice in the cans, and seemed to be keeping well, but when opened the smell was so intense that I never tried to clean the cans for future use, but had them carried very far away. A friend of mine who cans largely tells me she had the same experience, and yet I know of people who do can corn by this process with fine results. I think it should be cooked longer, but the results were such that I have never cared to experiment with corn again. I have canned it in tin packers' cans with excellent results.

Corn must be young in order to keep, and must not be allowed to stand from the time it leaves the stalk until the end of the process. Cooked in the packers' can corn requires five hours' boiling, and on that I base my supposition that insufficient cooking caused mine to spoil.

A lady once told me that she cut the corn from the cob, placed it in a granite kettle on the stove, with sufficient water to cook, cooked it five hours, then put it in Mason jars and sealed, as she would peaches or pears, and it kept nicely. If I ever experiment again, it will be with that method.

Now let me give you the method recommended in the bulletin mentioned: "Husk and brush the silks off with a stiff brush. Shear off the grains with a sharp knife, and pack the jar full. Add salt to taste, usually about a teaspoonful to the quart is sufficient, and fill up the jar to the top with cold water. Put the rubber ring around the neck of the jar and place the glass top on loosely * * * Place the false bottom in the boiler and put in as many jars as it will conveniently hold. Don't try to crowd them in. Leave space between them. Pour in about three inches of cold water, or just enough to form steam, and prevent the boiler from going dry during the boiling. * * * Put the cover on the boiler, and set it on the stove. Bring the water to a boil, and keep it boiling one hour. At the end of that time remove the cover of the boiler and allow the steam to escape. Press down the spring at the side of the jar. This clamps on the top, and will prevent any outside air from entering. The jars can now be removed and cooled, or allowed to stand in the boiler until the next day, when the clamp is to be raised and the hour of boiling repeated. The cans are clamped and left until the third day, when a third boiling completes the process."

This process is given for a spring-closing can, but the Mason jar may be used in the same way, by screwing and unscrewing the cap. This seems to me one of those processes made unnecessarily complex so as to sound like something difficult. The same result and maybe a better one, may be obtained by a continuous boiling, and I would make it five hours until I had demonstrated by taking out a can at the end of the third hour, whether three was sufficient.

For peas, the directions given are: "Shell the young peas, pack in jars and sterilize as directed under 'corn.'" As peas in packers' cans only require one hour's cooking, I should think that would be sufficient in glass, but directions given for the use of "Economy" glass jars say, "boil three to four hours." I dislike to question the correctness of such authorities, but they tell me string beans should boil three hours, and I have put up hundreds of cans of beans, cooking them only one hour, with perfect results, and a few dozen cans of corn and peas at five hours for corn and one for peas, did as well.

A post card to the Department of Agriculture, Washington, D. C., asking for Farmers' Bulletin No. 359, Canning Vegetables in the Home, will bring the bulletin from which I have quoted. And a little experimenting will adapt its methods to each one's individual needs. The Kerr Glass Manufacturing Co., Portland, Ore., will send to any one requesting it, their bulletin of directions for canning fruits and vegetables in glass jars, from which much help may be gained.

MABEL EMERSON MOORE.

Missouri.

Get your neighbors to subscribe.

Classified Advertising Department

RATE FIVE CENTS A WORD, CASH WITH ORDER

POULTRY DEPARTMENT

Crystal White Orpingtons—After June 1, 1912, we offer 50 pullets, $3.00 value, at $1.50; 50 pullets, $5.00 value, at $2.50; 50 yearling hens, $10.00 value, at $5.00 each. Baby chicks at 50c, 37½c and 60c each. All eggs at half price. Mountain View Ranch, 8 Sugar St., Salt Lake, Utah.

The Sunshine Flock S. C. Buff Leghorns. Gold on your farm; gold in your pocket. Pen 1, $3.00 per setting of 15; Pen 2, $2.00; Pen 3, $1.00. Range, $5.00 per 100. Mrs. Anna H. Baldwin, Keswick, Iowa.

Rose Comb White Leghorns, bred from winners at Chicago, St. Louis, Minneapolis, Oshkosh and Fond du Lac. Eggs, $1.50; $1.00 per 15; $5.00 per 100. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

White Plymouth Rocks. Fine large birds, good shape, color and head points. Eggs, $1.50; $1.00 per 15. Circular free. Write Jos. H. Kitchen, Eldorado, Wis.

Mammoth Pekin Ducks, winners at Chicago, Minneapolis, Wisconsin State Show and Fond du Lac. Eggs, $1.50; $1.00 per 12; $3.00 per 50; $5.00 per 100. Circular free. Jos. H. Kitchen, Eldorado, Wis.

Black Langshans, Buff Orpingtons. Single Comb Rhode Island Reds. Winners of 96 ribbons, 15 eggs, $2.00. Baby chicks, 25c. C. R. Smith, Burnt Prairie, Illinois.

Baby chicks, 10c to 20c; stock, $1.25 to $5; eggs, $5 per 100 up. Rhode Island Reds, both combs. White and Columbian Wyandottes, White and Buff Orpingtons, Pekin, Rouen and Indian Runner ducks, Toulouse geese, Bourbon Red turkeys. Catalogue free. G. A. Mitchell, Dept. B, Ridott, Ill.

Fishel Strain White Runners, Walton Strain English, American Fawn and White Standard Bred and for pure white eggs none better. Thirteen eggs, $1.00 up. Wooldridge & Grape, Englewood, Ill.

FARM LANDS FOR SALE

Look ahead five years—What's in store for you? Would a pretty home in absolutely healthy climate and comfortable living income every year appeal to you? One of our ten-acre apple orchard tracts, planted with 500 apple trees—which will cost you a few dollars now and small payments monthly—will insure your future home, income and happiness. Write now for descriptive Book 1, Shenandoah Valley Apple Lands Company, Waynesboro, Virginia.

20 acres at Richland, Wash., on the Columbia river. Highly improved, irrigated orchard tract, set to best varieties of commercial apples, with peach and pear fillers, trees 4 years old. Best of soil, abundance of irrigating water, mild climate, 4 acres of strawberries paying $100.00 per acre. Comfortable house and well equipped dairy of 11 grade Jersey cows. For particulars address C. D. Mitchell, Richland, Wash.

For Sale—Albemarle Pippin Orchard, 1,100 bearing apple trees, 400 bearing peach trees, 110 bearing damson trees. Prospects for one thousand barrels of apples this fall. Will sell out complete and give immediate possession. For terms write T. U. Taylor, Batesville, Albemarle County, Va.

60 acres, ¾ mile depot on macadam road, 20 miles east of Kansas City; 1,200 young apple trees; good improvements, soil and water. Price $12,000.00. If interested address owner, E. E. Kirby, Grain Valley, Mo.

Cuba—Most productive soil. Delightful and healthful climate, ample rainfall; cheapest transportation facilities to the world's greatest markets. Particulars free. Sanderson, 184 Palace Bldg., Minneapolis, Minn.

For Sale—Eighty acres, famous Pecos Valley, New Mexico. Ideal climate; flowing well district; close to town and railroad. Carpenter, 605 N. Monroe St., Streator, Ills.

Come South. Mountain section, altitude 2,250 feet. Mild winters, cool summers. Dairying, fruit growing, diversified farming. Cheap lands. Information Bureau, Hendersonville, N. C.

79 acres; 40 miles E. Kansas City; 35 acres bearing orchard; 15,000 bushels apples now on trees. Crop and land at sacrifice price for quick deal. Box 27, Richmond, Mo.

Texas state lands; $1.50 to $5.00 per acre; 1-40th down, balance forty years; information and Texas map free. Journal Publishing Company, Houston, Tex.

Fruit Farm for sale. 8,000 bushels apples on it now. Would like to sell in orchard. Buyers, come or write for particulars. R. M. Denson, Ursa, Ills.

For Sale—64 acres, 45 miles south of Kansas City; 18-acre apple orchard, full of sprayed apples. D. R. Hopkins, Box 112, Harrisonville, Mo.

40-acre apple orchard in Southern Illinois for sale. Best bearing age. House, good land; near railroad. Drake, Bowen, Illinois.

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace Bldg., Minneapolis, Minn.

AGENTS WANTED

Local representative wanted. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get [illegible] a big paying business without capital [illegible] independent for life. Write at once for full particulars. Address E. R. Marden, Pres. The National Co-Operative Real Estate Company, L420, Marden Building, Washington, D. C.

MISCELLANEOUS

Cantaloupes—"The kind that's sweet and good to eat." Mail me $1 50 for one, $2.50 for two crates, delivered. Express charges paid to Oklahoma, Illinois, Kansas, Missouri, Iowa, Nebraska points. Elberta peaches, delivered, $1.00 per crate, same points. Help me cut out middlemen. Your check will do. Ship about July 15th. Satisfaction guaranteed. G. E. Johnson, Sec. Grannis Fruit & Truck Growers' Assn., Grannis, Ark.

Buy no barrel caps until you get a sample of the Appco Shipsafe cap. The deep, close corrugations make them much better for either top or bottom. Write for sample, stating about how many you will use. American Paper Products Company, 300 Bremen Ave., St. Louis, Mo.

Kodak Films Developed 10c per roll, any size. Prompt attention given mail orders. Prints 2¼x3¼ to 3¼x4¼, 3c; 4x5 to 3¼x5½, 4c. J. M. Manning, 1062 Third Avenue, New York City. Box M.

Consulting horticulturist—J. F. Littooy, Boise, Idaho. Directs orchard operations. Investigates orchard values and operations. Expert for counsel at law.

Sell your property quickly for cash, no matter where located. Don't pay big commissions. Particulars free. Real Estate Salesman Co., Dept. 28, Lincoln, Neb.

NURSERY STOCK

Gooseberries at wholesale: Red Jacket layers, 1st class, $3.00 per 100; $20.00 per 1,000. Downing layers, 1st class, $3.00 per 100; $20.00 per 1,000; Downing, 2-yr., No. 1, $3.00 per 100; $60.00 per 1,000; Houghton 2-yr., No. 1, $6.00 per 100; $40.00 per 1,000. Red Cross Currents, 1 yr., No. 1, $5.00 per 100; $40.00 per 1,000. Orders now for fall. Terms cash with order. Wm. Mandel, Nurseryman, Bloomington, Ills.

Grow $5,000, as a side line. Raise Hydrastis and Ginseng; $10.00 worth to the square yard. Sure crop. No hazard. Rapidly rising market prices. Plants for sale with easy can't-fail plans, and I buy all you raise. Chas. G. Dodge, Albany, Wis.

Grow $3,000 in your back yard as a side line, while you work while you sleep. Raise Golden Seal. Sure crop. No hazard. Rising market. Information for stamp. Chas. G. Dodge, Albany, Wis.

Make $25,000 in spare time. Raise Golden Seal. Circular free. Bowman Gardens, Albany, Wisconsin.

DOGS AND PET STOCK

Scotch Collie Puppies. Pedigreed stock. $5.00 and up. Dog, Hare and Poultry catalogue. Belgian book, 5 stamps. Fulling Poultry Farm, La Fargeville, N. Y.

PATENTS

Valuable Free Book on Patents, telling how to protect and turn your ideas into gold, sent free. Fitz Gerald & Co., 821 F St., Washington, D. C.

LIVE STOCK

Milch Goats—Swiss and Spanish breeds. G. H. Wickersham, 1211 St. Francis Ave., Wichita, Kansas.

We are Headquarters for

BARRELS AND KEGS

APPLE BARRELS—BUY EARLY

There will be a big demand for apple barrels this season, and you should enter your order early and avoid the rush. We also furnish flour, meal and poultry barrels. New Oak Cider and Pickle Barrels and Kegs, 5 to 50 gallons. Secondhand Whiskey Barrels. Soft Wood Sorghum Barrels and Kegs. Baskets, Berry Boxes, Cooperage Stock, Headliners and Bungs.

Write, telephone or wire us. Our stock is the best in the land, and prices are right.

J. A. SHCROER & COMPANY
Telephones 257 St. Joseph, Mo.

Apple Boxes

THE WESTERN WHITE PINE BOX the high-class package for apples. Growers: This box lumber doesn't warp in sun, rain or in cold storage. Provide for wants early to meet the large apple crop. Address

California Pine Box & Lumber Co.
San Francisco, California

GINOCCHIO-JONES FRUIT CO.,
Agents for Missouri. Kansas City, Mo.

The CLEANEST CUT—BRIGHT ATTRACTIVE—OUR

Western Soft Pine FRUIT BOXES

DON'T SPLIT, LIGHT, STRONG—Nail easy. Send on post card your name, address, kind and quantity wanted. Then we will send you sample of wood and prices, your station.

Washington Mill Company
SPOKANE, WASHINGTON

We Want Apples

PEACHES AND GRAPES. State what you have now or will have to offer
BRUSH & SON, PIPESTONE, MINN.

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing

Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*

M. BRUNSWICK & CO., Rochester, N. Y.

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. Hanson & Son, Hart, Mich.

BEAUTIFULLY ILLUSTRATED
BOOKLET ABOUT DELAWARE
the State of red apples, luscious peaches, strawberries and of ideal homes. Address State Board of Agriculture, Dover, Dela.

Proven Fruit Lands
Rogue River Valley
Frost Free—Shipping Point
Address
Hugo Development League
HUGO, Oregon **PEARS**

THE

love of music is born in every one of us and there's nothing to satisfy it like the

Victor

Hear the Victor today at the nearest Victor dealer's. If you don't know who he is write us and we'll tell you. Write anyway for complete catalogs of the Victor ($10 to $100) and Victor-Victrola ($15 to $200). Easy terms can be arranged with your dealer if desired.

Victor Talking Machine Co.
23rd and Cooper Sts.
Camden, N. J.
Berliner Gramophone Co., Montreal
Canadian Distributors

Always use Victor Records played with Victor Needles—there is no other way to get the unequaled Victor tone.

HOTEL
CUMBERLAND

NEW YORK

Broadway at 54th Street

Near 50th Street Subway Station and 53rd Street Elevated.

Broadway cars from Grand Central Terminal and cars from new Pennsylvania station pass the door.

New and Fireproof

Best Hotel accommodations in New York at reasonable rates

$2.50 with Bath, and up

Ten minutes' walk to thirty Theaters. Excellent Restaurant. Prices moderate.

Send for Booklet

HARRY P. STIMSON
Formerly with Hotel Imperial

In writing advertisers please mention The Fruit-Grower.

Genasco
THE TRINIDAD-LAKE-ASPHALT
Ready Roofing

Are you tired of tinkering with leaky roofs? Lay Genasco—made of Nature's everlasting waterproofer. It is leak-proof to stay. The Good Roof Guide Book tells you why.

Write for this Book and samples—free.

The Kant-leak Kleet, for smooth-surface roofings, prevents nail-leaks.

The Barber Asphalt Paving Company
Largest producers of asphalt, and largest manufacturers of ready roofing in the world.

Philadelphia
New York San Francisco Chicago

A Good Position For You

Sure when you graduate from GEM CITY BUSINESS COLLEGE of Quincy, Ill. Thorough courses in Shorthand, Typewriting, Bookkeeping, Actual Business Practice, Penmanship and Mathematics. 23 competent teachers—1400 students annually. Our own $100,000 specially equipped building. Write now for beautifully illustrated catalog and year book.
D. L. Musselman, Pres.
Lock Box 36 Quincy, Illinois

OUR HOME FOLKS

Conducted by MRS. RUTH MOTHERBY. Address all Communications to Home Editor The Fruit-Grower

Herbs.

Some of the sisters have asked me to write "all about herbs and their uses." I'd like to see the fellow who could do that, and I'd like to own the set of books that would result. Why, I could get up quite a book on the subject, myself, and I really know very little about it! Now, the question is just what shall I put into a letter that really ought not to fill more than a column and a half of the space given to this department? You see, Mrs. Motherby knows that some of her readers are not interested in Aunt Keturah, and she has to figure on pleasing you all.

How few people there are, these days, who go out in search of medicinal plants that grow wild! And how very few there are who would know one of these plants if they saw it. For that reason, it is hard to know just what to put into this letter. Then, my letters of inquiry concerning this subject are from widely separated parts of the country, and every place has its own particular herbs, some of which are not to be found in the other places. But, in many cases, it is possible to plant seeds or transplant roots and grow your own herbs, and that is really fascinating work.

I will give you a list of the best known herbs and roots, as they occur to me: Boneset, saffron, sage, senna, wild indigo, sassafras, blackroot, tansy, catnip, elder flower, maiden hair, hops, bloodroot, pleurisy root, lobelia, smartweed, mayweed, poke root, sweet flag root, ginseng, yellow dock root, burdock, Virginia snake root, blackberry root, pennyroyal, spearmint, gentian root, golden seal root, black cohosh root, dandeloin root, rhubarb, mandrake root, skunk cabbage root, lady slipper root, sarsaparilla, balm and witch hazel bark. I presume I could think of fifty more, if I had time, but these will do for a starter.

I gather most of my herbs when they are just beginning to flower. I cut them above the ground, shake them well to rid them of insects, then wash them under a good flow of clear water. They are then tied into loose bunches, and hung up to dry, with the heads hanging down. I cover them with folds of mosquito netting, so arranged that they protect them but do not touch them. When they are thoroughly dry, I put them into paper bags and label them. Medicinal roots are carefully washed and dried, then put away in bags. I like to dry roots and herbs in hot sunshine, when possible. When preparing these things for immediate use, I simply make them into tea. I pour cold water over them and let them stand several hours, if I can, then slowly bring them to a boil and let them simmer until all the strength is extricated. But if there is immediate need of them, I steep them.

I like to soak them, then let them simmer, until the strength is removed, then strain the liquid, and let it simmer again until very strong then bottle it while hot and seal it carefully. This will keep a long time, without the addition of alcohol; but I sometimes use just enough alcohol to keep it from spoiling. The advantage of this is that it may be taken in small doses, and the patient does not protest as he is likely to when commanded to drink a large cupful of bitter tea.

Some people pick the leaves from their herbs, but I like to use the stems as well as the leaves.

I should imagine a study of botany ought to be of great assistance to those who know nothing of plants and yet want to learn how to distinguish those that have medicinal values. I never studied botany, but learned what I know from an old-fashioned mother.

It would be impossible, in a letter like this, to tell what each of the above mentioned herbs and roots is good for. I can't see just how to help you in that respect. Perhaps if you were to tell me what herbs you had, I might tell you what to do with them; but the answers to your questions would have to be of general interest, or we'd have no right to ask space for my reply. It is impossible for me to answer letters, except in this way. I am a very busy woman, and I don't like to write. But I do like to help, when I can. AUNT KETURAH.

Winter Bloomers.

I always begin in August to get my winter garden together. We have a double window on the south side of the house, which we use for our conservatory. The usual window sash is removed, and the "winter garden" sash screwed in place. This consists of a sort of bay window of glass—even the roof being of glass, and so arranged that it can be raised for ventilation. All except the roof is made double, for warmth. The floor of this garden is outside the window ledge, and consists of a box of the best soil in which the plants are set as soon as they are rooted. The soil is so rich that the plants can be set in close together without starving. It is surprising how much can be raised in a garden of this sort. The window ledge is covered with oilcloth, for protection, and flower pots stand on this. There are hanging baskets, also, and some brackets at the sides.

We have a small sheet-iron stove—in reality only a box, in which we set a small lamp on very cold nights to keep our plants from freezing. This is placed at the back, close to the window, and has afforded sufficient heat even when the thermometer stood 30 below zero. We feel perfectly safe, for we know that lamp cannot tip over and set fire to the house.

Our "standbys" for our garden are heliotrope, begonias, ageratum, coleus, fuschias, abutilon and, of course, geraniums; but we always have something else, to keep us interested—something that we are not quite sure of and that requires much attention. And we never fail to give some space to bulbs. Among all bulbs, we give the preference to the cyclamen. We place the pots containing it on the north side of the house, in the spring, and forget all about them. In August we usually find them showing life and then we repot them and let them stand where the rain can reach them until it is time to bring them into the house. They usually start to bloom in January, and keep at it until you are almost tired of so many blossoms. Abutilon is another incessant bloomer, under proper conditions. I plant the seed in the spring, and take up the plants in the fall. They are really easily cared for, and not troubled with insects. Heliotrope is also to be recommended for steady blooming.

If you have never tried browallia, let me recommend it. I do not know of any blue flower that is more satisfactory. It will bloom from autumn until spring, and needs little care except an occasional pinching back, for it has a tendency to branch out too much, and if allowed to follow its own inclinations will furnish more foliage than blossoms.

Impatiens Holstii and Impatiens Sultani are also most desirable. I don't know the everyday names of these plants. We call they holstein and sultan for short. They grow in the garden, and are raised from seed. The Holstii have bright waxy flowers, with light green foliage and stem. There are two varieties that I know of, one having a sort of vermillion orange blossom and the other a deep scarlet. The foliage of the latter is much darker than that of the former. The Sultani has glossy green foliage and bright carmine colored flowers produced in clusters of two or three from the axils of the leaves. It is an almost perpetual bloomer.

See the E-Z SEAL

It is Sanitary, It is all Glass!

There are *four* good things about this fruit jar—the easy seal, the glass cap, the green tint and the big mouth. It takes most fruit *whole*.

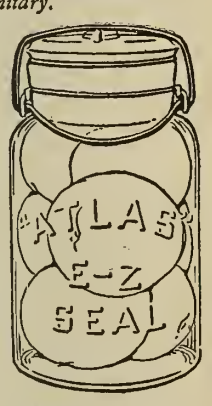
It is *all glass*—that's another good thing. The "tin age" is past. No tin about this jar—no metal. Even the *cap* is glass—no twisting—nothing to taint the fruit. This season try

E-Z SEAL JARS

You can preserve all kinds of vegetables as well a fruit, and be sure they will "*keep*" in E-Z Seal Jars. Get our Free Book.

This jar is the housewife's *joy*—easy to fill, easy to close, easy to open and easy to clean. It is air-proof and light-proof—the jar that is *sanitary*.

Free Jar—Free Book



Cut out this coupon, take it to your grocer—he will give you one E-Z Seal Jar—FREE. Be sure and write for FREE Book of Recipes—it tells many things you should know. Get the jar from the *grocer*. Get the Book from *us*.

HAZEL-ATLAS GLASS COMPANY
Wheeling, W. Va.

1-Qt. E-Z Seal Jar CF FREE for the Coupon

Please note—In order to secure free jar this *coupon must* be presented to your dealer before Sept. 1st, 1912, with blank spaces properly filled out.

HAZEL-ATLAS GLASS CO.,
Wheeling, W. Va.

This is to certify, That I have this day received one "Atlas" E-Z Seal Jar Free of all cost and without any obligation on my part. This is the first coupon presented by any member of my family.

Name_____

Address_____

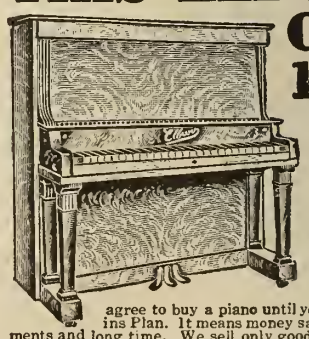
TO THE DEALER:—Present this to jobber from whom you recieved E-Z Seal Jars. All coupons must be signed by you and returned before Nov. 1st, 1912.

DEALER'S CERTIFICATE. This is to certify, that I gave away one "Atlas" E-Z Seal Jar to the person whose signature appears above.

Dealer's Name_____

Address_____

THIS ELBURN



Only 17¢ a Day

We give
Long Time
Easy Terms
Low Prices

Don't buy or agree to buy a piano until you get our Jenkins Plan. It means money saving, easy payments and long time. We sell only good reliable pianos—no trash. We have also special bargains in used and sample pianos, price $50.00 and upward.

We will save you money It won't cost a cent to get our Jenkins' Plan bargain offer. Just say on a postal or in a letter "**please mail prices and particulars about your piano bargain offer.**" Address

J. W. Jenkins Sons Music Co.
605 Jenkins Bldg., Kansas City, Mo.

DAISY FLY KILLER

placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by Dealers, or 6 sent prepaid for $1.

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

I always begin in August to root the slips taken from the outdoor garden plants, for that gives me opportunity to replace any that may not live, or appear healthy. It is surprising the number of annuals that may be grown from slips, and that furnish fine plants for the winter garden. Last fall, I added salvia to my list, and it bloomed so beautifully for four weeks during midwinter that I shall give it more space this year.

I am going to use a northwest window for flower pots, this winter, and that will give me space for more things. I shall put the begonias into this window, also the holstii and sultana, for they really do not require much sunlight.

As my plants come into bud, I give them fertilizer in liquid form once every week or two, and twice during the winter I work a little of the dry plant food into the earth, being careful not to let it touch the roots. I keep a glass of water standing in the window, where the sun will cause it to evaporate, for I fancy it makes the air fresher for the plants. I find that my plants require less water, when I keep the earth loose, and so when I have nothing else to do I cultivate the soil by working it loose with a three-tined kitchen fork; then I sprinkle the foliage of the plants, and they look as fresh as if they had been standing in a warm spring rain. There is danger in watering plants too much. It is easily done when they are kept in warm rooms, for they soon begin to look parched, and water is given so plentifully that the roots rot. That is why it is beter to sprinkle the foliage occasionally, and work the soil well, just as is done in countries where there is insufficient rain.

MRS. LESLIE WALKER.

How We Manage.

Where the farmer's family lives in a village, as we do, and cooked food must be sent out to the farm every day. for the hired men, as well as for the home folks who work there, the question of lunches becomes a really serious problem. We have not owned our farm long enough to replace the buildings—most of which were burned to the ground just before we purchased the place. So we have put up two large tents—one for a dining room, and the other for a bedroom for the men. A small tent serves as a kitchen. We found a man, through the Salvation Army, in a neighboring city, who had once cooked in a lumber camp, but who is now too old to do such work. But he does very well as cook on our farm, being able to prepare and serve all the vegetables and meats the men require. It falls upon us to bake bread, cakes, cookies, pastry, etc., and carry it out to the farm camp every day.

While looking over our recipes yesterday, which was my day to bake, I wondered if there were not other women situated as we are, who would like to know what we had found most satisfactory to our men.

Appended find recipes for our "standbys:"

Molasses Cookies.

Five eggs, two cups molasses, one cup sugar, one tablespoon ginger, one of saleratus, one cup butter, flour to roll thin. This recipe will make a large crock full, which will keep good for a very long time.

Ginger Snaps.

One cup molasses, one of sugar, one of butter and lard mixed. Put on stove and let it cook five minutes. When cool, put in one tablespoon ginger, one teaspoonful salt, one tablespoonful water, and enough flour to roll very thin.

Lemon Cookies.

One cup sugar, one of butter, three of flour, two eggs, one teaspoonful lemon, two of baking powder, and flour enough to roll thin. Do not knead, and bake very quickly.

Doughnuts.

Two eggs, one cup sugar, one of sour milk, one teaspoonful saleratus, and a little nutmeg. Mix quite soft.

Spice Cookies.

One cup sugar, two-thirds cup butter, one-half teaspoonful each of cinnamon, cloves, nutmeg, allspice and ginger, a little pinch of pepper and one-half teaspoonful saleratus dissolved in two-thirds cup of boiling water. Mix quickly, add enough flour to enable you to roll the dough very thin, and bake in a quick oven.

St. John Cake.

One and one-half cups sugar, one-half cup butter, one cup currants, one cup seeded and chopped raisins, one-half teaspoonful each of all kinds of spice, two teaspoonfuls baking powder in three cups flour, and two-thirds of a cup of strong coffee. Bake very slowly.

Don't think we bake all these things every day. We do bake bread every day, during the hot weather, for it seems to get dry so quickly. We get it baked by noon, so that we can take hot rolls over to the camp for luncheon. Then they have the fresh bread for supper, and with it we take fresh ginger bread or doughnuts, with either cake or cookies. The old man does the rest of the cooking, as well as doing all the work of washing dishes and keeping the tents in order. He does it easily and enjoys his work. It is doubtful if he could find any other work that he could do as well. The workmen seem to enjoy this life better than they would living in a home presided over by women. And we women have little of the hard work and worry that falls to the lot of the average farmer's wife. Perhaps some may see in this a possible solution of the greatest of farm-life problems.

LACY MAC.

Toast.

We have toast for breakfast every morning during the hot weather. In fact, toast is about all we do have for breakfast—except coffee. It is so hard to keep bread moist at this season of the year, without its getting moldy, that we are obliged to toast it to make it palatable. There are cooks who can't make it palatable that way, because they do not know how to make toast. They haven't learned that good toast requires care in the making.

If enough bread has not been left over from dinner, slice as much more as will be needed for breakfast after washing the supper dishes. The surface must have time to dry a little before the bread is toasted, or it won't be crisp. If dry toast is to be served, don't pile the slices one over the other for that makes them soggy. If you haven't a toast rack, place the slices on a hot platter, standing them on edge as nearly as possible, but never one on top of another.

If the bread has become very stale, it is best to steam it before toasting it. Otherwise, it would be too hard to eat. The old-fashioned method of doing this is to be recommended. Dip the stale slices in hot salted water, very quickly, then lay them in a biscuit tin and leave them in a hot oven until toasted.

Dry toast, sprinkled with salt, then covered with thick sweet cream, makes a breakfast that cannot be excelled. Try it, you lucky people who have all the cream you want! If you are too thin for beauty, or if you are threatened with tuberculosis, you cannot get the toast and cream habit too quickly.

We make so many different kinds of toast that our family never gets tired of any one variety. If you have small bits of left-over chicken, chop it fine, pour over it the left-over chicken gravy and serve it hot on toast. The men will say, "Do make a lot it chicken gravy next time!"

Almost any kind of cold meat may be made into gravy and served on toast, furnishing an acceptable breakfast.

Have you tried creamed cod-fish on toast? Or stewed tomatoes? Or hot apple sauce? Or green corn cut from the cob and cooked with a lot of cream? It is simply delicious. Of course you've served asparagus on toast; but how about cauliflower? We like that quite as well as asparagus. This is the way we prepare it: First soak it in salt water, then break it into small bits and let it cook slowly until tender, then dress it with butter.

WHY?

—Does Our Printing Go to Every Part of United States —Do the People Request it

Ask Us for the Reason

▣ ▣ ▣

FACTS

The Fruit-Grower can furnish special designs in colors for catalogue covers.

The Fruit-Grower can sell you high-grade paper at a reasonable cost, as we buy our paper by the car load.

The Fruit-Grower can furnish the best halftone cuts, made from original photographs, for use in illustrating the descriptive matter.

The Fruit-Grower can compile your entire catalogue if you so desire, and has the technical knowledge to handle the work intelligently.

The Fruit-Grower has a printing plant complete in every detail for printing catalogues of all kinds, and especially nursery catalogues. and can turn out an order as quickly as good quality work will permit. Our prices are consistent with the work that we give you and our endeavor is always to give quality first place.

Can you offer any reason why we should not have an opportunity to secure your next contract? We want you to write us for estimates, samples and information.

▣ ▣ ▣

CATALOGUES
CIRCULARS
LABELS
BOOKLETS
STATIONERY
ETC.

Write for Samples — Estimates Cheerfully Furnished

THE FRUIT-GROWER
Printing Department
ST. JOSEPH MISSOURI

Make the toast and butter it well, then spread tho cauliflower over it, and over all turn boiling milk that has been seasoned with butter, pepper and salt. This is much nicer than where the cauliflower is cooked in the milk.

Have you ever poached eggs in milk and served them on toast? If not, try it. You'll be glad I suggested it. When the poached eggs have been placed on the toast, pour the hot milk over all.

Green cranberries, stewed in quite a quantity of water, and sweetened just a little, make a most appetizing breakfast when poured over slices of hot buttered toast. We always serve the first pieplant of the season in that way, too.

One day, when we were talking about the varieties of toast we could make, Brother Tom said, "Thank heaven you can't spoil this nice piece of bacon by making it into toast." Mother accepted that as a challenge. She fried the bacon very crisp next morning and pulverized it, then spread it between slices of hot toast, like sandwiches. These were arranged on a platter and hot pork gravy poured over them. Tom's eyes twinkled. "Thank heaven for this toast," he said, as he passed his plate for a second helping. And it was good for the two slices of toast preserved the crispness of the bacon.

GERTRUDE BREEN.

Amateur Doctors.

Isn't it time for some one to sound a note of warning against the amateur doctor? Am I permitted to suggest that there may be danger in the indiscriminate use of our most common of home remedies? At the risk of being mobbed I must say that real danger has arisen from the application of a mere poultice. Not often, perhaps, but even once should cause one to be very sure a poultice is indicated, before applying it. And if we should exercise care where a seemingly harmless poultice is concerned, how much more caution should be exercised in administering the powerful remedies recommended in doctor books, and which so many ladies dispense as freely as they would so many cookies! In many diseases the symptoms are so similar that no inexperienced person should dare prescribe, even if they do "seem exactly like those laid down in the book," for medicines that would help one disease might prove an active poison to another.

I think there are many, besides myself, who would really like to be protected from the dear relative or friend who is forever ready with some favorite nostrum for each and every disease under the sun. It has always been tried "hundreds of times for just such cases, and never yet known to fail."

There is an old lady, aunt by courtesy, who is the amateur doctor in our family and whose prescriptions I have for years tried to evade—generally in vain. She is very strong willed, very sure she is right, very determined to be obeyed, as she is very apt to be, for the easiest way for the poor patient is to swallow her concoctions and have faith that he won't die until his time comes, whatever he takes.

My belief is that any disease that rest, sleep, diet, nature and a "severe letting alone" will not remedy, had best be entrusted to some one who has made of diseases and their care a special study. M. E. W.

Hard Times Stories.

(Continued from last month)

In the year 1894, we rented our farm and moved to Blue Springs, Neb., but as the crops were short that year, we got very little rent, and, having left some stock on the farm, our share had to be used to help feed the cattle, so that nothing was left for our support. The next year, we decided to take the farm ourselves, so moved back in February. We worked hard, but raised nothing; and had to go into debt to get some corn meal, which was cheaper than flour. Finally, however, I got sick from eating nothing but corn meal, so we bought a sack of flour We sold nothing from the farm that year, but a small calf for five dollars. We really ought to have eaten that calf ourselves; but the good Lord kept us all from being sick, so we had no doctor's bills to pay. With a few clothes left over from previous years, we managed to pull through, and we have been thankful ever since for the lessons learned from this experience. We did not have money enough, many a time, to buy a postage stamp. We wanted a hoe, to try and make a few vegetables grow, so we scoured the prairies and pastures, gathering up all the old bones we could find; these we sold, and got the hoe, but our work was all in vain, for the hot winds came, and blasted our hopes, by ruining our garden. We had three small children at this time, one little girl and two little boys. One day the eldest of the boys said to me, "Mama, can't you make us something good to eat?" I said "Yes, my lad, if I can make it out of flour and water;" but that hurt me more than enduring the hardships. We survived all these, though, and hope to live to be a blessing to our community; we have been here now twenty-six years, and have no idea that we shall ever again have to go through the trials and hardships that we experienced in former years—Mrs. Hardship.

I was born in 1853, in Indiana, and moved with my father and mother to Iowa. There were eleven of us children; my two oldest brothers went to war, taking part of father's help with them. My mother died when I was five years old, which made it hard for us children. Father was a blacksmith by trade, and had to go twenty miles to mill with an ox-team. Many times have I sat down to a meal of just mush and water sweetened with a little sorghum molasses, but I was glad to get that. As for clothing that was scarce; I wore my sister's waist for a shirt, and part of the time wore father's pants. I suppose he had two pairs. I remember the big rook on the pants, as they were too long for me. I never had a pair of boots until I was eight years old, and then father got them from a hired hand, and they were number 8. But I felt very big when I got into the mud, and had to put my fingers in the ears to get out of it. As for school, I went but very little.—G. E. M.

I was born in Denmark in 1862, and, my parents being very poor, it became necessary to "paddle my own canoe" at a very early age. In the autumn of 1878, I was taken very ill, and was confined to my bed for six months; for four successive years my health was poor, but, nevertheless, I was obliged to hire out to get my living. Gradually I regained my strength, and in the spring of the year 1885, I crossed the Atlantic. Arriving in New York, I procured a ticket to Chicago for $1.00, and when I reached that city I had just 25 cents left, without a friend, and among people speaking a strange language. I took my belongings on my back, and left the city, in a short time finding people of my own nationality. No noteworthy incident occurred until the year 1897; I had been canvassing for different publications for five years, and my health was almost broken down; my pocket book was empty. In this condition I needed a home, and filed a claim on eighty acres in the Turtle Mountains, North Dakota. Having lost one horse during the summer I had but one left, (twenty-two years old.) In the spring of 1898 a neighbor broke a patch of ground which was planted to potatoes; I spaded up between the trees for vegetables; and thus my career as a gardener began. In June I was married; after this I had eight successive boils in the armpit. My wife also had a few. We earned some money by picking raspberries in the woods. On July 20th our potatoes froze, and, as a finishing touch for that year, my horse, one recently bought, was taken sick and died. I worked some that threshing time, but was able to get very little cash, so took an old horse as part pay. In 1900, I bought another horse, the old one having died; early in winter we lost one hundred bushels of potatoes, and the following summer the horse died quite unexpectedly and before he was paid for. The next three years were prosperous, and in the fall of 1904, I built a house, expecting to live there for years. The following February and March I was confined to my bed through illness, and in that same year, "trouble" broke out, and I was compelled to leave home. For one-half year we lived with my mother-in-law, in central North Dakota, but there, I contracted rheumatism, and it became necessary for me to seek a warmer and dryer climate. As I had been unable to work for a year, the resources were rather low, but enough money was collected to take us to New Mexico, where we arrived in November, 1907. Considering that times were very hard we succeeded fairly well the first year. In 1909 I worked a farm on shares, but in the spring of that year, I was bereft of all that was near and dear to me. The summer was very dry and the crops light throughout the Southwest. In conclusion I will say that the happiest period of my life was when my wife and I struggled together to make a home.

" "Tis love that makes us happy,
'Tis love that smoothes the way."

—Dane,

(Concluded next month)

$1 Worth for 25c

We have a few hundreds of the Brother Jonathan series of fruit booklets, of which we sold thousands a few years ago, and want to close them out quickly. These books originally sold at 25c each, and Fruit-Grower readers took thousands of them at that price.

We Now Offer Four of These Books, postpaid, for 25c

Select the numbers you want, and send your order today, for there are only a few of several numbers. Orders will be filled as they are received, and if any number you select cannot be furnished, we reserve the right to send another number instead. Here is the list of those we can furnish now:

No. 2—A Treatise on Spraying. Tells all about how to fight insects and diseases which attack apples and strawberries.

No. 3—Strawberries and How to Grow Them. A dandy little book telling how to grow this most valuable fruit.

No. 4—Gardening. A practical little booklet which discusses all phases of gardening, including making and management of hotbeds.

No. 5—Packing and Marketing of Fruits. This book takes up the problem of packing and marketing in a common-sense manner.

No. 6—Bush Fruits. A booklet which discusses the culture of raspberries, blackberries, gooseberries, etc.

No. 7—Grapes. This booklet discusses planting and care of vineyards, and illustrates the famous Munson system of training the vines. Only 75 copies of this number are available.

No. 8—Pruning Booklet. Discusses the whys and wherefores of pruning fruit trees and shrubbery. Only 50 copies available.

No. 12—The Corn Book. A little book containing valuable information on corn culture, including chapters on seed selection.

Order These Books at the Rate of Four for 25 Cents

Send us list of the numbers you want, and act quickly, so that you will be sure of getting the numbers you want. Here's a real bargain, for thousands of these booklets were sold at 25c each, and every purchaser received his money's worth. Send order today to

THE FRUIT-GROWER, Book Dept., ST. JOSEPH, MISSOURI

The Safe Investment of Your Money

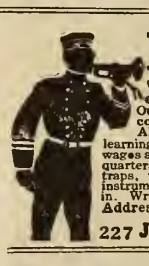
A company that has withstood the test of time for fifteen years, growing stronger each year through prosperity and panics, is a safe place for your funds. Our record is one of uninterrupted success for a long period under one management, with increasing strength and security assured. Our

7% Gold Bonds

provide an absolutely safe investment with a fixed income. Interest is payable semi-annually. These bonds are in the denomination of $100 and have coupon attached. They are secured by first mortgage on our real estate and all other property, including The Fruit-Grower.

If you are considering the investment of funds, the security of principal is the first requirement and we can satisfy you, as we have many other readers of The Fruit-Grower, who are now drawing interest on our bonds. Send check for the amount you have to invest and we will forward the bonds by registered mail or express; or we will send the bonds to your banker and you may give him the money for them. Write today for some of these bonds. We refer you by permission to the First National Bank of St. Joseph. Address

THE FRUIT-GROWER, St. Joseph, Mo.



Learn to Play

We give FREE Set of Lessons with every string or wind instrument. Our self-learning method is simple, correct and complete. You need no teacher or experience. All that is required is an instrument and our self-learning lessons. A musician can always make big wages and playing is a pleasure besides. We are headquarters for cornets, horns, clarinets, flutes, drums, traps, violins and all kinds of band and orchestra instruments. Let us know which you are interested in. Write for our free musical instrument catalogue. Address **JENKINS MUSIC CO.**

227 Jenkins Bldg., Kansas City, Mo.

BE A REPORTER FOR THE M.S.I.A. **EARN $6 to $15 A Day!**

Any one can secure the information we want. Send stamp for particulars. **M. S. I. A. Association,** 124 Association Building, Indianapolis, Indiana

The UPLANDS of ARKANSAS

$15 An Acre

$600 (Payable a Few Dollars Monthly) Will Make You the Owner of 40 Acres of Fruit Land As Fine As Any in the World

Reliable reports state that Arkansas is to have the biggest peach crop in its history—this in contrast with other fruit sections where only a partial yield will be obtained. It means that Arkansas fruit growers will repeat what they have been doing consistently for many years; that is, making a larger net profit on their fruit than orchard owners in nearly any other section. Everyone knows that the demand for Arkansas fruit is growing every year. The profits that are actually being made from well-cared-for orchards are almost unbelievable.

ALREADY WE HAVE SOLD 20,000 ACRES

And of all localities in this wonderful state that hold out great promise to fruit growers, none has more advantages than the Uplands of Arkansas. This is a 35,000-acre tract of land that the Fort Smith Lumber Co. began selling in small tracts a little over a year ago, at the exceedingly low price of $15 an acre. No better proof of the merit of this property could be had than the fact that in fourteen months we have actually sold 20,000 acres of the land in tracts ranging from 40 acres up. As we have explained in former advertisements, the reason the price is so low is because this company is in the lumber, not the land business. We purchased this tract many years ago for the lumber that was on it. This having been cut away, the land was idle, an immense spread of very productive soil that needed only development to cause it to yield as abundantly as any farming locality in the world.

WE WISH TO SELL THE LAND QUICKLY

We have no desire to make an exorbitant profit on the property—our plain purpose in making so low a price and offering the other advantages contained in our contract is to sell the land quickly and with as little trouble as possible.

Fruit land in Oregon is bringing from $400 an acre up; in Colorado from $400 to $2,500 per acre. In both of these localities more money is being paid yearly for irrigation privileges than the sum total of the cost of the land we are offering in Arkansas. And yet we challenge any expert fruit man to show why the Oregon or Colorado lands are better adapted for fruit than our property. We have the advantage of a plentiful and a certain rainfall; the advantage of a mild southern climate, which almost eliminates the danger of frost and smudging is seldom or never needed. Furthermore, there is the advantage of being able to conduct diversified farming, using part of your property for fruit, a part for the raising of other agricultural products, and a part for dairy farming and chicken raising. There is no locality in the United States better adapted for these latter two pursuits than this section.

Important Advantages

SOIL — Rich, deep, red loam, heavily impregnated with iron.

RAINFALL — Always plentiful; drouths unknown here.

LOCATION—Center of Arkansas, midway between Little Rock and Fort Smith. No part of the land is more than 2½ miles from the main line of the Rock Island Railway.

CLIMATE—Averages 85 degrees in summer and 40 in winter, always mild. Only 30 miles from Hot Springs, America's greatest health resort. Altitude 1,100 feet — no fever; no mosquitoes; no more healthful climate anywhere.

FREE LIFE INSURANCE—Upon the death of the purchaser of any part of the Fort Smith Lumber Company's tract, the company will give a clear deed of title to his beneficiaries, providing any and all payments in arrear at time of death be paid up in full. In other words, your family will own the land without further payment.

NON-FORFEITURE — Our contract provides that when a purchaser through an accident or adverse circumstances ceases the payments stipulated in his contract, the Company will give him the equivalent in land of the money he has already paid in.

OUR ASSISTANCE — We give settlers on our land every reasonable aid. We will sell him lumber, fruit trees and other necessities at wholesale, and we will give them our personal aid for any other reasonable cause.

EASY TERMS—We will give you six years to pay for 40 acres—in other words, you can pay for the land while you are developing it. We require a cash deposit of $3 per acre (payable in monthly terms, if desirable) before purchasers are entitled to the benefits of our contract. After this amount has been paid in you can finish the payments of your land at the rate of $7.86 monthly, which includes taxes and interest.

WHAT ONE MAN MADE ON STRAWBERRIES

As an instance of one productive side line, we call attention to the fact that one of the settlers on our property this year planted 6,000 strawberry plants which cost him about $3, and have brought $250 worth of berries.

Location, railway facilities, water, rainfall, climate, accessibility to great markets and soil—for all of these things, the fruit grower or farmer could not be situated to better advantage than in the Uplands of Arkansas.

Last summer, while many sections were being blighted by devastating drouths, the Uplands of Arkansas were producting banner crops. The government's report of rainfall for our section last summer was: April, 6.64; May, 1.54; June, 1.38; July, 2.92; total, 13.48 inches.

IMPORTANT MARKETS EASILY ACCESSIBLE

On account of the climate crops mature much earlier than in other sections. Important markets are close and easily accessible. No portion of our land is more than 2½ miles from the main line of the Rock Island, and fruit leaving our section one morning can be placed in Chicago, St. Louis or Kansas City the next. Memphis, 200 miles to the East, offers water transportation to any part of the world. Another definite advantage is the climate, which is positively unsurpassed for health and comfort. The altitude is 1,100 feet—this means that the atmosphere is always dry and healthful—high enough to bring it within reach of the Gulf Coast breezes and out of the swampy, malaria-breeding river bottoms. Malaria, typhoid and other kindred diseases are unheard of; Hot Springs, the greatest health resort in the United States, is only 30 miles south of us. Children can live out of doors practically the year round; cattle and hogs can be pastured every month in the year; the farmer saves immense amounts as represented in barns, sheds, fuel and clothing.

SURE TO INCREASE IN VALUE

Then there is the investment advantage; Arkansas property is increasing in value at an amazing rate. A few years from now you will not be able to buy land anywhere in this state for as small a price as we are now offering. It is not too much to say that the value of this land will increase ten times in the next ten years. Arkansas is attracting attention all over the country.

There need be no doubt in your mind as to the truth of the statements we make in this advertisement, or of the reliability of the company which sets these facts down. You can easily investigate our responsibility by writing to any of the following: The American National Bank, Fort Smith, Ark. (J. W. M. Boone, president); Badger Lumber Co., Kansas City, Mo. (L. L. Seibel, president); First National Bank, Kansas City, Mo. (E. F. Swinney, president); New England National Bank, Kansas City, Mo. (J. F. Downing, president); Pioneer Trust Co., Kansas City (Walton Holmes, president), or by referring to Dun's or Bradstreet's at Plainview, Ark.

IMPORTANT—A representative of The Fruit-Grower has personally visited and investigated this land and pronounced it unexcelled for fruit growing purposes. A copy of his report will be sent you on request.

PHIL R. TOLL

Fort Smith Lumber Co.

204 Midland Building Kansas City, Mo.

Extracts From Letters We Have Received

"I have lived in this section fifteen years and consider the opportunities for the poor man greater in this section than in any other part of the United States."—Extract from a letter from Mr. D. F. Towell, Ola, Ark.

"I consider this land to be worth twice what I paid for it."—Extract from a letter from Mr. A. J. Witt, Little Rock, Ark.

"Any crop known to the American farmer can be grown here, and I consider I made one of the best investments of my life when I bought the quarter section from you."—Extract from a letter from Mr. D. W. Parker, Ola, Ark.

"I bought this land at $15 an acre, and think in five years it will readily sell for $100 per acre."—Extract from a letter from Mr. J. C. Witt, Pine Bluff, Ark.

"We have an ideal climate and the best of water."—Extract from a letter from W. R. Brewer, M. D., Ola, Ark.

"I am a land owner in this county, and I can honestly recommend this land to the investor and the homeseeker."—Extract from a letter of Mr. J. C. Tawney, Jr., Ola, Ark.

"The best evidence of my belief in your proposition is the fact that I purchased forty acres each, for myself, my father and two brothers."—Extract from a letter from Mr. Otis Stark, Kansas City, Mo.

"A great advantage of this land is the transportation facilities—12 to 24 hours to the leading markets in the United States."—Extract from a letter from Mr. Opal N. Harkey, Ola, Ark.

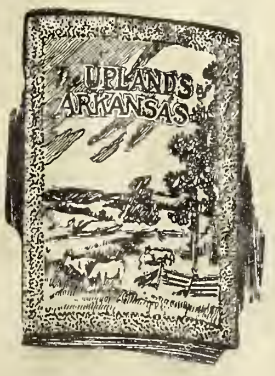
"I consider this land the very best fruit land in the state, being principally on the north slope, which is a sure protection from frost in the late spring."—Extract from a letter from Mr. A. L. George, Ola, Ark.

"I have had an offer of $1,800 for the very same land that I purchased from you for $600."—Extract from a letter from Mr. C. P. Hopkins, Russellville, Ark.

"I saw stock farms where fine horses and mules were raised, and sheep, hogs and cattle thriving. They have a fine climate and stock grazo the year around. The Fort Smith Lumber Company have the finest proposition for a poor man that I ever saw, and great numbers are taking advantage of it."—Extract from a letter from Mr. G. W. Myers, Barry, Ill.

"The most exacting farmer or agriculturist and horticulturist can be satisfied in this tract of 35,000 acres that is being offered by the Fort Smith Lumber Company. The company have not overstated the proposition. It is better than advertised."—Extract from a letter from Mr. H. H. Graham, Kansas City, Mo.

"I do not think there could be any finer ground for fruit and chickens than the Uplands that I went over, which the Fort Smith Lumber Company is offering for sale. The water is the best that I ever drank. The lay of the land reminds me very much of the agricultural lands of Illinois and Indiana."—Extract from a letter from Mr. I. H. Guber, Kansas City, Mo.



SEND FOR OUR FREE BOOKLET

It gives all the facts, and is a conservative statement of what our land offers and contains many illustrations taken on the property. Cut off the coupon and send it to us. The book will be sent you by return mail.

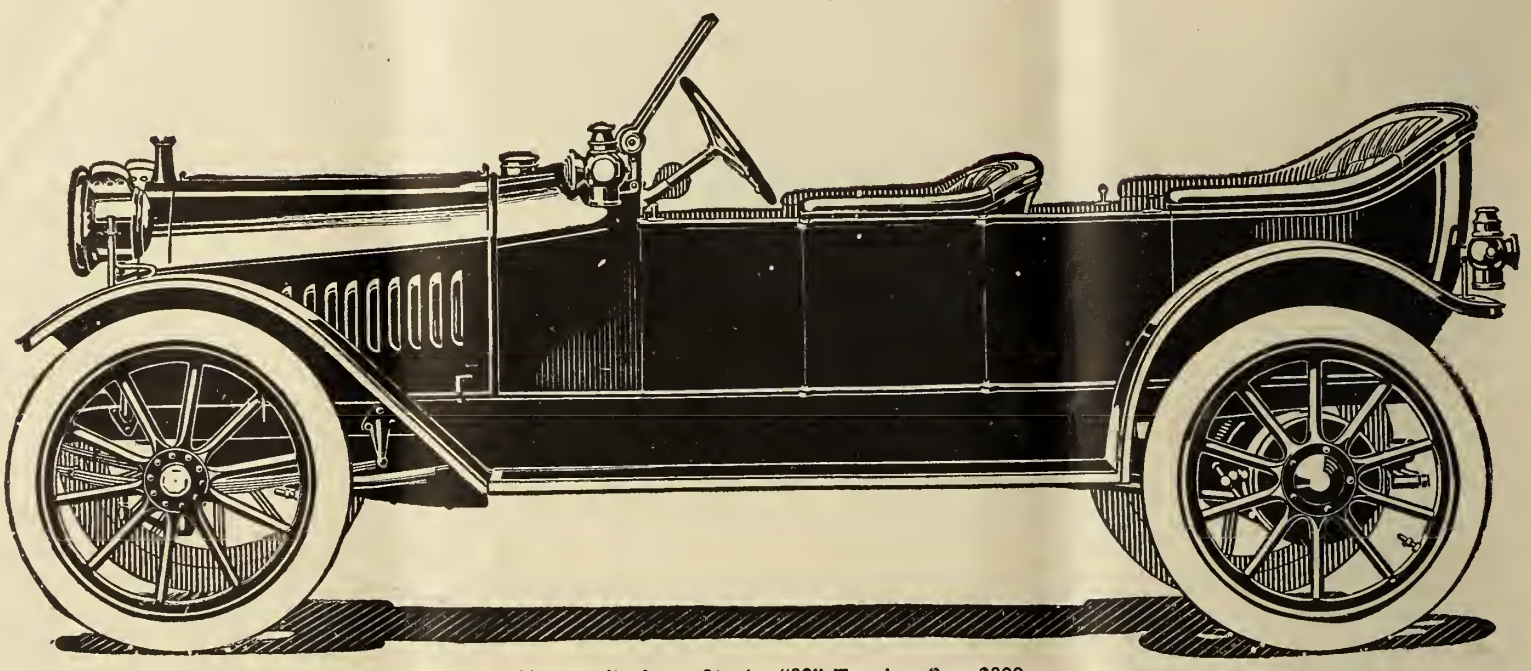
NAME.....

ADDRESS.....

F-G—5

Hupmobile

The deeper you go into detail the greater will grow your regard



Hupmobile Long-Stroke "32" Touring Car, $900

F. O. B. Detroit, including equipment of windshield, gas lamps and generator, oil lamps, tools and horn. Unit power plant, four cylinder motor, 3¼-inch bore x 5½-inch stroke; three speeds forward, and reverse; sliding gears, 13-inch multiple disc clutch; three bearing crank shaft, full floating rear axle; center control; Bosch magneto; 106-inch wheelbase; 32x 3½-inch tires; Color, Standard Hupmobile Blue.

You will admit that the inside—not the outward appearance of the car—establishes its true value.

For this reason we ask you not to let your first favorable impression end with your admiration for the graceful design, the low strong lines, the deep comfortable upholstery of the long-stroke Hupmobile. We had much rather have you go deeper into this car and examine its motor, transmission and axle construction; for your good opinion of the car will surely increase in proportion to the care with which you study its parts.

First, last and all the time let us emphasize the pulling power of this extraordinary car.

For a motor car's ability to get over the road—to make the grades—to haul the load—is truthfully defined by its pulling power and by nothing else.

These are the requisites you will want in a motor car—in addition to style, comfort and economy, all of which the long-stroke Hupmobile "32" possesses in a high degree.

What Makes Pulling Power

The pulling power depends upon these important factors:

First—The relation of piston stroke to cylinder bore.

Second—The design of the motor.

Third—The efficiency of the carburetor.

Fourth—The simplicity of the chassis construction.

Fifth—The degree to which friction is reduced.

Sixth—The weight of the car.

Let the dealer show you how

we have accomplished these essentials in the Hupmobile "32."

First—The stroke is neither too long nor too short, but in ratio to the bore as 1.7 is to 1; the mean average that has been most widely established in European practice.

Second—The cylinders of the motor are cast en bloc; the valves at the side protected from dust and dirt.

Three liberal crank shaft bearings are provided to preclude the possibility of undue strain in that important part.

Third—The carburetion is absolutely automatic, insuring correct mixture at all speeds and under all loads without adjustment.

Fourth—The chassis clean of every complication; the motor, clutch and transmission are a compact weight saving unit, permanently aligned and dispensing with a shaft and universal joint between clutch and transmission.

Fifth—Friction is reduced to the limit by the finest domestic and imported ball and roller bearings; there is but one universal joint between transmission and full floating rear axle, giving practically straight line drive and the least possible lost motion in the transmission of power.

Sixth—The weight of the car is from two to three hundred pounds under that of most cars of equal size and grade, which means that much less dead weight to waste power.

Each of these points is an unusual advantage; collectively, they enable the motor to give its maximum power and set the Hupmobile "32" apart and above cars of its size and price.

After you have examined these points, if you will let our dealer drive you in this car, and see its pulling power triumph over sand and mud that would stall a motor of ordinary bore and stroke, you will need no further demonstration.

The 20 Horse-Power Cars

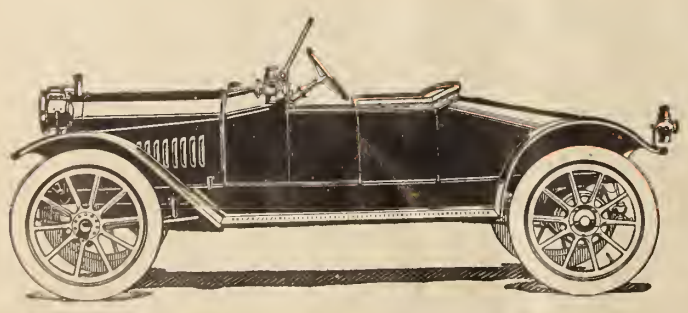
The 20 horse-power cars have the enthusiastic friendship of over fifteen thousand owners in all parts of the world. The motor in the runabout, depicted below is identical with that which carried a Hupmobile world-touring car around the world. A car of this type has withstood successfully nearly a year of rough-riding service in army maneuvers, driven by Major Dickson, 26th Infantry, U. S. A.

Eighty per cent of the new sales of this car come through the recommendations of owners. So far as we know every Hupmobile that has ever been manufactured is still in running condition, barring a few that have been destroyed by fire or accident.

Graceful in style, easy to handle, wonderfully economical in upkeep, this car retains its distinction as a standard runabout type for town and country use; is a favorite with doctors, business men and salesmen in their daily work; is popular with women and the more youthful drivers on account of its extreme simplicity and safety, and graces the garages of more people of wealth and fashion than any other small car that was ever marketed.

Visit the nearest dealer in your territory and study these facts for yourself. Then you will realize what renders the price and performance of the Hupmobile extraordinary.

Hupp Motor Car Company, 1210 Milwaukee Avenue, Detroit, Michigan

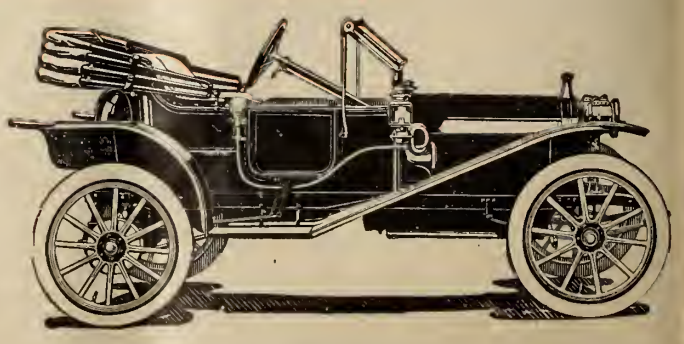


Hupmobile "32" Roadster, $900

F. O. B. Detroit, same equipment and specifications, except completely enclosed dust-proof rear compartment, with room for extra baggage, casings, tools and trunk. Built close to the ground, it clings to the road with the least possible side sway or wind resistance. Illustrated at left.

Hupmobile "20" Runabout, $750

F. O. .B Detroit, including equipment of top windshield, gas lamps, generator, oil lamps, tools and horn; 4 cylinders, 20 h. p., sliding gears, Bosch magneto. Roadster, with 110-inch wheelbase, $850.



WESTERN THE FRUIT-GROWER

ST. JOSEPH, MISSOURI

Sept. 1912

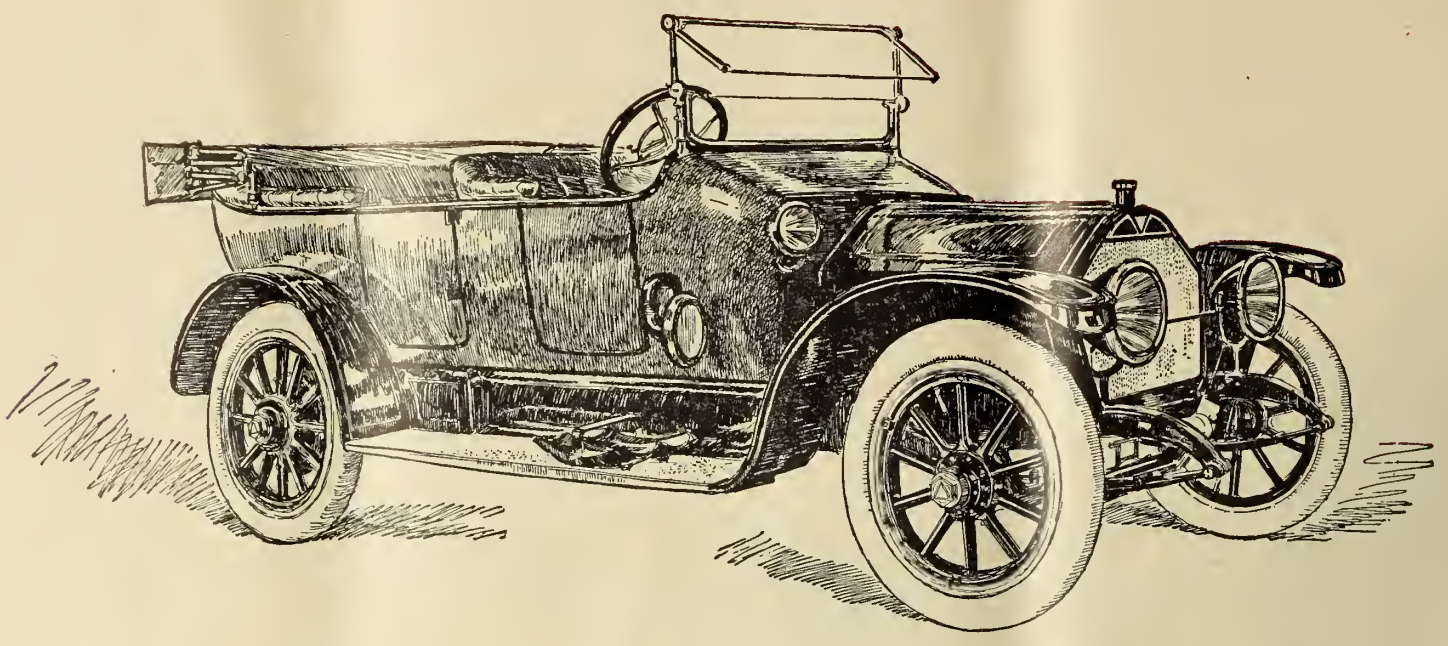
Copyrighted, 1912, by The Fruit-Grower, St. Joseph, Mo.
Title Registered in U. S. Patent Office.

Ten Cents a Copy
One Dollar a Year

Record Breaking Fruit Crops This Year

New HUDSON "37"

Furnished Complete—No Extras to Buy



—The Composite Masterpiece of 48 Leading Engineers

Men who have had a hand in building more than 200,000 automobiles of 97 well-known makes, offer now the car which all joined in building—the HUDSON "37."

It represents the best that each man knows. It is the composite of all these experts and expresses the development possible when the best engineering brains combine.

The Greatest Engineer of All—Their Chief

At the head of these experts is Howard E. Coffin, the foremost automobile engineer of America, recognized here and abroad as the most startlingly original designer the industry has produced.

His genius is an inspiration to his associates. From him they have gained in ability. On account of them he has become a broader and more versatile builder.

What one man lacked in experience, some one of his associates was able to supply. The problems one was unable to solve, others soon found the answer for.

That accounts for the completeness of this car. That accounts for the fact that you will find on it the very things that you have wished to find on an automobile. That explains why this car will do the things which other four-cylinder automobiles have failed to accomplish.

Imagine what strides, what advancement, men of such experience are bound to offer in the car which all have joined in perfecting.

It is all in the one car. It expresses as nearly the limit of four-cylinder construction as has been reached.

Hadn't You Better Wait?

Even if you are impatient to have a new car now, don't you think it better to see the New HUDSON "37" before you buy?

No other car you can get this year, regardless of price, has all the features that are offered in the "37."

Consider for a moment the rapid advancement that has been made in motor car building. It is almost as startling as are the changes in fashion. Think how strange are the open cars of two years ago. What proportion of their original cost do you think such cars now bring? It is not due to wear that their value has declined so much. No, it is the advance that has been made in automobile building since the open cars were put on the market.

With that thought in mind you must recognize the importance of choosing wisely now. Automobiles as now built should be of service for many years and you don't want to feel that you will have to buy a new car in two, three or four years because the one you have just purchased will, at that time, be out of date.

Your Safety in This Choice

No one is likely to soon have many new ideas to offer that these 48 engineers have not already anticipated.

They all combine in saying that the New HUDSON "37" represents the best that there is in four-cylinder construction.

They proved every move they have made through 20,000 miles of gruelling country, mountainous, mud and snow driving.

The most abusive treatment one of the most skilled drivers could give in the thousands of miles he drove the car, without developing a single weakness, or discovering a single detail in which improvement could be made either in design, construction, simplicity, easy riding qualities, responsiveness, safety or power, is a guarantee that you will find it expresses your ideal of what a four-cylinder car should be.

Electric Self-Cranking—Electrically Lighted

Comfort, Beauty, Luxury

Every detail of comfort, beauty and luxury is included. You will find no other automobile to excel the "37" in these particulars.

It is electric-lighted throughout. The successful Delco patented self-cranking system, at the touch of a button within reach of your finger, and the pressure of a pedal, turns over the motor, for 30 minutes if necessary. Oil and gasoline gauges are on the dash.

There is not a single action in the operation of the car which cannot be done from the driver's seat.

Actual brake tests show 43 horsepower. Its rear axle is full floating. The rain vision windshield, the speedometer clock, demountable rims, 12-inch Turkish upholstering and every conceivable detail of refinement, make it the most complete four-cylinder automobile on the market.

Models and Prices. Five-passenger Touring Torpedo or Two-Passenger Roadster, $1875 f. o. b. Detroit.

Go to see about this remarkable automobile today at the nearest HUDSON dealer. Write us for complete details, photographs, etc.

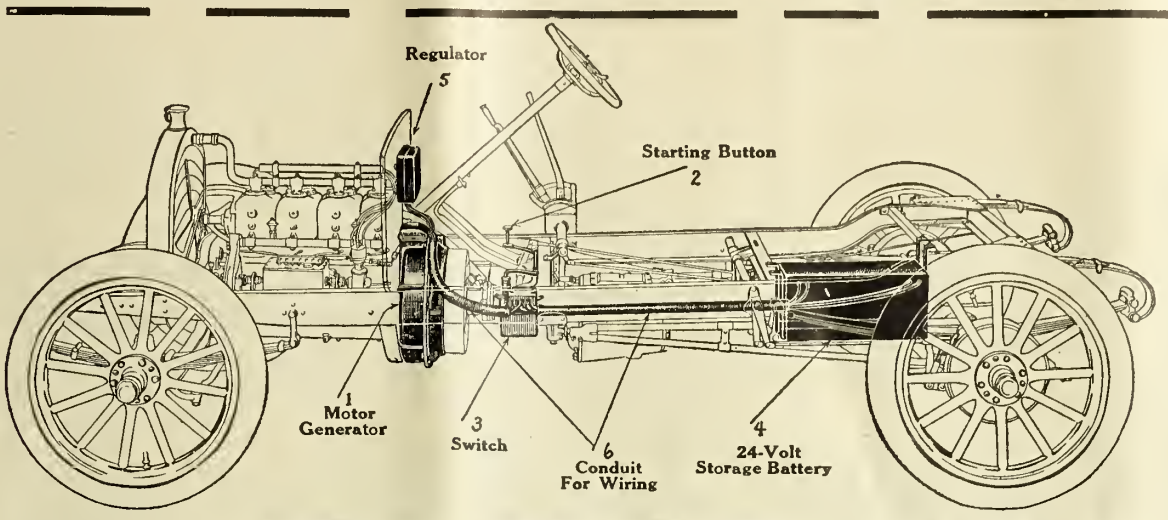
HUDSON MOTOR CAR COMPANY

7447 Jefferson Avenue, Detroit, Michigan

164

Rambler 1913 Cross Country Rambler $1700

With UNIT GASOLINE and ELECTRIC MOTOR



The Cross Country unit gasoline and electric motor showing location of all parts

2. Starting Button. When pressed the electric motor starts the gasoline engine.

3. Switch. With the gasoline engine running, and the starting button released, this switch automatically changes the electric motor into the electric generator for charging the storage battery.

5. Regulator. Automatically makes rate of charging storage battery same at any engine speed.

HERE is a car destined for leadership in 1913. The new unit gasoline and electric motor is bound to give it first place.

The 1912 Cross Country was a popular success. Big sales prove that. One hundred and five per cent—our increase for the year—is a record.

Gasoline and Electric Motor

Think what this new motor means. It combines two widely used and thoroughly known power principles; one, in the perfected Cross Country gasoline engine; the other, in the commonly used electric motor generator.

Now you don't have to get out of your car to start or to light the lamps.

Press a button—you start.

Press another—you light the lamps.

Read the explanation. Then see this new motor. The idea is so simple—the results so pleasing—you will wonder why it has not been done before.

This gasoline electric motor consists of a single unit, combining a 38-horse power, four-cylinder gasoline engine with an electric motor generator.

There is no need for a separate starting device.

From the instant you press the starting button this electric motor generator is creating and storing electric energy for future use.

The usual cast iron fly wheel of an ordinary engine is left off.

Noiseless and Simple

The parts forming the electric motor generator take the place of the fly wheel.

It saves weight, bearings, chains, gears, complicated wiring, and operates as silently as any electric motor.

The only wearing parts, other than those of all gasoline engines, are the motor generator brushes which are six times the necessary size—ample for many times the life of the car.

Except to put water in the batteries it requires no attention.

Ten Inch Upholstery

The Cross Country in appearance had no equal.

In comfort we thought we had reached the limit—but now we have added ten inch upholstery. Of power it has sufficient for every emergency.

It's so flexible you can travel on high gear no faster than a man usually walks, or fifty miles an hour.

To steer is but to touch the wheel. It guides so easily, you are conscious of no effort. Experienced motorists instantly appreciate this advantage.

10,000 Mile Guarantee

Of its reliability there can be no question, vouched for by our ten thousand mile guarantee.

Jeffery service is a reality. It has been gradually perfected by twelve years of actual field work and is now backed by an organization of more than four hundred dealers and branches. One of them is probably near to you.

We make ninety-six per cent of our parts and now have one-half million dollars invested in duplicate parts for the benefit of owners.

Ask your banker or consult Dun and Bradstreet as to the responsibility of this company.

Four Big Features

Here is what you get in the Cross Country:

Appearance that makes you proud of your purchase.

Comfort rare and pleasing.

A gasoline and electric motor in advance of the day.

A guarantee backed by the Jeffery Company.

Could you ask for more in a motor car?

Specifications

38-horse power; ignition, self-generated. Transmission, selective; three forward speeds and reverse. Adjustable taper roller bearings. Front axle I beam; rear axle Rambler type. Springs, front semi-elliptic; rear, three-quarter elliptic. Wheel base 120 inches; tread 56 inches, option 60 inches. Wheels 36 x 4 demountable. Tires U. S. or Goodyear, 36 x 4.

Body styles: Five-passenger, $1700; four-passenger, $1700; Roadster, $1650; Special touring body, five adults and two children; 37 x 4½ inch tires, $1900; Sedan, four-passengers all enclosed, $2500; Gotham five-passenger limousine with two extra cab seats 37 x 4½ inch tires, $2750.

Beauty of Finish

Finished in light Brewster Green with black beading and hair line gold stripe, with wheels to match. Trimmed in nickel, with bonnet, fenders and fillers in black enamel.

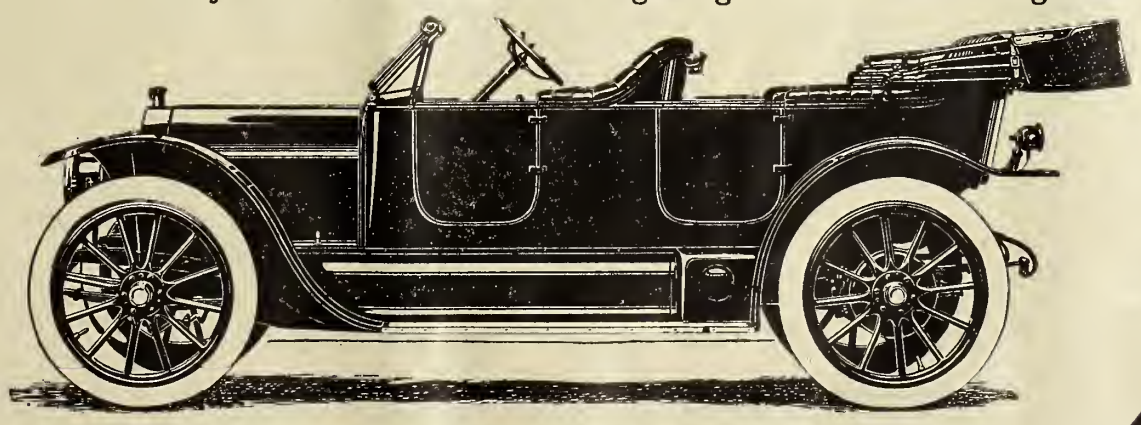
Equipment: Two 9¼ inch electric head lamps, flush electric dash lamps and electric tail lamp, tonneau hinged robe rail, adjustable foot rest, complete tool equipment; top and envelope, $70; wind-shield, $30.

Send For Booklet

The Cross Country with the new unit gasoline and electric motor is now ready for demonstration. You will want the booklet describing this remarkable motor. This coupon will bring it to you at once.

We Guarantee Every Cross Country for 10,000 Miles

Subject to the conditions of the signed guarantee which we give with each car



The Thomas B. Jeffery Company

Main Office and Factory: Kenosha, Wisconsin

Branches: Boston, Chicago, Cleveland, Milwaukee, New York, Philadelphia, San Francisco

The Thomas B. Jeffery Company, Kenosha, Wis.

Send me a copy of the booklet describing your new gasoline and electric motor and the Announcement Number of the Rambler Magazine giving full details of the 1913 Cross Country.

Name.....

....

Address ....

....

WORLD'S BEST APPLE

Stark Delicious

(Every time you see that word—Delicious—it makes you apple hungry)

Why You Should Plant It

Because you can interest apple buyers if you have good apples to offer. Discriminating people who buy apples to eat call for Stark Delicious because they know they will get an apple that will be good clear to the core. Stark Delicious is just as easy to grow as any other apple—no tree will produce more bushels of fruit. For nearly 20 years it has been the market and orchard sensation; among lovers of good apples no other variety is classed with it. There are many reasons why you should plant Stark Delicious, but the fact that it is the biggest money maker should be reason enough for the man who is planting a commercial orchard.

Perfection as an Orchard Tree
As a Shipper, as a KEEPER

In the orchard no tree is more satisfactory. Has proven perfectly hardy in all McIntosh and Wealthy regions. East, west, north and south it is crowding out old favorites and making new marks in the orchardist's profit column. As a shipper it is absolutely the best; and with proper care it will keep till apples come again.

"Delicious is our leader—keeps until August 15th. People ask for Delicious; will have nothing else. They distinguish it by the unique shape." —Aldrich Fruit Co., Chicago.

Perfectly hardy and well suited to our conditions.—A. K. Garner, State Horticulturist, Augusta, Maine.

Splendid grower, fine wood, shapely head. —H. C. Cupp, Adams County, Ill.

26 below zero did not injure buds. Think will stand any Wisconsin winter.—Geo. W. Kellogg, Jefferson County, Wis.

Good bearer, thrifty grower, hardy.—Landon Ayres, Greene County, Tenn.

Heavy and regular bearer. My 9-year-old trees have borne four crops. Nothing stood last year's drouth better.—H. D. Morton, Pope County, Ark.

Tough fiber of wood, formation of tree, and distribution of fruit enable it to carry an immense load.—O. M. Brooks, Chelan County, Wash.

Biggest Profit Earner

Now, Mr. Orchardist, why are you not planting Stark Delicious? Why should you use other sorts, when a little investigation will prove to your satisfaction that Stark Delicious will, year in and year out, pay you bigger returns than any other variety? Don't you want to get into the "big profit" class?

Stark Delicious is our best payer, have received as high as $5.50 per box for them.—M. E. Stewart, Chelan County, Wash.

The Ginter Co., of Boston, have Stark Delicious in their windows, They ask 20 cents each for them. —A. D. Birchard, Suffolk County, Mass.

Always good for $2.50 to $4.00 per box.—P. D. Southworth, Chaves County, N. M.

From 36 9-year-old trees of Stark Delicious F. S. Burgess, of Cashmere, Wash., averaged $56.20 per tree.—Fruit Trade Journal & Produce Record.

Stark Delicious—the grandest of all apples.

Stark Delicious is known wherever apples grow. Since the year 1895 we have recognized its value and have urged its planting. Time has proven our judgment good, and now apple authorities from all sections are enthusiastic and are advising its planting. To meet the tremendous demand for Stark Delicious trees we are growing them by the millions and offer both one-year and two-year-old trees grown in our great apple nurseries in the Ozark country—where in favored spots we have found the finest apple nursery lands in the United States. These nursery farms are located by land experts and the trees we grow there excite the admiration of the nursery world, and the amazement of orchardists.

We are apple specialists and in addition to Stark Delicious grow all good commercial and home-use varieties; among them Jonathan, Stark King David, Grimes Golden, Rome Beauty, Black Ben, Senator, Winesap, Champion, Paragon Winesap, Stayman Winesap, etc. We want to talk to every one who expects to plant trees, vines, bushes—want you to read our literature, know our methods of propagation, growing, digging, packing. Then you will understand why Stark Trees are known as the best trees. If you knew the history of Stark apple trees from the time the scions for propagation were carefully selected to the time trees were packed in boxes for shipment you would use no others.

Are you interested in Stark Delicious and other Stark varieties? If so, fill in and return this coupon.

STARK BRO'S
Nurseries & Orchards Company
Louisiana, Missouri

A record of nearly 100 honorable and successful years in business

Stark trees are good trees. They are well rooted. They are thrifty. They are strong. They are clean. They are ready for business. And they cost no more than others. Remember there are but two kinds of trees —good trees and the other kind. Which do you want in your orchard? If you expect to plant any trees this coming season won't you fill out coupon at the bottom of this column and mail to us today?

Plant That Orchard This Fall

Each season, as experience shows its advantages, fall planting is becoming more popular. As soon as a tree or shrub becomes dormant it can be moved from one place to another and the change of location will affect it little. When set out in the fall bruised roots begin immediately to heal and callus is formed. The trees recover quickly from the moving and soon become firmly established and start growth with the first warm weather.

The ground is generally in better condition as much spring planting is done when the ground is too wet for best results. In recommending fall planting we are voicing not only our own experience but the experience of the best orchardists in the country. Below we quote from a few of the best authorities on this subject:

Over a large part of this country fall planting is practicable. The ground is usually in better condition and the wounds on the roots heal and rootlets are formed ready for growth at the first impulse of spring. If planting can not be done in the fall for any reason get the trees and heel them in until early spring, then they will be on hand just when they are needed.—H. E. VanDeman, Ex-United States Pomologist.

Theoretically autumn affords ideal conditions for transplanting. In the fall, the soi. is warmer than the air. This condition is ideal for root development, thus assisting the newly moved tree to become re-established.—A. T. Erwin, Prof. of Horticulture, Iowa State College.

Over the greater area of this state fall and early winter planting is advisable because the young trees speedily take root and establish themselves, while spring planting is apt to bring the trees into the dry season without having had an opportunity to thus fortify itself.—E. J. Wickson, Dean College of Agriculture, University of California.

For the milder latitudes with their splendid fall weather, comparative leisure, and the soil nearly always in good condition, everything invites us to plant in autumn.—Jno. A. Warder, Author "American Pomology."

It is a good practice to do as much fall planting as possible. Our experience is that a fall planted tree does at least 50% better the first year than one planted in the spring.—C. A. McCue, Horticulturist, New Castle Co., Del.

We wish every man who is planning to plant an orchard this season could see the great blocks of trees growing in our nurseries. We offer trees that are just simply the best that can be grown. We will meet all legitimate competition, quality taken into consideration, and we want to talk to you about your planting plans. We are not coming to planters with a new story but are offering the best trees (Stark Trees) at a price that you can afford to pay. The readers of the Fruit-Grower comprise the up-to-date orchardists of the entire country, men who want the best trees as a foundation for their orchards. That is just exactly what we offer.

Special Service. We maintain in our office a Special Service Department in charge of men of many years experience in nursery and orchard. These men will be glad to help you plan your orchard, select suitable varieties, and assist in any other way. This service is free. Let these men help you with your orchard plans.

STARK BRO'S NURSERIES & ORCHARDS CO.
Louisiana, Missouri. Box 100.

I am interested in Stark Delicious, also in the following varieties:

_____

_____

You may send me your up-to-date literature. I expect to plant _____ trees this coming season.

_____
(Sign your name on this line.)

_____ _____
(Post Office.) (State.)

THE WESTERN FRUIT-GROWER

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Volume 23 | ST. JOSEPH, MISSOURI, SEPTEMBER, 1912 | Number 9

ORCHARDS IN THE EAST

Massachusetts Orchardists Adopting Western Methods—A Visit to Two Model Farms

It is commonly supposed that in all matters of learning, the West still looks to the East for leadership. This isn't entirely true in horticulture, for in Massachusetts we visited two orchards in which Western influences were in evidence. One was the orchard of Mr. A. A. Marshall, Fitchburg, Mass., the other the orchard of the Day Road Orchard Co., near Amherst, of which Profs. F. A. Waugh and F. C. Sears of the Massachusetts Agricultural College are the directors in charge. Both these orchards are partly Western, at least to the extent of planting one-year trees and in the general system of pruning adopted.

The Marshall orchard is doubtless one of the most interesting in all New England. It is a young orchard, the oldest trees being now in their eighth year, and it overturns a lot of theories of what an Eastern orchard should be. The orchard is in sod, soil is never stirred, and some of the Baldwin trees bore ten boxes of apples per tree, the seventh year after planting. If that isn't the rankest kind of heresy, we don't know what it is. This orchard has been developed by A. A. Marshall, who was formerly a traveling salesman, and who came into possession of the farm upon the death of his father and at once decided to make of it a fruit farm, in spite of the obstacles to be overcome The soil of the farm was rich enough, but the rocks were so numerous and so large that ordinary men would have thought it impracticable to try to clear the land. Mr. Marshall started with strawberries and peaches; as fast as a field could be cleared of stones it was planted to strawberries and peach trees. The fanciest kinds of strawberries were grown, and the business was profitable. Mr. Marshall showed us a field from which he has harvested many strawberry crops, but it had cost him $1,200 to remove the stones from three acres before the plants could be set! The land was cheap enough, but it was expensive to get it ready to plant.

When we mildly suggested that New England land was not so cheap, after all, since fruit land cost $400 per acre to get ready for planting, Mr. Marshall said his strawberry crops had paid for the land long ago, so that his investment was returned to him before his apple trees were planted.

At first peaches were grown as the orchard crop, but the severe winter of 1903-1904 killed 7,000 trees in a single night, and then Mr. Marshall began to plant apple trees. Every peach tree was pulled out, and none has been planted since. Planting of apple trees has continued until now the orchard contains over 5,000 trees, and more land is being made ready to plant next spring—if the stones can be removed in time. There are trees of all ages in the orchards, from eight years old downward, for planting has been continuous.

The Marshall orchard is beautifully located just outside the limits of Fitchburg. Land is rolling, but not so much as is the case of many orchards in the Middle West. Location is high, overlooking the town, and air drainage is exceptionally good. Soil is very rich, much of that now being planted being virgin soil, but rocky—oh, so rocky! In clearing about 100 acres Mr. Marshall said his men had removed over 7,000 huge boulders and thousands of loads of smaller stones; in addition to this thousands of stumps had been blown out by dynamite.

If this land were to have been cleared so that it could be cultivated, perhaps the work of clearing would have cost double what it did. Mr. Marshall does not cultivate his trees, and some of the soil in which his trees were planted has never been stirred by a plow—and, unless Mr. Marshall changes his mind, and also removes some more stones, it never will be plowed, either. It is a sod mulch orchard of the most orthodox type, and it is making good. Only enough stones are removed so that a mower can be used to cut the grass; all other stones are allowed to remain.

BEAUTIFUL ROAD LEADING TO FARM OF A. A. MARSHALL, FITCHBURG, MASSACHUSETTS.

At the time of our visit, June 10, redtop and timothy in these orchards was higher than one's knee; here and there appeared patches of clover, and it, too, was making a rank growth. Mr. Marshall had a man oiling up a mowing machine, and the work of cutting the grass began that afternoon.

Mr. Marshall is surely a much criticized man. Many fruitgrowers say he is foolish for not cultivating his trees, and many of his neighbors say he is worse than foolish for not curing his hay crop and selling it. But, instead, this grass is cut twice a year and is allowed to lie and rot where it falls—and at the time of our visit hay was worth $33 per ton in Fitchburg. No wonder the thrifty Yankee farmers think a man is crazy who does not harvest such a crop, when part of the orchard would have cut perhaps two tons of hay per acre.

For a space three to four feet around each tree the soil was kept clean and had evidently been stirred with a hoe. We thought perhaps Mr Marshall was trying a compromise between a cultivated orchard and one in which the sod mulch system is practiced, but he assured us the soil was kept clean for an entirely different reason. It was to guard against fire; he thought it might be possible that fire could get started in the dead grass in the spring, but the bare ground would keep the fire from getting too close to the trees to do any damage; it is fire protection, and not cultivation, he is safer when his bare space is maintained. Throughout the remainder of the orchard the grass is allowed to grow as it will, and it is cut by the mower and allowed to lie where it falls.

When we asked why he did not sell the hay and then return the manure to the soil, Mr. Marshall replied that he could not see the economy of hauling the hay to town and then hauling back the manure—and, besides, he is continually adding manure in addition to the grass, and occasionally a dressing of commercial fertilizer strong in phosphoric acid and potash is given. The manure added is in the form of sweepings from the streets of Fitchburg.

Mr. Marshall plants his apple trees 24x24 feet, and the varieties are principally Baldwin, McIntosh, Sutton Beauty, Wealthy, and some Gravenstein and Delicious. Both one and two-year trees have been planted, but Mr. Marshall prefers the one-year trees, and forms a low head. It is expected that the trees will soon crowd when planted so close, but varieties are so arranged that some of the trees can be removed, leaving solid blocks of certain varieties, the trees standing 48x48 feet.

For instance, one orchard is intended to be a Baldwin orchard eventually, and McIntosh trees are planted as fillers. The Baldwin trees stand 48x48 feet; then every alternate tree in the row is a McIntosh, and then a solid McIntosh row appears between each two Baldwin rows. It may develop that McIntosh is the better money-maker, in which case the Baldwin trees and the solid rows of McIntosh trees can be removed, leaving a McIntosh orchard. In every orchard this plan of mixed planting is followed, so that best-paying varieties can be left when the trees are finally thinned out.

Mr. Marshall digs holes about two feet each way and two feet deep for planting apple trees, he sets in spring and his orchards show a remarkably even stand. As soon as trees are set the ground is seeded down, and it is never plowed thereafter. He finds that McIntosh and Baldwin trees begin to bear at three to four years of age, Wealthy at three years and Sutton Beauty at six. He showed the writer a Baldwin tree which was seven years old in 1911, which bore ten boxes of apples that year. This tree has a good crop of apples set for this season. At the time of our visit the trees had made ten to fourteen inches twig growth, and every tree seemed to be in a very thrifty condition.

"Isn't there danger that your sod-mulch system, coupled with top-dressing with fertilizers, will draw all the

FARM RESIDENCE OF A. A. MARSHALL.
Storage and packing house, garage, etc., are shown on the right of the roadway, which is a regular county road.

EIGHT-YEAR-OLD BALDWIN TREE IN MARSHALL ORCHARD.
Last season, at seven years of age, this tree bore ten bushels of fancy fruit, and has another good crop this year.

roots of your trees near to the surface?" we asked Mr. Marshall.

"Nearly everyone who comes here asks that question," he replied, "but I will show you that the roots are not near the surface."

We went down to a place where water mains were being laid through the orchard, and there we found no roots near the surface, but all were well down, and lots of feeding roots were down at a depth of three feet. In no case did we find roots near enough to the surface to be caught by a plow set at an ordinary depth—but the orchard will not be plowed. Mr. Marshall believes that the grass roots take the moisture from the surface soil, and that the tree roots go deep in order to get moisture. In substantiation of this he said that last summer, when everything was very dry, he dug down in the orchard and had to go to a depth of about two feet before he found soil moist enough to stick together. The grass roots had taken all the moisture from the upper part of the soil. He doesn't believe, therefore, that the roots of his trees will come to the surface—and certainly they don't seem to have come near the top as yet.

At the time of our visit all trees four years old and over were well set with apples and the fruit was very smooth and sound, there being no trace of scab nor any sign of insect injury, except in a part of the orchard there was some evidence of work of cuculio. Mr. Marshall's spraying program is quite elaborate, several extra applications being made necessary by presence of brown-tail and gypsy moth. All trees are sprayed while dormant with lime-sulphur, using the commercial grade at strength of 1 to 9; just before the trees bloom another application of lime-sulphur is made for apple scab, at strength of 1 to 30; the third application is made just after the petals fall, using lime-sulphur at rate of 1 to 100 and arsenate of lead at rate of eight pounds to 100 gallons of water; the fourth application — the one being made when we visited the orchard on June 10—was lime-sulphur, 1 to 100, arsenate of lead, twelve pounds to 100 gallons, the extra strength being on account of gypsy and brown-tail moth; the fifth application, which usually comes about July 4, is four pounds arsenate of lead to fifty gallons of water, this application being for the larvae of brown-tail moth; the sixth and last spraying is given just after the crop is harvested, and is intended to help hold apple scab in check the following year, the solution used being lime-sulphur, 1 to 30.

This is certainly a lot of spraying, but even more must be done, Mr. Marshall says, for the oak trees in the forests adjoining the orchard are being defoliated by the brown-tail and gypsy moths, and they must be regularly sprayed if they are to be saved. These pests are two of the worst ever introduced into this country, because they work on forest trees as well as on fruit trees.

Mr. Marshall's son looks after the spraying, and at the time of our visit was operating a Friend machine with four leads of hose. Two of the leads were fifty feet long and the other two were 100 feet long each. Four rows of trees were taken at a time, and the machine maintained good power throughout the day. The loading station is a very convenient affair, for water is supplied from city mains, more than two miles of which have been laid by Mr. Marshall at his own expense. As one man turns on the water another measures out the desired quantity of lime-sulphur and another puts in the arsenate of lead, at the same time weighing out enough for the next tankful; this is allowed to "soak" while one tankful is being sprayed, and "works up" readily when it is needed.

Mr. Marshall is arranging to supply his apples direct to consumers, where desired, and has arranged his plans with this end in view. He packs his fruit in boxes, and last year had more than 1,800 boxes of extra fancy apples. He has just installed, in basement of his packing house, a cold storage plant, with capacity of 7,000 boxes; this plant is so built that an addition can be erected at any time. As the fruit is brought to the packing house from the orchard it will be graded as to quality and size, and the apples will be placed loosely in the boxes and stored at a temperature of about 32 degrees. No packing will be done at that time, but only apples which are suitable for packing will be put in storage. Later, when there is more time, and as orders for apples are received, the fruit will be packed in boxes.

"The Western man packs his fruit, say, in October, at harvest time, and the package is not opened perhaps until March or April," said Mr. Marshall. "There are abundant opportunities for deterioration within that time, and the customer may be disappointed in the quality of the fruit. In my case, I can sell a man a box of apples or a carload and as every box is packed just before shipment, I can absolutely guarantee the contents of every package."

At the same time Mr. Marshall told us of some of the obstacles which must be overcome before the plan of "producer-to-consumer" works out satisfactorily. He can ship his apples to New York and have them reach there in perfect condition, without transfer. But when the fruit lands in the city, then the trouble begins. The express companies handle the fruit so roughly in making delivery in the city that frequently the box is broken and apples badly bruised before the package reaches its destination. The local delivery problem remains to be worked out before this plan of marketing is entirely successful.

Mr. Marshall's storage plant is somewhat out of the ordinary, and it can be recommended to those who have electricity for power. The whole plant works automatically. The thermostat can be set at any temperature desired, and the machinery will maintain that temperature without the need of an engineer. Suppose the storage room for apples is to be kept at a temperature of 32 degrees; when the temperature rises above that point the motor is started automatically and the refrigeration plant at once lowers the temperature to the desired point, and the machinery is shut down again. This automatic plant is made by the Automatic Re-

MR. MARSHALL'S FARM BUILDINGS.
Large building in foreground is packing house, with cold storage plant in basement, capacity 7,000 bushels. Next building is garage, with room for two automobiles in basement is storage room for spraying materials. In distance is foreman's residence.

VIEW OF YOUNG ORCHARD OF A. A. MARSHALL, FITCHBURG.
This orchard is seeded down to red top, with a cultivated circle of six feet diameter about each tree.

THE WAY OUT
Change of Food Brought Success and Happiness.

An ambitious but delicate girl, after failing to go through school on account of nervousness and hysteria, found in Grape-Nuts the only thing that seemed to build her up and furnish her the peace of health.

"From infancy," she says, "I have not been strong. Being ambitious to learn at any cost I finally got to High School, but soon had to abandon my studies on account of nervous prostration and hysteria.

"My food did not agree with me, I grew thin and despondent. I could not enjoy the simplest social affair for I suffered constantly from nervousness in spite of all sorts of medicines.

"This wretched condition continued until I was twenty-five, when I became interested in the letters of those who had cases like mine and who were getting well by eating Grape-Nuts.

"I had little faith, but procured a box and after the first dish I experienced a peculiar satisfied feeling that I had never gained from any ordinary food. I slept and rested better that night and in a few days began to grow stronger.

"I had a new feeling of peace and restfulness. In a few weeks, to my great joy, the headaches and nervousness left me and life became bright and hopeful. I resumed my studies and later taught ten months with ease —of course using Grape-Nuts every day. It is now four years since I began to use Grape-Nuts, I am the mistress of a happy home, and the old weakness has never returned." Name given by the Postum Co., Battle Creek, Mich.

"There's a reason." Read the little book, "The Road to Wellville," in pkgs.

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

TOP-WORKED TREES IN MARSHALL ORCHARD, FITCHBURG, MASS.
These are Spy trees, top-worked with Gravenstein. The high branch, in center of tree, is part of Spy stock which has not yet been removed.

frigerating Company, Hartford, Conn., but of course it does not work unless electricity can be used for power.

It will be hard to find in all this country a more complete plant than Mr. Marshall has, just as it will be hard to find two men who look after their work more carefully than do Mr. Marshall and his son. Everything is kept up in perfect condition, and the two men give everything their personal attention. They have a force of men working for them, but one or both are on the job all the time. The younger Marshall has been quite successful in top-working apple trees, having taken up the work when an experienced nurseryman failed. In filling an order for trees a nurseryman sent a lot of Northern Spy trees, which were not wanted. They arrived late in the season and were planted, and after the nurseryman had failed in trying to top-graft them, Mr. Marshall took hold of the job and inserted Gravenstein grafts in the trees, and practically every one has made a fine growth. Only part of the Spy top was removed at first, and the remaining top will be cut off next spring and grafted, unless there should be enough scaffold limbs already worked over, in which case the Spy top will be removed altogether.

Young Mr. Marshall studied the packing of apples in boxes and is now recognized as an expert at this work. All apples are packed in boxes. When we asked Mr. Marshall if he would put his second-grade apples in barrels, he replied that he should try not to raise that kind. His experience so far has been most encouraging. With true New England conservatism, he would not say what prices he received for his apples last year.

Every preparation is being made for the rapid extension of the business; all buildings are solid and substantial; the packing house, 42 by 70 feet, three stories high, is equipped with a hot-water heating plant, so that apples can be packed all winter if need be; the garage contains two fine automobiles, a seven-passenger Winton and a five-passenger Cadillac, both of 1912 model. Mr. Marshall is a firm believer in the future of New England apple-growing, provided the growers will practice right methods. He believes his apples are as fine as can be grown anywhere, and doesn't hesitate to say so. He believes there are many places just as good for raising apples in his neighborhood, but says he sometimes despairs of New England farmers waking up to their opportunities.

The Marshall orchard is visited by many fruit men every year, and many of them say the things he is doing simply cannot be done—we might have been tempted to say this ourselves, but we cannot get around the things we can see. The sod-mulch orchard, as Mr. Marshall has handled it, is a success so far, and it is hard to see why, under his conditions, it will not continue to be a success. But this should be remembered: It's a dangerous thing to trust a man to allow over $50 worth of hay per acre to go to waste; most of us would sell our mulch material when the price of hay reaches $35 a ton. J. M. I.

FOUR-YEAR-OLD McINTOSH APPLE TREE.
This tree was well loaded with apples, but they do not show up in the picture. A. A. Marshall, owner of the orchard, stands alongside. Photograph shows height of grass in orchard, just ready for cutting.

in the platforms of the great political parties of the country, was in force in Kansas, the farmers in the Western part of the state could make a profitable use of it this year. In direct contrast to conditions last year, Western Kansas will have plenty of feed this fall and winter but nothing to feed. There is a serious shortage of livestock, 60 per cent decrease in many places, which was caused by the lack of feed last winter.

Ed. H. Webster, dean of agriculture in the Kansas State Agricultural College, has returned from a 1,500-mile motor car trip through twenty-five of the western counties. In speaking of the conditions there he said: "Recent rains have assured good feed crops in all the counties we visited. Now, if these farmers had the livestock they were forced to sell last winter, they would be all right. But they haven't, and furthermore, because of a bad season last year, many of them have exhausted their credit at the banks. They can't buy stock. And because of a light wheat yield this year in some counties, there isn't much prospect of ready money for them later in the fall. Notwithstanding these unfortunate conditions, these farmers would pull through all right if they could borrow some cheap money somewhere.

"What is needed badly at this time are some agricultural credit associations from which these farmers could get money at a low rate of interest. It will be a great boon to Western farmers when the national government or the state or the county is able to lend money to these farmers in critical periods. It will be the making of them. Right now, it would relieve a serious condition."

New Credit Association.

If the system of lending money to farmers which is in force in many European countries, and is advocated

WELL PEOPLE, TOO
Wise Doctor Gives Postum to Convalescents.

A wise doctor tries to give nature its best chance by saving the little strength of the already exhausted patient, and building up wasted energy with simple but powerful nourishment.

"Five years ago," writes a doctor, "I commenced to use Postum in my own family instead of coffee." (It's a well-known fact that tea is just as injurious as coffee because it contains caffeine, the same drug found in coffee.) "I was so well pleased with the results that I had two grocers place it in stock, guaranteeing its sale.

"I then commenced to recommend it to my patients in place of coffee, as a nutritious beverage. The consequence is, every store in town is now selling it, as it has become a household necessity in many homes.

"I'm sure I prescribe Postum as often as any one remedy in the Materia Medica—in almost every case of indigestion and nervousness I treat, and with the best results.

"When I once introduce it into a family, it is quite sure to remain. I shall continue to use it and prescribe it in families where I practice

"In convalescence from pneumonia, typhoid fever and other cases I give it as a liquid, easily absorbed diet. You may use my letter as a reference any way you see fit." Name given by Postum Co., Battle Creek, Mich.

Read "The Road to Wellville" in pkgs. "There's a reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

The roof that stays proof

THERE is one way to make your roof *lastingly* waterproof—lay roofing made of Trinidad Lake asphalt.

This *natural* asphalt, endowed by Nature with permanent oils, has never been successfully imitated by any man-made substance.

The natural oils of this asphalt give life to

Genasco
THE TRINIDAD-LAKE-ASPHALT
Ready Roofing

That is why Genasco lasts. It is real economy to use it on the roof of every farm-building.

Comes in rolls, easy for anybody to lay. Mineral or smooth surface.

Ask your dealer for Genasco. Write us for the helpful Good Roof Guide Book and samples—free.

The Kant-leak Kleet, for smooth-surface roofings, makes seams water-tight without cement, and prevents nail-leaks.

The Barber Asphalt Paving Company
Largest producers of asphalt, and largest manufacturers of ready roofing in the world
Philadelphia
New York San Francisco Chicago

In writing advertisers please mention The Fruit-Grower.

FITZ Overalls

Auto equipment

is incomplete without a suit of Fitz Overalls. These garments are large—easily slipped on over your clothes. A sure protection from grease and dirt in case of emergency, or for shop work.

Free Fitz Book on request.

Burnham-Munger-Root
DRY GOODS CO.
KANSAS CITY, MO.

In writing advertisers please mention The Fruit-Grower.

Coyne Brothers Handle All Kinds of Fruit and Produce
160 Water Street, Chicago, Ill.

MR. MARSHALL'S LAND BEFORE STONES ARE REMOVED.

APPLES AT WINCHESTER

The Soil in the Shenandoah Valley Adapted to Raising Apples of a Very Superior Quality

When the first English-speaking settlement was established in Eastern Virginia, fruit of various kinds was planted and successfully grown. However, for more than a century after the settlement of Jamestown the Great Valley of Virginia, or rather the Shenandoah Valley, lay undiscovered and unknown to Europeans. General Spottswood was the first white man to gaze on this fertile valley and the beautiful stream which bears its name. With this discovery colonization developed very rapidly and within a very few years the Shenandoah Valley was dotted with settlers from the Potomac to the Holston. Farms were rapidly cleared and general agriculture, with its complement of apples, peaches, pears, plums and other orchard and small fruits, were planted and successfully grown. The true value of the Shenandoah Valley, however, as a fruit-growing belt, did not dawn on the early setlers. It was after the close of the Civil War, when a number of men in Botetourt, Rockbridge, Augusta, Warren and other counties, planted what were then considered a few large orchards—that is orchards containing from 200 to 1,000 trees. In due time these orchards came into bearing; the quality of the fruit being so far superior to anything ever placed on the local or export markets, that the Virginia apple soon became one of the favorites in some of the large Eastern and foreign markets. This development continued for a number of years and really represents fruit-growing in Virginia in an experimental stage. It was left for the descendants of these pioneer fruit growers to investigate the adaptability of the soil for fruit growing on a still larger scale, with the result that less than thirty years ago, large commercial orchards were planted in the northern tier of counties. This gradually extended southwest until orchards containing from 2,000 to 6,000 trees were planted in every county between the Potomac and the city of Roanoke. This development has continued on an increasing scale to the present time, with the result that throughout the Shenandoah Valley, within the limits mentioned, are growing more than half the commercial orchards of the State of Virginia, which totals upwards of six million trees.

The topography of this section is rather hilly, or rolling, merging into the Blue Ridge Mountains to the south and east and Alleghanies on the north to that of the Roanoke on the south. The altitude varies from 500 to 4,000 feet, but the best apple land generally is found at an elevation from 900 to 2,000 feet. It would not be correct to state that all of this area is adapted to fruit culture, since the land which produces the best fruit is that found on the mountain slopes or the clay and shale ridges extending through the center of the valley and bordered by the limestone. Therefore, perhaps not more than one-fourth of all this territory is well adapted to the cultivation of the apple and other fruits.

Among the districts that have been thoroughly proven for fruit culture are Roanoke, Troutville, Beuna Vista, Stuart's Draft, Luray, Front Royal, Winchester and Berryville.

Troutville is situated in Botetourt County, about twelve miles north of Roanoke, having an altitude ranging from 1,200 to 2,000 feet. In this section, the Winesap, York Imperial, Delicious, Jonathan and Albemarle Pippin are grown to perfection. Numerous large orchards are in bearing and a large number have been planted and will begin to produce within the next two or three years. Already the annual shipments from Troutville and adjacent stations amounts to about 50,000 barrels in a normal year. When all orchards come into bearing, this will be increased to at least 200,000 barrels.

IN AN ORCHARD NEAR WINCHESTER, VA.

In the vicinity of Buena Vista, Rockbridge County, the number of commercial orchards are limited, but those that now are in bearing produce among the finest York Imperials grown in Virginia. The altitude ranges from 1,000 to 2,000 feet. The soil and climatic conditions are all that could be expected, and each year is seeing more apples grown in this section. The annual production totals about 8,000 barrels, which will be increased to 25,000 within the next five years.

Stuart's Draft, located at the bend of the Shenandoah Valley and near the source of the Shenandoah River, is the largest producing area along the Norfolk & Western Railway, if not in Virginia. A large number of commercial orchards were planted thirty years ago, which now are in full bearing and in prime condition. The total annual production of apples in the Stuart's Draft district at this time is about 75,000 barrels, this will increase to 300,000 barrels within the next four years. A large number of commercial orchards have been planted in this section since the Editor and Business Manager of The Fruit-Grower accompanied the writer on a tour of inspection some three years ago (it is estimated that 1,000,000 trees have been planted and are growing within a radius of fifteen miles of Stuart's Draft).

Large Tracts of Fruit Lands

From 100 to 5,000 acres, excellent drainage, close to railroad station in the Shenandoah Valley Fruit Belt of Virginia, at $10.00 per acre and up. Great opportunities for commercial orchards. Virginia is the third apple-growing State now, and rapidly forging toward first place.

Close Proximity to Largest Eastern Markets

Thirty million people within 300 miles radius, and 10 cents per box, or 30 cents per hundred pounds, pays freight within this area.

$350 Payable in Small Monthly Payments

Will secure an excellent ten-acre apple orchard tract in the beautiful Linda Vista colony near Stuart's Draft, Virginia. Fifty of these tracts already sold, and a large number planted. The Old Dominion State offers every advantage enjoyed by the best fruit-growing sections of the country, and we can put you in touch with parties having large tracts of best fruit or farm lands at about one-tenth the prices asked for same quality of lands elsewhere.

Write now for a copy of our beautifully illustrated booklet, "Virginia, the Home of the Apple;" also a year's subscription to our attractive magazine, "The Southern Homeseeker," and other interesting literature, relative to the wonderful opportunities offered by the New South. Address

F. H. LA BAUME, A. & I. Agent
NORFOLK & WESTERN RY.
Box 3031, Roanoke, Va.

PLANT TREES WITH DU PONT

Red Cross Dynamite

The illustrations herewith are correct reproductions of photos of two-year old Bing Cherry trees planted same day out of same shipment. Similar results have been obtained all over the country. The root diagrams show the reason. You can't afford to plant trees in spaded holes.

Write for Free Booklet

To learn how progressive farmers are using dynamite for removing stumps and boulders, planting and cultivating fruit trees, regenerating barren soil, ditching, draining, excavating and road-making, ask for "Tree Planting Booklet, No. 36

DU PONT POWDER CO.
Pioneer Powder Makers of America WILMINGTON, DEL.

Addresses of experienced agricultural blasters furnished on request, if desired. DuPont Powder Co.

Make Your Own Drain Tile

THE FARMERS' CEMENT TILE MACHINE

Makes tile 3 to 8 inches in diam., 12¼ inches long. One man or boy operates it by hand or power. 500 tile per day by hand, 1,200 by power. Tile thoroughly cured by patent process. No tamping or use of pallets. This machine and tile used by Experiment Stations of Agricultural Colleges and the U. S. Dept. of Agriculture. 5,000 farmers have doubled the yield of land by underdrainage, and saved 75% of cost by using our Machine. You can do the same. Save cost of hauling and breaking. Make perfect tile $3 to $5 per thousand. MACHINE SOLD DIRECT FROM FACTORY TO YOU. TEN DAYS' FREE TRIAL. SEND NOW for 36-page Illustrated Catalogue. Tells you about great benefits of underdrainage, how to take levels and get grades, make and lay your tile at low cost.

FARMERS' CEMENT TILE MACHINE CO., - Box 407, ST. JOHNS, MICH.

SAVE YOUR BACK

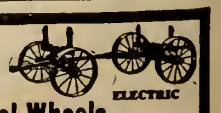
High lifting tires and wears you out. Avoid it by using an

Electric Handy Wagon

Thousands have proved it the easiest and best wagon for farm work. Low down, broad tires, steel wheels—the complete wagon. Strength for all work, no breakdowns and no repairs.

10,000 High Lifts Saved

We will fit your old running gears with



Electric Steel Wheels

and make your wagon into a low down handy wagon. We fit any axle. A set of wheels at little cost gives you a wagon good as new. Write for catalog and particulars.

ELECTRIC WHEEL CO., Box 57, Quincy, Ill.

Among the developments that merit special attention is that of the Linda Vista Orchard Company, which was organized about two years ago by fruit growers from the Pacific Coast. This company is developing a tract of some five hundred acres, well located on the Shenandoah terrace and overlooking the Valley for thirty miles, with the Alleghany Mountains in the distant foreground, while the majestic Blue Ridge Range constitutes a background freize that changes color with the seasons and lends added charm to this section so richly endowed by nature. The company has sub-divided its tract and planted it to apples and other fruit of standard varieties known to thrive in this section—the Albemarle Pippin, York Imperial, Virginia Beauty, Stayman Winesap, Lowry, Delicious, and last but not least, that best of early winter apples, the Grimes Golden grow to perfection in this territory. In my opinion there is no portion of Virginia that is better adapted to the cultivation of the apple, considering all natural contributing conditions, than the country surrounding Stuart's Draft.

MELVIN GREEN'S ORCHARD NEAR WINCHESTER, VA.

Luray, which is the county seat of Page County, is in the heart of a territory peculiarly adapted to the cultivation of the cherry, pear and peach. The apple likewise flourishes, but the development has been comparatively slow in that section. Very few commercial orchards have been planted, but such as have, are proving a success and a profitable investment.

About twenty-five miles farther north is Front Royal, the county seat of Warren County. In this county a large number of commercial orchards have been planted, particularly so from Bentonville on the south to White Post on the north. About five hundred thousand trees are growing in this county, and in 1911, which was an off year, the county shipped about 20,000 barrels of apples. The Stayman Winesap, Northern Spy, Rome Beauty, York Imperial, Black Twig and Grimes Golden thrive in this section.

PACKING APPLES IN J. D. ROBINSON'S ORCHARD, WINCHESTER, VA.

Passing on to Berryville, which is the county seat and largest town in Clarke County, we enter the pioneer orchard belt of Virginia. Dozens of commercial orchards have been planted in this vicinity within the past thirty years, containing from one to ten thousand trees. Clarke is purely a valley county; both the Shenandoah and Potomac Valleys lying within her borders. A large number of wealthy men from New York, Philadelphia, Boston and other cities have purchased country homes in this county. All of them have embarked in the fruit industry with the result that land planted to orchard or adapted to fruit culture sells at a very high figure compared with that at the other points mentioned.

Thus I have described the several apple belts in the Shenandoah Valley, which this year will ship four hundred thousand barrels of apples. Five years hence the total production will be more than one million.

Raw lands adapted to fruit culture may be had at prices ranging from $10 to $50 or more per acre, depending on location and adaptation to fruit. Taxes are low. Climatic conditions are the best; abundance of rainfall; long growing season; pleasant days and cool nights, all of which coupled with a soil having the required chemical composition that insures an inimitable flavor, results in maturing a fruit for which Virginia is world famous. Crispness, thin skin, high color, perfect shape, small core and fine grain are other factors that put our apples in a class by themselves. This, aided by the ever increasing attention given the orchard by the owner, is creating a market for the product North, South, East and West in an ever widening territory. Markets are beginning to specify Virginia fruit for this reason; whereas shipping facilities, proximity to market, low costs of production, cheap and abundant labor are also factors in the rapidly increasing demand and the satisfying profits commanded by our growers.

E. A. SCHUBERT.

Another Big Orchard Begun.

On July 30th another large commercial orchard company was organiced in Patrick County, Virginia under the name of the Blue Ridge Orchard Co., Inc. The company is capitalized at $25,000, has four hundred acres of land and will plant 15,000 to 20,000 apple trees of which 5,000 will be set this fall. Mr. Jas. L. Martin, of Lynchburg, is president and Mr. John J. Morrison, also of Lynchburg, is vice-president of the new company.

"If It's An Inter-State—You've Bought the Best"

From everywhere comes the cry—"Give us a motor car that can be operated simply—conveniently—without discomfort." The answer is,—"The Electric Starting Inter-State"

Electrically started and lighted, the Inter-State at once takes first place over cars that still require the distasteful "hand-cranking" and "safety-match-illumination."

You can rest assured that this reliable system has reached the highest point of development—or we would not put it on the Inter-State.

The fact that we include electric self-starter, electric lights, an engine-driven tire pump and demountable rims is proof that we have built the Inter-State with every thought of your convenience and comfort.

So simple is the Inter-State that you can scarcely realize the tremendous power that the big long stroke motors send throbbing through the multiple disc cork-insert clutch to the rear axle.

You only know that when you press a button at the driver's seat, the Inter-State starts without exertion or discomfort on your part.

You only know that your car will carry you through sand and mud—up hill and down dale—without hesitation or apparent effort.

You only know that *your* money has bought *you* greater value than you could possibly receive in any other car built.

Write today for full information and pictures of the remarkable Inter-State—the car that woman drives in equal skill with man.

Ask for the name of the local Inter-State dealer in your section. He will show you why the Inter-State is really the best car for you to buy.

The Inter-State Automobile Company
1009 First Street, - - Muncie, Indiana
310 S. 18th Street, OMAHA, NEBRASKA

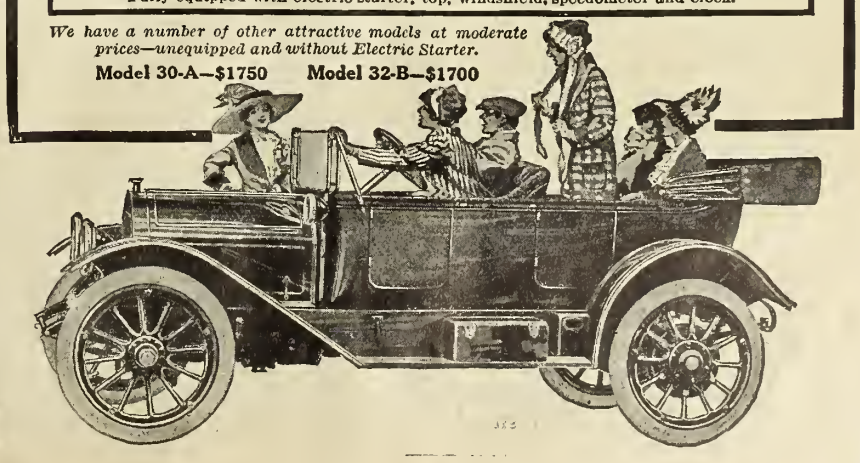
Inter-State Models Now Ready

Model 40—Five Passenger Touring Car,	$2400	Model 50—Seven Passenger Touring Car,	$3400
Model 41—Four Passenger Demi Tonneau,	2400	Model 51—Four Passenger Demi Tonneau,	3400
Model 42—Two Passenger Fore Door Roadster,	2400	Model 52—Two Passenger Fore Door Roadster,	3400
Three distinctive body types on the same chassis with 40 H. P. En Bloc Motor, 4½-in. bore and 5½-in. stroke.		With 50 H. P. T Head Motor, four cylinder cast in pairs. 5-inch bore, 6-inch stroke.	

Fully equipped with electric starter, top, windshield, speedometer and clock.

We have a number of other attractive models at moderate prices—unequipped and without Electric Starter.

Model 30-A—$1750 **Model 32-B—$1700**



THE FRUIT-GROWER

ST. JOSEPH. MISSOURI

Title Registered in U. S. Patent Office. Bro. Jonathan—Trade-Mark—Registered
Copyright, 1912, by The Fruit-Grower, St. Joseph, Mo.

Address all communications and make remittances payable to "The Fruit-Grower,"
Eighth and Charles Sts., St. Joseph, Mo.

WM. G. CAMPBELL, General Manager JAMES M. IRVINE, Managing Editor
E. H. FAVOR, Associate Editor

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....J. C. BILLINGSLEA.....First Nat'l Bank Bldg.
New York Office.....A. H. BILLINGSLEA.....No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS.....821 New York Life Bldg.
St. Louis Office.....A. D. McKINNEY.....Third Nat'l Bank Bldg.
Minneapolis Office.....ROY R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents Agate Line. $7.00 per Inch. Fourteen Lines to an Inch.
Special Rates—Quarter Page, $80.00; Half Page, $150.00; Full Page, $280.00.
No advertising in class generally termed "Objectionable" accepted under any conditions. Editions mailed on first day of month. Forms close on 20th of preceding month, i. e., January forms close December 20th, etc.

An Advertisement in The Fruit-Grower will place you in touch with One Hundred Thousand of the Most Prosperous Farmers in America

SUBSCRIPTION RATES

One Dollar a Year. Three Years, $2.00; Five Years, $3.00; Ten Years, $5.00—In Advance.
Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c, or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list.

Remit Coin, Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 SEPTEMBER, 1912 Number 9

Announcement of Change in Name and Policy

The Fruit-Grower has long been recognized as America's leading high-class farm paper—"The National Farm Magazine." Beginning with the next issue, October, 1912, the name will be changed to The Fruit-Grower and Farmer, and there will be a slight change in the dimensions of the pages, as well as in the nature of the articles.

In the past The Fruit-Grower has featured the art of growing fruit, boosting it in every way to better the orchards and fruit output of the country. With the change in policy The Fruit-Grower and Farmer will continue to feature fruit growing; articles relating to some phase of the fruit industry will still be the principal part of each issue. But in addition, there will be more articles used in the future which will be of interest to the general farmer, rather than to the exclusive fruit grower.

As a class, Fruit-Grower readers are farmers in the broadest meaning of that term. Some of them are fruit specialists, and have no other interest in farming. Most of them, however, grow fruit in conjunction with other farm crops, dairying, poultry or live stock. We have known this for years, but have considered it a better policy to confine our efforts to the single interest of fruit growing, rather than to attempt to handle articles relating to other agricultural lines. This was largely a matter of selfish personal choice, as we are fruit growers, and our personal interest was centered in that industry.

However, our readers and advertisers have repeatedly requested that we adopt a more liberal policy of using articles of widespread agricultural interest, but which only relate indirectly to fruit growing. Dairying, for example, will receive a share of attention, as many of our readers are dairymen in a big way and fruit growers in a small way. Then dairying in combination with fruit growing is becoming more and more important. The culture of legumes, is of more direct interest to the hay producer than the fruit grower; likewise, grain, corn, live stock, horses, hogs, soils, fertilizers, power machinery, etc. These are all vital subjects, and timely articles relating to some one or more will appear regularly hereafter in The Fruit-Grower and Farmer.

Fruit growing will not become a side issue under the new name and policy, but will be given as much attention as in the past, but with the enlargement of our editorial policy we extend to all of our readers, both new and old, the invitation to write to us on any phase of agriculture. For the fall and winter issues we have in preparation a number of valuable articles on important fruit and farm topics, by some of the foremost authorities in the country. We want to hear from others of our readers about their own farms, and receive articles of interest to the general farmer as well as the fruit specialist.

Fairs As Educational Institutions.

Are you expecting to attend a state fair this summer? If you have attended many state fairs, do you believe you always have seen everything that is worth seeing, and received all of the good of the fair that you could? State fairs have become so large that one should plan his trip to the exposition so no time will be lost. You should see the things in which you are especially interested, and let the nonessentials go.

You had better not spend very much time on the "Pike." Most of the side-show attractions at the average fair are not even interesting, and it is a waste of time to spend much time attending them. Plan to visit the things that deal with the line you are following in farming. If you are inerested in hogs, pay especial attention to the hog section of the fair. And you will see man kinds of hogs. Study the breeds that are there, and study especially the men who have raised these hogs. Ask them the methods they have used to produce prize-winners, and see if some of their methods cannot profitably be introduced on your farm. For, after all, the persons who attend a fair, and the ideas they have, are more important than all else.

Pay especial attention to the farm machinery department. More complex and specialized farm machinery is shown at the state fairs every year, and even a man who always attends the state fair easily can learn something new. If you don't have a water supply system on your farm, pay especial attention to the water supply machinery that will be shown. Ask the men in charge all about the methods of operation, and the way the machinery is installed. You will be surprised, unless you have investigated the proposition, to find how easily the systems are to put in and operate, and how cheap they are. There are some mighty good water systems on the market today that are not expensive.

And if you are interested at all in straight farming, notice the way the exhibits from the various sections of the state differ from each other. As the soil and moisture conditions change, the crops change and this change is shown very plainly at a big fair. Talk to the owners of these special farm exhibits. Ask them the methods they used. If you find a man who has made a success of wheat growing, and has won some good prizes, don't let him get away until you have gotten his methods. For, after all, it is the methods that are interesting rather than big crops and fine show material. Fine exhibits that were grown at a financial loss mean but little. But the crops that were grown at a good profit in dollars, and most of the exhibits that are shown at the state fairs belong to this class, are mighty important. Be sure you get the methods the successful growers used.

And if you are interested in dairying, you have a splendid opportunity to get some of the best methods of handling dairy cattle. Find out the methods the owners use of keeping dairy records, how often they use the Babcock Test, and the sanitary methods they use with the milk vessels. Get familiar with the makes of separators and churns, and the whole proposition of handling milk from start to finish. If there is a milking machine at the fair, be sure you see it in operation, and inquire if the use of the machine has any effect on the milk flow.

And no matter what you are interested in, pay especial attention to your special line, and get the methods that were used to get the results. And then see if some of those methods cannot profitably be used on your farm. For that is the mission and use of the efficient fair.

Killing the Goose.

The freight rate on apples from Mississippi River points, from St. Louis, Quincy and intermediate points, to St. Paul and Minneapolis, is 21 cents per hundred pounds. Central Illinois points get the same rate to the Twin Cities. This same rate formerly applied from Kansas City and St. Joseph to Minnesota points, but the rate has been advanced to 28 cents per hundred pounds.

The reason given by the railroads for this discrimination against the Missouri River territory is that the St. Louis territory has river competition, whereas the other district has not. In other words, where the railroads have to make a low price, they do so, and where they have no water competition they make the shipper pay more.

What is the result? With a big crop of apples in the Missouri River territory, the growers and shippers are discriminated against to the extent of about $25 a carload. Growers must therefore accept a correspondingly lower price for their apples, or keep out of a market which is in their natural territory.

An acre of apple trees, well cared for, will produce a car of freight paying a high rate, and every railroad company in the country is anxious to secure the planting of orchards along their respective lines. It is strange, however, how little attention the roads sometimes pay to the interests of the growers in their territory. Perhaps some of them have not heard of the killing of the goose which laid the golden eggs.

Better Buildings for the Country.

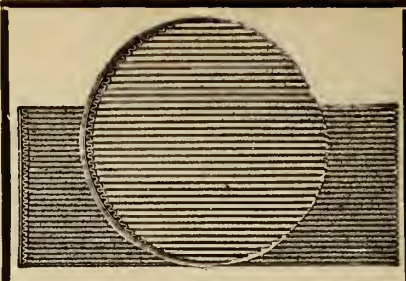
In commenting upon the illustration of the country church near Lewiston, Idaho, which recently appeared in The Fruit-Grower, a prominent agricultural college worker writes us as follows:

"I was specially interested in this picture, for it represents something distinctive, and with some individuality to it along the line of rural architecture. The old country church represents the crudest kind of architectural ideals, and each one is simply a duplicate of the other. We are lacking in good rural types of architecture, something that is in harmony with and a part of the rural environment. This is largely true of the rural school, church and home. Even where the owner of a home spends considerable money for a good building, he usually secures a duplicate of some city house, that runs up into the air as a part of the adaptation of city conditions, where space is very limited."

This criticism is well founded, as we all know. Every building erected in the country should be adapted to the location where it is to be placed. It is safe to say that one should always employ a competent architect to plan a good building, and he should plan it with a view to its environment.

Not long ago, in one of the irrigated districts of the West, we saw a beautiful colonial style home, modeled after some of the old homes of the South, which was placed in the midst of a peach orchard, with scarcely any lawn, the peach trees reaching almost to the door. The house itself was beautiful and would have looked well with a wide sweep of lawn about it, but no one could fail to see how inappropriate it was in such a setting.

Let us get away from ideals which are borrowed from other conditions. Let us build appropriately, and then the objection of our correspondent will not be so well founded Incidentally, when we begin to build convenient, well-planned homes there will be less tendency to leave the country for the city.



APPCO

CORRUGATED
Barrel Caps and Box Lining

Better fiber, deeper corrugations and more of them, and, better gluing makes the APPCO line better for you.

Here is Our F. O. B. St. Louis Price:

	Per 1,000
Single-Faced Caps, 12 inches, -	$4.25
Single-Faced Caps, 14 inches, -	5.50
Single-Faced Caps, 15 inches, -	6.25
Single-Faced Caps, 16½ inches, -	7.00
Double-Faced Caps, 16½ inches, -	10.50
Box Linings, 11 x 18 inches, - - -	6.00

Don't buy until you see a sample of the APPCO line. Write for sample, stating about how many you will use.

We make the entire APPCO line in St. Louis and can ship any quantity at once — instanter.

Try the APPCO Dozen Box for shipping fancy apples this year. Ask for our "Fruit Bulletin" which pictures, describes and prices our entire line of Fruit Packers' Specialties. Address,

American Paper Products Company,
251 Bremen Ave., ST. LOUIS, MO.

In writing advertisers please mention The Fruit-Grower.

Don't Get "Cold Feet" in Marketing the 1912 Apple Crop.

It is very evident that a lot of people are becoming almost hysterical over the 1912 apple crop. When they refer to the quantity of apples to be marketed this season they almost have forty fits, claiming that the crop is so large that fruit will sell for little or nothing. There is great need just now that we get down to earth and consider this problem seriously.

That the crop of 1912 is larger than any crop for several seasons just past is very evident. That it is the largest since the record year 1896, as is claimed by buyers, is not so apparent. In fact, we don't believe the crop is so large as some of the crops of about fifty million barrels which have been harvested since 1896.

In estimating the yield of apples for 1912 one must consider the great decrease in number of apple trees in the Middle West in the last few years. Those who are using such large figures in estimating the size of this year's crop talk very glibly about the great number of trees just coming into bearing in the far Western states. They will tell you almost to a tree how many trees are in bearing in Colorado, Utah, Idaho, Washington and Oregon, but it is significant that they fail to say a word about the millions of trees which have been cut down in the states from Ohio westward to the Rocky Mountains.

All through the so-called corn belt, farmers have been cutting down their apple trees within the past ten years. Ohio, Illinois, Indiana, Missouri, Iowa and Kansas all have fewer apple trees in bearing today than they had ten years ago. Indeed, we saw a report from the orchard and nursery inspector of Ohio to the effect that in ten years the acreage planted to apple trees in that state had decreased 100,000 acres. This will make up for all the trees planted in some of the mountain states.

All these facts should be borne in mind when one is considering the size of the 1912 crop. They will help us to keep from being carried away by some of the enthusiasts.

Reports from the orchards of the Middle West indicate that the apples in those states are, as a rule, of very ordinary quality. A letter from a prominent apple buyer claims that about 90 per cent of the apples of Northwestern Arkansas should go to the cider mill, the canner or the evaporator, because so many of the orchards were not sprayed. Apple scab and blotch have been very bad in many sections, and this has lowered the quality of fruit greatly.

If all the apples grown this year are dumped on the market at one time, the buyers simply cannot handle them at any price, and the market will break badly. A lot of the apples of poor quality will of necessity be sold at once, for it will not keep. Most of it ought to go to the cider mill, but, unfortunately, it will not be disposed of in that manner.

It would seem, from a careful study of the situation, that apples of good quality should be worth a fair price. It is also apparent that this fruit should not all be dumped on the market at harvest time. It will be best for shipping associations to carefully consider these points, and probably arrange to hold back some of the apples for a time, not with a view of cornering the market, but to lengthen the season a little.

It is said some of the shipping associations of the Northwest are panic-stricken and are consigning their apples indiscriminately. This is about the best way to break the market we know of. It will be well for them to keep their heads. Grade and pack the fruit right, and if it is of good-keeping qualities, it ought to bring fair prices. Of course, this applies to other sections than the Northwest. We have a lot of people in this country who will consume apples at fair prices. Let us try to get the fruit properly distributed so that their wants may be supplied.

But little difference, if any, is made in the price of the different qualities of wheat purchased by the elevators in small, country towns to be sent to the terminal markets. As a result, there is but little financial encouragement for a farmer to produce grain of a high quality. There never will be a high, uniform standard of wheat grown in this country until the grain is bought on strictly a quality basis.

The council of grain exchanges in Chicago is encouraging the local elevator men to buy the grain on a quality basis, and is planning to furnish the dealers with samples of the grades of wheat so the local man may grade the grain with some degree of accuracy. That is a fine thing. All grain buyers should co-operate in this matter, and put the buying of grain on strictly a quality basis.

The American Apple Growers' Congress has been reorganized, and an effort will be made to bring it back to its former position. The scope of the association will be broadened from the mere discussion of fruit raising to the agitation for improved packing, refrigerating, marketing methods, and better railroad facilities and rates.

Gooseberries

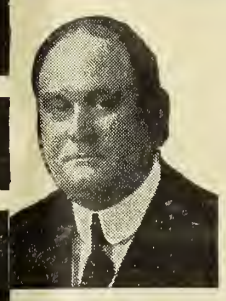
We grow the Oregon Champion, which has proven the most profitable variety wherever tried, in large quantities for the trade; and have a considerable surplus of **Currants** and **Apple**. Also a general line of Nursery Stock and Nursery Supplies.

PORTLAND WHOLESALE NURSERY CO.
122½ Grand Avenue. Portland, Oregon

Trees *and* Fruit

General line of Fruit and Ornamental Trees. The MARTHA Peach, largest on record, 17½ ounces. About 5,000 bushels Kieffer pears for sale. Several hundred barrels of apples, Jonathan, M. B. Twig, Smith, Missouri Pippin and Ben Davis. **ARTHUR L. NORTON**, Nurseryman and Fruit Grower, Clarksville, Mo.

Going to Build?



IF YOU are going to build, remodel or repair you can't afford to be without our big new Catalog of Millwork and Building Material. It's the most complete, most exhaustive book of its kind ever published. 3,000 superb illustrations and 8,000 dollar-saving prices on brand new, up-to-the-minute building material of all kinds. Not a stick of wreckage or second-hand stuff. Everything fresh and new. Why should YOU pay your local dealer 20% to 33 1-3% more for no better if as good lumber, millwork and building material as we ship to you DIRECT? We have everything in lumber, flooring, doors, windows, mouldings, porchwork, building paper, hardware, tinwork, roofing, paint—every item needed to build the finest kind of a home, barn, garage, or outbuilding. **Our Free Plan Book** shows splendid views and floor plans of 50 beautiful modern houses and barns, prices ranging from $360 to $6,000. Shows YOU how to actually save about **half** what you expected to pay. Send for your copy today. We'll tell you how to secure **FREE** expensive plans, working drawings, specifications and list of materials. Just fill in the coupon now.

EVERYTHING IN HOT BED SASH AND GREEN HOUSE BARS

W. W. Mungo *President*

LOOK AT THESE BARGAINS
Selected at Random from Our New Catalog

Wearwell Paint
Perfect guaranteed house paint—single gallon cans only $1.25
We have all kinds of paint at wholesale prices.

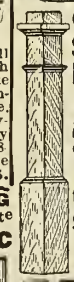
100 feet of **QUARTER ROUND** — Dealers' price $1.00, our price only 25c

Economy Rubber Roofing
1 Ply, 35 Lbs. Guaranteed 5 Years $1.10
2 Ply, 45 Lbs. Guaranteed 7 Years $1.35
3 Ply, 55 Lbs. Guaranteed 10 Years $1.60
Rolls Contain 108 Sq. Ft.

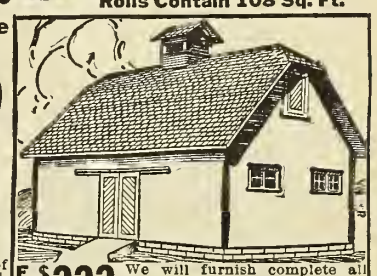
Hardware

Corner Block, Two Cents

Stair Newel
This is just one more of our Big Bargains for only $2.15



Glazed Windows of all kinds ready for quick shipment.
2 light 53c up
4 light 64c up
12 light 71c up
1 light Stall Sash 29c
4 light Barn Sash 41c
All kinds of building hardware. You can't beat our goods or our *wholesale* prices.
Outside Lock Sets, 21c up.



FOR $333 We will furnish complete all lumber, framing timbers, plank flooring, roofing, hardware, sash, paint—everything except masonry, and labor to build this barn, and include plans free. Design **A 145.** There's a big saving here for *you!*

FOR $971 We will furnish complete all lumber, millwork, hardware, spouting, paint—everything except masonry and labor to build this 8 room house, and include plans free. Design **A135.**

Porch Spindles 1c

FANCY FLOORING
CLEAR LATTICE Quarter Sawed White Oak, to cover one sq. ft. 12c

33c Per 100 ft.

Porch Bracket 6c

Porch Newel 4 x 4 4 Ft. 30c

OAK FLOORING — Per Square Foot 5c

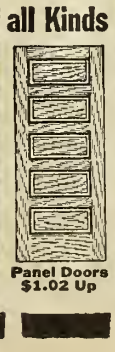
Angle Newel $1.60

HANDSOME COLONNADE $11.50
Yellow Pine in the White — a popular style. Made also in Oak $12.85. Other styles and finishes up to $59.00. Mantels and Consols also.

$24.30 BUYS THIS $40 MANTEL
Equipped with Grate Complete
Don't buy a mantel until you examine the many beautiful designs in our *free* catalog. You will find just what you want at the price you want to pay.

Everything Guaranteed **Doors of all Kinds**

Glass Doors $2.00 Up


Panel Doors $1.02 Up

CHICAGO MILLWORK SUPPLY CO.
AMERICA'S GREATEST SASH AND DOOR HOUSE
1416 WEST 37TH STREET, CHICAGO

2 FREE BOOKS

DATE .....

Chicago Millwork Supply Co.,
1416 West 37th Street
Chicago, Ill.

Gentlemen—Please send your FREE books listed below, to—

Name.....
Address.....

CATALOGUE—No. 75, of Building Material
PLAN BOOK—No. 85, House and Barn Plans

EAST TEXAS ELBERTAS

Bullard, Smith County, Furnished the First Car of Peaches, Selling For $1.05 Per Bushel

East Texas this season marketed 5,000 cars of Elberta peaches, worth $1,500,000. It was the largest movement in the history of the fruit industry in that section. The crop was handled in an admirable way, both in the orchard and on the cars, and by careful distribution found the best markets. Good prices prevailed throughout the season, starting with $1.05 a bushel on July 5 and closing with 65 cents on July 25.

As usual the first full car shipment came from Bullard, in Smith County, being picked from the orchard of Fred J. Sackett. This car was loaded on July 5th, and sold at the season's top price, in Philadelphia.

The writer has seen the orchard of earliest Elbertas and has had pointed out to him the tree from which the very first peach was picked. The forwardness of the Bullard district in fruit production is attributed to the high elevation and the warm character of the rich, red soil of this section. There is no doubt that these influences have their effects. High lands are earlier and red soils are warmer. But the peaches that Mr. Sackett sent to Philadelphia were hastened to maturity as much by good care and cultivation as they were by the soil and altitude. To prove this, the fact is cited that after the Sackett orchard had been gathered and marketed at fancy prices, some of the other growers were just beginning their harvest and were content with lower prices, which always prevail at the end of the season.

INTERIOR OF A PEACH-PACKING SHED AT BULLARD, TEXAS.

A SPLENDIDLY PACKED BASKET OF FANCY ELBERTA PEACHES .. FROM BULLARD, TEXAS.

Besides being early with their Elberta crop, the enterprising Bullard orchardists are able to command a premium price because of the high color of their fruit. It is no more trouble to raise a peach that ripens July 5 than it is to raise one that ripens two weeks later, and it is just as easy to raise the big red and yellow Elbertas as it is to raise the small colorless fruit.

East Texas orchardists claim that there is a good profit in peaches at 50c a bushel. The price at $1.00, with 10c to 15c a bushel added for quality, is something attractive and these prices are sought by the red-land grower.

The peach shipments from Bullard this season aggregated more than 200 cars. From 30 to 40 cars a day were loaded there, farmers' wagons at times crowding the streets, and refrigerator cars took up every available foot of trackage.

It is a high ridge country around Bullard. From a Cotton Belt train one has a view of slopes that stretch both east and west for many miles and every acre of this land is adapted to the growing of peaches and tomatoes.

Only about one-third of the available fruit lands about Bullard are in orchards. The largest farms are still given to the growing of corn and cotton. All of the cleared land and a good deal of the timber land is adapted to peach growing and tomato culture, and the pick of this land can be bought at from $15 to $50 an acre.

Both commercial orchards and farm orchards have proven successful in East Texas, especially in Smith and Cherokee County, and in the country about Bullard. The big orchards under careful management have yielded large profits in years of good crops and good prices. The small orchards, attended closely, well cultivated and sprayed, have paid the largest profits and have proven the most successful. The returns from the small orchards, acre for acre, are as large in the years of big crops as from the big orchards, and in short years the loss does not fall so heavily upon the man with the small acreage, because he has other crops to depend on and other sources of income. He can raise tomatoes and Irish potatoes. He can raise a crop of cabbage, gather them in early May and plant the same land to cotton.

At Mt. Selmon, six miles south of Bullard and also in the early Elberta district, D. C. Vining, who has been in the truck farming businsess for thirteen years, this year made $150 an acre clear from eleven acres of Acme tomatoes. His first car was shipped on June 11 and about half of his crop was sold at $1.45 a crate. After these tomatoes were gathered Mr. Vining planted the land to Spanish peanuts, which crop he will gather in the fall. He raised $125 worth of cabbage on one and three-quarters acres, shipped the cabbage on May 9th and replanted the land to cotton. In thirteen years Mr. Vining has had but one failure in growing these truck crops at Mt. Selman.

Cantaloupes are another profitable crop for the East Texas truck farmer. W. H. McEwen of Mt. Selman, formerly of Sharon, Pa., sold $275 worth of cantaloupes from two acres. He also has one acre of asparagus that is ready for gathering in early March.

R. A. Grimes of Mt. Selman made $325 from one and one-half acres of tomatoes. From half an acre he sold $55 worth of Irish potatoes, and all the land was replanted in cotton. C. P. Linder has raised 400 bushels of tomatoes per acre and he realizes $100 an acre from strawberries.

This mixed farming system, which enables the fruit grower to raise a little truck and the truck grower to raise a little fruit, makes the Bullard-Mt. Selman country an especially attractive place for the small farmer, who is always more successful than the larger grower, because he is able to give personal attention to his crops and help them when they need help.

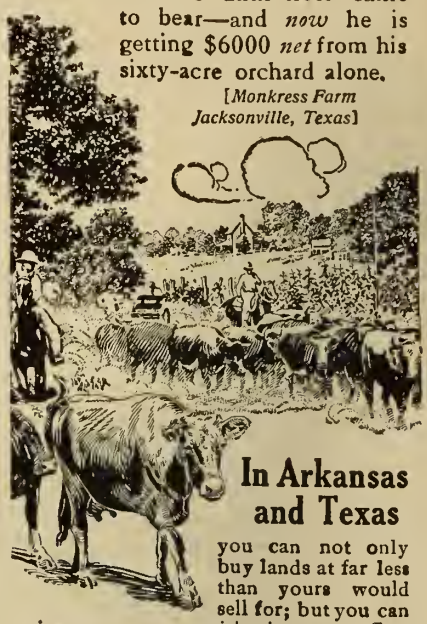
Some one must continue to raise early peaches and early tomatoes, and early garden truck for the hungry cities. Nowhere can these crops more easily or more economically be produced than on the low-priced lands of the East Texas fruit belt. If the farm of twenty, forty or sixty acres is more profitable than the orchard of 500 or 1,000 acres, the responsibility of fruit and truck production will fall upon the small grower and the large interests will give him the field.

There is a tendency in this direction. No effort is being made to replace the mammoth orchards which a few years ago were the vogue, but there are just as many bearing trees and the fruit production is just as large as in previous years. It is plain that the industry is falling into more competent hands. The ten or twenty-acre orchard on a farm that has field and

Land cost him $600 $6000 profit now!

Mr. Hall, a former Michigan man, bought 100 acres of land in East Texas, at $10 per acre, a few years ago; planted 60 acres to peach trees; made a good living from melons and berries until trees came to bear—and *now* he is getting $6000 *net* from his sixty-acre orchard alone.

[Monkress Farm Jacksonville, Texas]



In Arkansas and Texas

you can not only buy lands at far less than yours would sell for; but you can raise more crops with the same effort and at less expense; because the rich fertility of these lands is practically untouched, and the milder climate cuts winter expenses *'way down.*

As Frank Federer says, who came here from Rhineland, Wis.: "I can raise here on $15 land as much as I could in Wisconsin on $200 land." S. N. Jackson of Piggott, Ark., declared that "This is better fruit country than in Tennessee; our orchard crops bring more money here, and there is a better market for what we raise." Jackson only paid $700 for his place. These lands along the

Cotton Belt Route

won't stay cheap very much longer. They have already doubled in value since 1905; but even this year you can buy at $12 to $25 per acre, as good land there as you are farming now. And you'd have *every* advantage of schools, churches, close neighbors, good local markets, phones, rural free delivery, etc. This proposition deserves serious thought

On the 1st and 3rd Tuesdays of each month there are low round trip excursions to Arkansas and Texas via Cotton Belt Route, allowing 25 days' time and free stopovers. Go on the *next* one.

A farmer wrote our free books

He knows farming from A to Z. He traveled over thousands of miles in these sections to learn where the *real* farm opportunities were—the kind he knew *you* would grasp if you saw them. He tells you, in plain words, all about them. 100 pages and farm pictures. Send a postal today for your *free* copies.

E. W. LaBEAUME,
General Passenger Agent
1450 Pierce Bldg., St. Louis

COTTON BELT ROUTE

For Sale Fifty Acres Apples—Sprayed Young Trees. Excellent. A. A. Quinlan, Linwood, Kans.

FRUIT GROWING IN ARID REGIONS. A New Book, by Paddock and Whipple. $1.50. The Fruit-Grower, St. Joseph, Mo.

1c PER FOOT

S-M-A-S-H Go Fence Prices!!

New Barb Wire Less Than 2c Per Rod

Every reader of this paper knows us. Most of you have purchased something or other from us that saved you money, and, whatever it was, it must have proved satisfactory, because we handle only dependable merchandise. Our regular prices are wonderful money-savers, because we buy our goods at Sheriffs' and Receivers' Sales, Factory Overstocks, etc. But once in a while we run across something very unusual even for us, and are able to offer what may be fairly called a

Truly Extraordinary Sale!

This big Wire Purchase of Lot 67 is an instance of this. We were able to pick up this Lot at prices that Cap the Climax of any purchase we have ever made. Now when we say "S-M-A-S-H Go Wire Prices," we mean every word of it! Not just a trifle lower than the lowest figures ever made on wire and fencing, but prices absolutely wrecked—busted—smashed to smithereens! You old-timers who have bought loads of wire will fully realize the wonderful opportunity in this sale when we say to you that we are selling New Wire Fencing at less than 1 cent a foot, and Barb Wire at less than 2 cents per rod.

Only A Fraction of Its Real Worth

We want it distinctly understood that while we paid only a fraction of the real worth of these goods, and are making unheard-of low slaughter prices, yet we guarantee every foot of this material—Wire, Fencing, etc.,—to be exactly as represented and that would cost you a great deal more if bought in the regular way. In this Extraordinary Price-Wrecking Special Sale everything must go—nothing will be held back—you can buy Barb Wire, Smooth Galvanized Wire, Woven Wire Fencing, Nails of every size and description, Wire Gates, Posts,—in fact everything that comes under the classification of Steel and Wire—at prices that will net you a tremendous saving.

CONDITIONS OF SPECIAL SALE

Send us your name and address. State which particular items you are interested in. We will send you catalog and fill your order on demand or we will, on your request lay aside a supply as ordered for your future delivery, without deposit. We will protect your purchase in this manner. Remember that all goods are either subject to private sale or reservation. Quick action is necessary if you wish to participate in this unequalled slaughter sale of staple necessities. You may either send us your name and address in a letter or by postal, for full and complete information, carefully describing in detail this material, or you may use the coupon for the purpose. Address all inquiries to

CHICAGO HOUSE WRECKING CO.,
35TH AND IRON STREETS, Dept. H 22 CHICAGO, ILL.

ODDS AND ENDS Included in this Lot 67 is a collection of odds and ends such as bolts, screws, nuts, nails, etc., all brand new goods, of all sizes and kinds. Any one who has use for them will find them tremendous bargains as long as they last. Do not overlook this lucky chance, even though you may not just now be in need of wire and fencing supplies. You surely can use them later, and by reserving your needs now, you will get the advantage of these extraordinary low sale prices that may never occur again.

Never Buy A Thing Until You Get Our Prices.

SPECIAL WIRE SALE COUPON

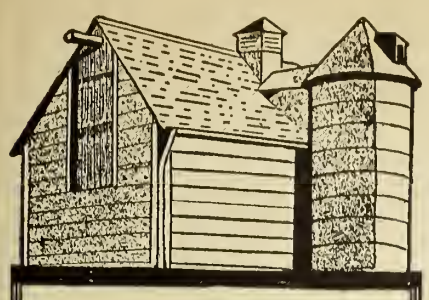
Chicago House Wrecking Co.,
35th and Iron Sts., Dept. H 22 Chicago.

Gentlemen;
Without any promise to purchase, please send me prices, catalog and full particulars of your Special Sale Lot No. 67, Wire, Wire Fencing, Barb Wire, etc.

Name.....

Address.....R. F. D.....

County.....State.....



Protect Your Barn and Silo

This is the time of year when you should paint your barn and silo. It means protection to your buildings and everything in them.

Lowe Brothers Standard Barn Paint

is the highest quality—made expressly to protect your barn. The colors and the quality are vastly superior to those generally used for barn paint. It withstands the wear and tear of the severest weather and keeps your barn weather-proof, always looking new. It's fine, too, for shingles, fences, sheds, etc.

For Your Concrete Silo use

Lowe Brothers Concrete and Cement Coating

It comes ready to use. It fills and seals the pores, dries smooth and hard, and makes your silo water- and weather-proof, prevents alkali action and discoloration. Keeps the surface from wearing under worst of weather conditions. Made in 14 colors.

If you have a concrete floor in your barn use

Elastic Cement Floor Finish

It makes a smooth, hard floor, and prevents wearing and dust.

Get Our Free Farm Packet

It contains several booklets of color cards and gives full information on all kinds of painting and decorating. It tells you when, how and what to use in painting—your house, inside and outside, your furniture, walls, floors, stairs, fences, sheds—everything.

You need it. It's full of valuable information and will save you time and trouble. It's free—a postal will bring it. *Write today.*

The Lowe Brothers Company
496 E. Third St., Dayton, Ohio
Boston New York Chicago Kansas City
LOWE BROTHERS, Limited, Toronto

In writing advertisers please mention The Fruit-Grower.

PAINT AT FACTORY PRICES

SAVE DEALER'S PROFIT
FREIGHT PAID

Guaranteed For 5 and 7 Years

Made fresh to order. Free trial offer. All your money back if not satisfactory. Free paint book and color cards, tells all about paint and how to use it. WRITE TODAY.

O. L. Chase, The Paint Man, Inc.
1220-24 Liggett Building
Department 39 St. Louis, Mo.

A Good Word for us when you write an advertiser shows him where his advertisement pays and so helps us. Please say it for **The Fruit-Grower**

garden crops, live stock and poultry, pays a better profit on the investment than the large acreage, devoted entirely to fruits.

Where lands are cheap, where health is good, water is pure and the markets are convenient, there are few places more attractive to the small farmer than the Bullard country, where the earliest Elbertas come from, or Mt. Selman, a neighboring community that leads in the production of a long list of truck crops. JOHN C. SMALL.

Texas.

Small Fruit Notes for September.

The 1912 grape crop in southeastern Missouri is good, though not quite up to the excessive yield of 1911. Last year the crop was two weeks earlier than usual. This year it went back to its regular date of August 1. That is when the first cutting of Campbell's and Moore's is made. Campbells seems a little earlier but is not so uniform in ripening. Moore's is remarkable in this: that there is little variation in the time of its ripening all its bunches as well as in their size. Like all grapes, Campbell's will not ripen so early if permitted to set as heavily as it is inclined to do. It is not so regular in the bunch as Moore's, but often far exceeds it in size and beauty. There are many magnificent bunches that makes a picker pause to admire.

Campbell's is a much better keeper than Moore's and of a higher quality, but succeeds only in favored places and under special treatment. I would not ascribe all the difference to the variations in soil, but it seems a fact that it requires a richer soil and shorter pruning than other kinds. With me Campbell's is a great success and surpasses any other grape I have ever seen that flourishes in the Mississippi valley. Not one of the many other kinds I grow can compete with it.

We started sales at 4c per pound and after the first eight days, dropping to 3c, and making special prices on large lots. We averaged about 200 pounds a day, selling altogether to the grocers and Italian fruit venders. To some grocers, the quickest sales are made by putting up the grapes in the small tomato baskets, holding three pounds. This is a convenient form for customers who wish to take them home for the table. They retail at 15c and net us not quite 4c a pound. Other grocers seem to prefer to buy them in bulk in the common market basket which holds from 15 to 20 pounds, according to how it is heaped. The fruit venders always buy in bulk but I have not tried to find out how they sell and what profit they make.

No one has had anything but words of admiration for the quality of the fruit, which is mostly Campbell's. Green Mountain is fine as usual, disposed to overbear if not closely pruned, and ripening a little later this year than the blacks. Its sweetness commends it to many but its size and color prevent it competing with the showy black or purple sorts except with those who have tested its flavor and prefer a sweet grape rather than a vinous one. It is one of the earliest, one of the sweetest, one of the hardiest, and one of the most productive. No doubt it would be seen much oftener if nurserymen would generally list it.

Last year I pruned some varieties, among them Moore's Early, as late as in May, when they were in bloom. I was curious to see what effect on the vine and on the fruit such late pruning would have. I discovered, for one thing, that pruning at such a time is slower and more difficult work because of the nature of the grape to throw the most vigorous growth into the buds near the extremities of the canes. In pruning at this time I found many of the lower buds undeveloped or putting forth only a weak growth, while the best formed bunches were often five or six feet away from the main cane. In order to save these distant shoots it was necessary to leave much longer canes as well as canes whose position would often have insured their rejection in the dormant season. In short, one had to follow an entirely original system and leave the canes in a shape that would make more work the next year. As a general conclusion I should say that late pruning is not injurious to the health of the vines and has little appreciable influence on the quantity and quality of the fruit, but it makes it impossible to prune in any systematic way and greatly increases the cost of the work. In my vineyard the soil between the rows is filled with the seed of crab-grass, fox-tail and crows-foot. These grasses we have so far kept down by cultivation, but now that the crop is mature, we shall allow them to come in to occupy all the space. I cannot imagine a better cover crop than is furnished by these grasses, unless they could be gifted with the power of legumes to store up nitrogen. They make a dense growth two and even three feet high that dies in late fall and forms a thick carpet that protects the roots of the vines against frost and sudden changes of temperature.

In the other vineyards where these grasses are not thickly seeded I have been trying cowpeas and rye. The objection to the cowpeas is that the grape ripens too late to permit the cowpeas to make its growth. If they are sown before the grapes are ripe, the tramping of the pickers breaks them down and damages them. There is also an objection to rye and that is that if the spring is wet and it is impossible to plow early, the rye will get too high for a one-horse plow and such a late growth is detrimental to the vines as it robs them of needed moisture. Vetch and rye might do better than rye alone.

I find it hard to get rid of the morning glory and no worse pest of its kind can afflict the grape. Other large growing weeds are cut out and prevented from going to seed so that only the grasses shall have possession of the soil.

Missouri. L. R. JOHNSON.

Take Your Own Time to Pay

ADLER The Piano Maker Says:

and I will

SAVE You HALF on a Celebrated Adler Piano

My Free 30 Day Trial, No Money Down Offer—Breaking All Records—Most Successful Nation-Wide Sale of High Grade Pianos Ever Known—All Competition Banished.

I have now made it possible for every home to enjoy the delight of a pure toned *Celebrated Adler Piano* of exquisitely handsome design, and construction so durable that it is *guaranteed for 25 years.*

Every *Adler Piano* is shipped direct from the great $500,000 Adler Factory to the home at lowest wholesale factory prices. I save you *half*—because the *Adler Plan* absolutely *wipes out all middlemen* and gives *you* their profits. *No Salesmen! No Collectors!*

FREE 30 Day Trial

If the *Adler* fails to make good my claims—return it—I pay freight both ways—trial costs you nothing.

2 to 3 Years Time to Pay

If perfectly satisfied, keep it and start small payments once a month or every 3 or 6 months. Ask about our Autumn Payment Plan. At the end of a year, if the *"Adler"* fails to make good on every point I claim for it, I will refund every dollar you have paid. You cannot afford to buy any piano until you have seen my plan to save you *half. Write today for catalog.*

C. L. ADLER, Pres., Adler Manufacturing Co., 4021 W. Chestnut Street, Louisville, Ky.

In writing advertisers please mention The Fruit-Grower.

HOUSTON

Where the railroads meet the sea, is building a great city whose destiny is linked with the Panama canal. She holds the key to the Gulf that unlocks the gateway, letting in and out the foreign commerce of the world to the greater part of the United States. Fortunes are made here in short time on real estate investments. ALDINE is only ten miles from Houston and is one of the most desirable suburban communities for investment or residence, being admirably located as regards soil, water, dralnage, schools, markets, transportation. The best fig orchards and largest fig preserving plant in Texas are found here. Orange groves and other fruits and vegetables grow nicely. Poultry and dairy farming, as well as general farming, is successfully conducted here. Lands are now cheap and may be bought on reasonable terms. Small tracts of 5 and 10 acres may be had for small cash payment and balance monthly. Large tracts may be had on usual terms. Titles perfect. Write today for full particulars free.

E. C. ROBERTSON, General Sales Agent,
501 and 510 Kiam Building, HOUSTON, TEXAS

Build with CONCRETE BLOCKS

Make your own blocks and build fireproof, permanent buildings with your own hands, by using the **HERCULES JR. CONCRETE BLOCK MACHINE**, designed especially for farm use. Requires no experience to operate, saves you money on whatever you build or repair. Write for full information and free booklet. **Century Cement Machine Co., 210 Mill St., Rochester, New York.**

WAITING TO LOAD ELBERTA PEACHES AT BULLARD, TEXAS,

APPLES IN S. W. VIRGINIA

Patrick County One of the Newest as Well as One of the Oldest Apple Growing Sections

One of the newest apple sections of Virginia is also one of the very oldest apple-growing sections of the United States, paradoxical as this may appear. Away down in Patrick County, far from the beaten path, great commercial orchards are just coming into bearing, and other tracts of land are now being made ready for planting, and in this same county is what is claimed to be the oldest apple tree in America. Thus the old and the new are found almost alongside each other.

About the middle of June a representative of The Fruit-Grower made a visit to Patrick County, not so much to see the old Handy apple tree, with

SLOPES OF MOUNTAIN, WHICH ARE FAVORITE ORCHARD SITES IN PATRICK COUNTY, VA.

114 years to its credit, as to see the new orchards which are being planted. For here are being developed great orchards of Winesap, York Imperial, Stayman Winesap, etc.

Patrick County is down in southwestern Virginia, on the eastern slope of the Blue Ridge mountains, and the best orchard land lies in the slopes leading up the mountain side. Some of the slopes are very abrupt; so steep, in fact, that a Western man can hardly believe the soil can be cultivated. But this soil is proving to be the best apple land. Much of the land now being planted to apples has just been cleared

VIEW OF PART OF STUART ORCHARD, PATRICK COUNTY, VIRGINIA.

of virgin forest, or rather the second growth, for much of the heavy timber was removed years ago. The soil is a rich red clay loam, some of it containing much surface stone, and such land as this has proved to be ideal for orcharding.

For many years apples have been grown in Patrick County, for this county has been settled more than a hundred years, and early it was found that on the slopes of the mountains, apples of high quality are grown. There are many old orchards in the county, and, as already stated, Patrick County claims that the old Handy apple tree is the oldest apple tree in the United States. It is said to be 114 years old, and it is still bearing fruit. It is also said that one year this old tree produced 132 bushels of apples, which were used in making brandy, and that this quantity of apples produced forty gallons of the fiery liquid. This old tree is supposed to have come up from seeds dropped by hunters who maintained a hunting camp near where the tree stands, more than a hundred years ago. It is undoubtedly a seedling tree, the fruit being of indifferent quality, but claimed to be especially fine for making brandy. This old tree is sixty feet high, with a spread of seventy feet. The circumference of the tree is more than twelve feet, and its sturdiness and age is evidence that the conditions in Patrick County favor apple culture.

For many years it has been noticed that apples of very fine quality are shipped out of Patrick County, and at various fruit exhibitions these apples have won many premiums. Accordingly, a number of years ago Messrs. H. C. Wysor of Pulaski County and M. V. Stedman of Patrick, induced H. E. Van Deman, the well-known horticultural authority, to make an inspection of the soils and other advantages of Patrick County as a location for large orchards

Mr. Van Deman's report was most favorable, and these gentlemen have associated with them others of means, and as a result several hundred acres of land have been planted to apples, the first orchard planted now being in bearing. The oldest of these orchards is known as the Stuart orchard, and one of our illustrations shows

A Kansas Planter Wants More ORENCO TREES

Just last week a party in Kansas wrote us that our trees had done so well for him that he wanted more. The Big Oregon Nursery Company of Orenco, Ore., can furnish you either ONE- or TWO-year-old trees for next Spring's delivery.

ONE-year-trees are 4 to 6 feet high with heavy caliper on **"Three-year-old roots."**

TWO-year-old trees are 5 to 7 feet high with extra heavy caliper on **"Four-year-old roots."**

ORENCO trees are grown by CULTIVATION not IRRIGATION. The largest nursery in the west growing their trees without irrigation.

You cannot compare ORENCO yearling trees with Eastern yearlings or our "2-year-old" either. Orenco's yearlings are as large as many TWO-YEAR-OLDS grown under Eastern conditions and methods.

Why not plant the same trees as do successful western planters?

Just drop us a line stating your needs.

We want a few progressive, reliable representatives in Wyoming, Montana, Colorado and New Mexico. Write us for particulars; it's worth your while.

OREGON NURSERY CO.

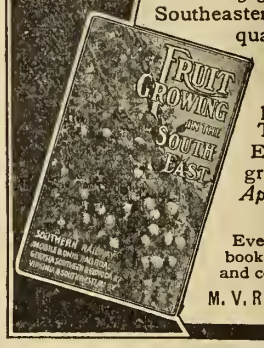
The 1200 Acre Nursery ORENCO, OREGON

Please make it a point to always mention The Fruit-Grower when you write in response to an advertisement.

The Favored Fruit Region of the World

Send for this Free Booklet

The Appalachian Mountain section in the states of Virginia, Tennessee, Western North Carolina, Northern Georgia, and Alabama possess advantages unequaled anywhere in the world for the growing of fruit, and especially for apples. The *long growing season, gentle, abundant rains,* and *sunny days* give Southeastern fruit a distinctive *color* and *flavor* making it the highest quality in both European and American markets.



Apple Lands at $15 to $50 per acre

Mountain cove land (the very best for apples) in many places can be purchased from $15 to $50 an acre.

The short haul (12 to 24 hours) to the great Central and Eastern markets and Atlantic ports gives the Southern fruit grower a great advantage over those in distant sections.

Apple Orchards pay from $100 to $500 an acre up.

Send Now for the Fruit Booklet.

Everyone interested in fruit growing locations should have a copy of the booklet here illustrated. Other literature about the Southeastern States and copies of the Southern Field, a bi-monthly magazine, sent free.

M. V. RICHARDS, Land & Industrial Agt., Southern Ry., Room33 Washington, D. C.

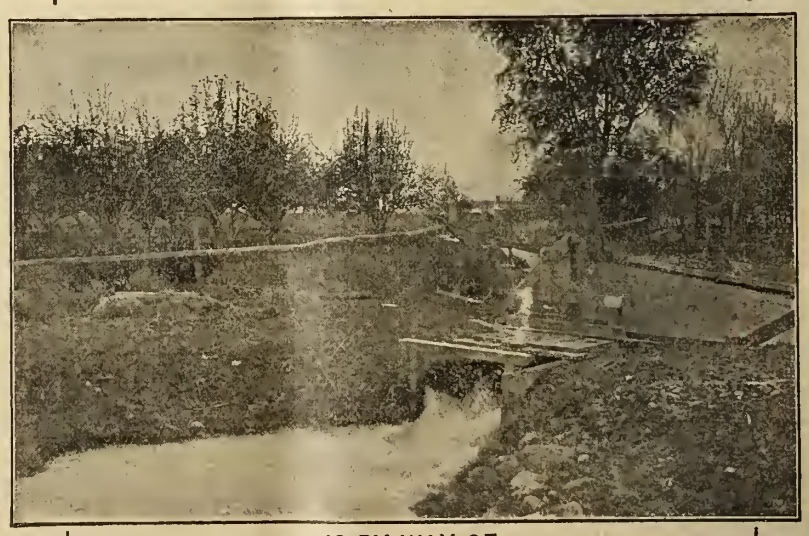
You will confer a great favor upon us as well as the advertiser if you mention The Fruit-Grower when writing.

UTAH

THE WAY TO REACH the Fertile Irrigated Valleys of

Colorado, Utah *and* New Mexico

The Cream of the United States



IS BY WAY OF

The Denver & Rio Grande Railroad

"The Scenic Line of the World"

COLORADO

Valleys in COLORADO	Gunnison	Valleys in UTAH	Gunnison
Arkansas	Uncompahgre	Green River	Uintah Basin
Animas	North Fork	Price River	Valleys in NEW MEXICO
Eagle River	Shenandoah	Strawberry	San Juan
Roaring Fork	Paradox	Utah	Chama
Grand River	Montezuma	San Pete	Espanola
	San Luis		

NEW MEXICO

CHOICE OF TWO SEPARATE AND DISTINCT ROUTES TO THE WESTERN SLOPE

Special Rates for the Homeseeker and Settler via RIO GRANDE to All Points in the above mentioned sections. For free descriptive booklets, folders, etc., apply to Frank A. Wadleigh, General Passenger Agent, Denver, Colorado.

IRRIGATED LANDS

a section of this orchard. Another orchard is called "The Patrick," and it, too, is planted on the same hilly ground; still a third orchard called "The Shelton," has been planted, and ground is now being cleared for a fourth.

It is the intention of the men back of this enterprise to make Patrick County famous for its apples, and especially for its Winesaps and York Imperials. Both varieties grow to perfection here and attain a very high color.

The Stuart orchard contains about 30,000 trees, some of which are coming into bearing, and the crop this year will amount to perhaps 15,000 boxes—for some of the fancy apples which are producing splendid returns. The Rangley orchard is now bearing and is expected to produce 20,000 to 30,000 bushels of fruit this year.

Judge J. R. Moore has an orchard of about thirty acres which is a model. Trees are healthy, of great size, and they produce wonderful crops of fruit. At the time of our visit this orchard was being sprayed with Bordeaux mixture and arsenate of lead. Earlier applications used lime-sulphur as a fungicide, but for late applications Bordeaux mixture is used, for it will control bitter rot more effectively than lime-sulphur.

Judge Moore is a great believer in the use of cowpeas, and at his place we found several fields of this crop,

CLEARING LAND TO BE PLANTED TO APPLE TREES.

will be packed in boxes. It looks like a great task to spray an orchard of this size, planted on hilly land, but the company is preparing to do the work right. The mountains nearby are full of springs, and water from these springs is piped all over this great orchard. About every two hundred yards apart parallel lines of pipe are laid underground, and these lines are tapped at intervals by hydrants, so that at no time is a spraying machine very far from a water supply.

There seems to be an abundance of good labor, white men being used altogether in the work. Most of these men are married, so that the company does not have to board them. The Southern and the Norfolk & Western railways give good connection with various cities, and freight rates are low.

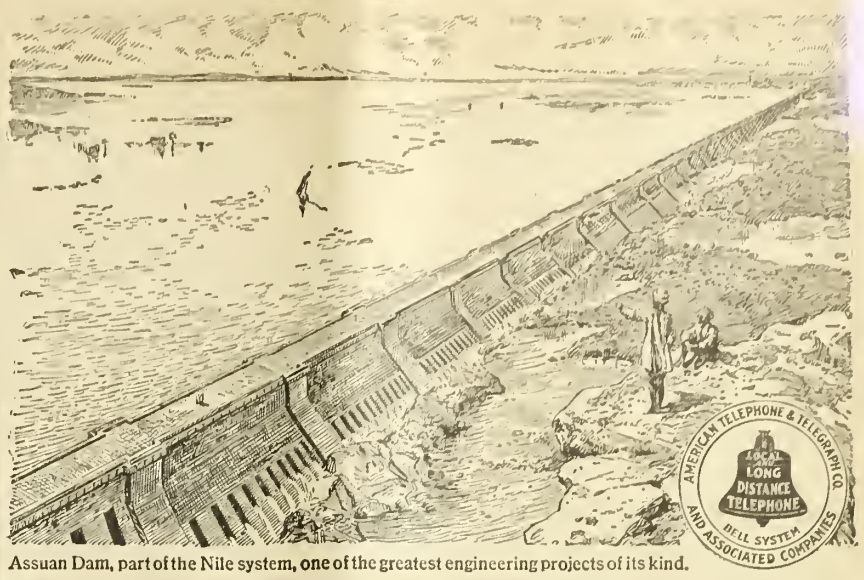
RESIDENCE OF JUDGE J. R. MOORE, AN ORCHARDIST OF PATRICK COUNTY, VA.

Few varieties of apples are planted. Winesap and York Imperial are standard, and in some orchards Ben Davis and Gano are used. A few trees of Delicious have been set, and it is believed this variety will grow well here. Then there are some trees of Virginia Beauty, a limited quantity of Bonum, the great apple from North Carolina, and a few local varieties, such as Cannon Pearmain

Besides these great orchards, covering hundreds of acres of land, there are others more modest in size, but which will make fine hay, besides enriching the soil. Judge Moore is in doubt as to the proper method to handle the soil of his orchard. He has practiced clean cultivation, but finds that sometimes soil is inclined to wash.

In talking with Mr. W. D. Rickman, in charge of the Patrick orchard, we found that he has had some trouble from washing, too, although this steep land washes much less than would be supposed. Mr. Rickman says he has found that washing is worse where cowpeas have been turned under late in the fall; that hard rains in winter will cause more or less damage. He believes that where cowpeas are used on steep hillsides the crop should be turned under early enough in fall to permit the planting of rye, to act as a covering for the soil during the winter, to be turned under the following spring.

A visit to Patrick County is a great treat to one who loves Nature. Along the roadsides great masses of rhododendrons were in bloom at the time of our visit, and one could look upon acres of this beautiful shrub, as compared with the clumps to be seen in the parks of the cities. All vegetation is very rank, showing the fertility of the soil, and after the recent rains, Nature seemed at her best. Patrick County can boast of some very fine people, in addition to her old and her young apple trees, and one who goes down there, either as an investor or as a sightseer, will find a warm welcome



Assuan Dam, part of the Nile system, one of the greatest engineering projects of its kind.

The Nile System—The Bell System

For thousands of years Egypt wrestled with the problem of making the Nile a dependable source of material prosperity.

But only in the last decade was the Nile's flood stored up and a reservoir established from which all the people of the Nile region may draw the life-giving water all the time.

Primitive makeshifts have been superseded by intelligent engineering methods. Success has been the result of a comprehensive plan and a definite policy, dealing with the problem as a whole and adapting the Nile to the needs of all the people.

To provide efficient telephone service in this country, the same fundamental principle has to be recognized. The entire country must be considered within the scope of one system, intelligently guided by one policy.

It is the aim of the Bell System to afford universal service in the interest of all the people and amply sufficient for their business and social needs.

Because they are connected and working together, each of the 7,000,000 telephones in the Bell System is an integral part of the service which provides the most efficient means of instantaneous communication.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

One of the most important of the national conventions, and one in which the people of the West are particularly interested in, is the National Irrigation Congress, which will meet this year in Salt Lake City from September 30th to October 4th.

In the interest of the Congress the Denver & Rio Grande Railroad has prepared a handsomely illustrated folder giving a history of irrigation and a description of many of the irrigated sections in the Rocky Mountain Region, which it is distributing to delegates to the Congress and others interested in the general subject of irrigation.

Illinois Meeting.

The Horticultural Society of Southern Illinois will hold its annual meeting and fruit exhibit at Kinmundy on November 26th and 27th. Any of our readers interested should write E. G. Mendenhall at Kinmundy, Ill., for program, premium list, etc.

The Lever Agricultural extension bill providing for Federal and state support of a plan to maintain a skilled farm demonstrator in every agricultural county of the Nation, passed the House August 23. It will be brought before the Senate when Congress reconvenes in December. This is an all important piece of legislation and every effort should be brought to bear to secure its passage by the Senate.

Apple Trees

A splendid lot of thrifty trees, either budded or grafted. These are grown on my own land, under my own supervision, and are the best trees you can procure. These trees are clean, straight, and have magnificent root systems.

Buy Direct From Me

You get your trees at a lower cost than when dealing through agents. There will be a heavier demand for trees this season than ever before. Write to me today, and tell mo how many trees you will want. Don't delay until late in the season, when prices go up and quality goes down. Send me your order now.

ALBERT MATHIS
Payette Idaho

FARM FENCE
11½ cts. a rod for a 26 in. high hog fence; 16 1-2c. a rod for 37 inch high stock fence; 28c a rod for a 50-inch heavy poultry fence. Sold direct to the farmer on 30 Days Free Trial. Special barb wire, 80 rod spool, $1.40. Catalog free.
INTERLOCKING FENCE CO.
BOX 50 MORTON, ILLINOIS.

Investigate the Possibilities
of six richest Southern states traversed by the Seaboard Air Line Railway. Rich fruit, truck and farming lands can be secured at low prices. Crop-growing season 250 to 346 days. Two to three crops per year easily grown. Excellent climate. Write today for advice and descriptive literature to
J. A. PRIDE, Gen. Ind. Agt., Seaboard Air Line Ry., Suite 367, Norfolk, Va.

SHENANDOAH VALLEY ORCHARD AND FARMS FOR SALE

by E. W. Barger & Company, Waynesboro, Virginia. 100 acres of land, having 2,000 Yorks and Stayman Winesaps 8 years old; 700 Yorks and Winesaps 1 year old; 650 Peach Trees, bearing; $800 crop this season; fertile soil, gently rolling, easy to spray. One mile from station, good community, not far from county seat. Price $11,000. Terms to suit.

ARKANSAS PEACH CROP

A Fruit-Grower Representative Visits the Peach District—A Report of What He Saw

Five hundred cars of peaches were shipped this year from the 2,250-acre orchard of the Southern Orchard Planting Company, near Horatio, Ark. Most of these peaches were sold for about $300 a car, on board the cars at Horatio. The crop was the largest ever raised in that section, and it has been very profitable to the owners.

More than 2,500 persons were required to harvest this crop. The employing of this great amount of help for just a short time required some very careful organization, and methods that have been worked out to solve this problem are very interesting. C. V. Norfleet, the general-manager of the company, said, in speaking of the help question: "We make every effort to get country people to work for us. We have found they can do more and better work than the persons we get from the city. Many of the city hands are inclined to grumble at the work and the heat, and they are hard to manage.

A TYPICAL PEACH-PICKING "GANG" AT HORATIO.

"So we try to get country people, and this is the way we do it:—We send out agents in the spring, just like any other commercial house, to the communities around here, who explain to the people the price we will pay for hands in the harvest, the number of men and women we will need, and just what the work will be. Of course, we keep many of the hands from one year to another. About 1,000 people and 175 of the teams that helped us this year have been with us every season since the harvests began, in 1908. This large number of old, experienced hands helps us very materially in getting the new force organized every year."

The pickers are paid seventeen and one-half cents an hour, not including board. They work for 10 hours a day for most of the season, which usually lasts about three weeks. These pickers are divided into gangs, with an experienced foreman in charge of each. Every gang, when it has the full number of hands, contains fourteen pickers, a man to load the peach baskets into the wagons, a water boy, and the foreman. A very careful system for keeping track of the time of the men has been arranged by Mr. Norfleet. When the men come in for work in the morning, and they are identified by numbers on their hats or shirts, they are checked in by the foreman on a special payroll slip, and a duplicate copy of the slip is carboned off at the same time. The foreman checks the men out and in for the noon hour, and then records the time they quit work at night. He then takes the carbon copy of each slip, and gives it to the man who has his time recorded there. If there is any complaint about the time every man has worked, the "kick" must be made there and then. The original copy of the slip is turned into the office at night. Thus the record for every man is in the office of the company every night, and on the following day, if the foreman finds it necessary to discharge any man, a special discharge slip is given him, so he can go to the office and get his money, for the discharge slip contains a record of the number of hours he has worked that day.

Mr. Norfleet believes in organization and specialization in all departments, and it is well shown in the time slips. The foremen are not so accurate in figuring as the office men, for they do not have the experience. There was considerable trouble caused when the system was put in because the foremen did not make the correct addition of the hours on the time slips. Now, none of the foremen are allowed to do this, and it is all done in the office where the work will contain fewer mistakes. All that the foremen do is to record the time on the slips.

ONE OF THE PICKERS' CAMPS IN AN OAK GROVE BY THE ORCHARD.

Every foreman keeps a record of the day's work, that gives the number of pickers, and the number of baskets that were picked by the gang in the forenoon and afternoon. The record also shows the number of baskets that were hauled by every teamster, the "block" in the orchard from which they were hauled, and the packing shed to which the baskets were taken. This record is turned into the office every night, so a careful record may be kept of the work done by every gang, and the number of baskets hauled by every team. There is no chance to "put over" anything on the manager, for he has a record of what everyone is doing.

These results are posted at the office every night, and all of the men of the camp can see what every gang has done, and which gang is the most efficient. This has increased the competition between the gangs—it has awakened the team spirit—and the company gets results. Mr. Norfleet says: "We get at least a third more work out of the men than we did before this system was put in. It is a fine thing to encourage the men to work."

The hands come from every part of the country. One year, they had at least one man registered from every state in the country except Rhode Island. When the hands are hired, their name and address are recorded, they are given a number, and are known by that number the rest of the time. Even the manager wears a number. There are special numbers for every kind of work, so a man's work is shown by his number.

The problem of feeding all of the help is a big one. Some of the families camp during the harvest, and the company rented 175 tents to the help this year, at $5 a tent for the season. Many of the families bring their cows and chickens, and all the members find something to do in the harvest. The father drives the team, if they brought one, the boys work as pickers, while the girls work in the packing sheds. The mother usually stays at the tent to cook for the rest of the family. If there are any small boys, they find employment as water boys. Usually, everyone finds work.

For feeding all of the unmarried men, a force of kitchen help of 25 hands was organized. Most of these hands, especially the cooks, were experienced, and were paid good wages. Twenty cents a meal is charged for the meals served to the men. The cooking for the help is complicated by the fact the cooks never know how many of the hands will come to their meals. As the hands pay only for the meals they eat, many of them economize at times and do not come in for the meals, eating peaches instead. Usually, the cooks plan some of the food so it may be kept for the next meal, if enough persons do not come in to eat all of it.

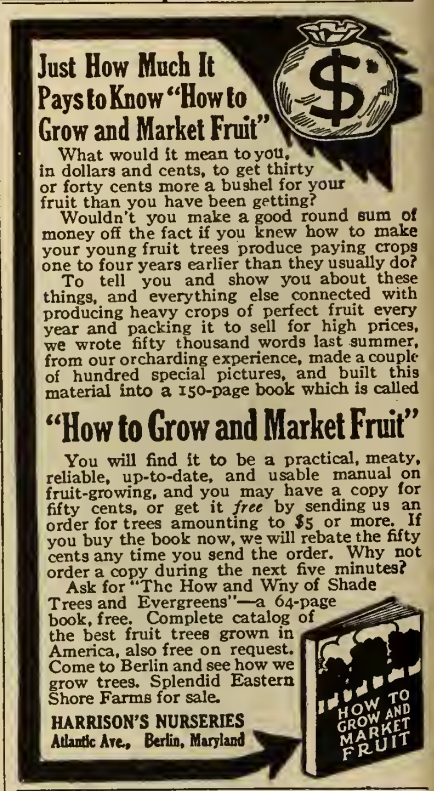
In addition to the problem of feeding the help, the company has arranged to care for the buyers and special visitors who come to the camp in the harvest season. A special hotel has been built for the buyers, and more expensive meals are served to them in a special restaurant that has been built on the grounds.

All of the help is classified into one of these divisions: packers, pickers, teamsters, car-loaders, crate-makers, office help, inspectors, graders, gate-tenders, water-boys, general workmen, cooks, waiters, foremen,

PICKING FOREMAN'S RECORD

Date.....191.... No. Pickers forenoon....., afternoon.....
No. Baskets forenoon....., afternoon.....
Orchard covered.....acres on contract. Cultivated by.....
Hauled by Teamster No.....to Shed No.....Baskets.....
Hauled by Teamster No.....to Shed No.....Baskets.....
Hauled by Teamster No.....to Shed No.....Baskets.....
Hauled by Teamster No.....to Shed No.....Baskets.....
Picking Foreman Must Keep Above Record .....
And Turn in Same to Office Each Day Foreman

FORM OF BLANK USED TO KEEP RECORDS OF EACH PICKING CREW.



$600 AN ACRE IN Strawberries

Apples Also a Profitable Crop
Big Profits in the Ozark Regions

Net profits from strawberries sometimes yield as high as $600 an acre in the Ozark region. Apples are a very sure crop and net $250 or more per acre.

The Ozark Mountain region of Western Missouri and Arkansas offers remarkable agricultural opportunities for fruit growing and general farming. An independent income can be had with from 20 to 40 acres.

The climate is ideal, always dry and healthful, the altitude being 1,000 to 1,200 feet above the sea level.

Summers are long and temperate, winters short and mild, a long growing period being the result. Thus you can work your land almost the entire year.

Wheat sometimes runs to 60 bushels the acre; corn to 60; oats to 40; big crops in alfalfa, flax, buckwheat, hay, clover and timothy.

Big money in stock and poultry raising. Long seasons and mild winters enabling the cattle to range most of the year. Large profits in horses, mules and pigs. Hens lay the year round. Fine chicken article in January Current Events Magazine. Ask for it.

Land is now selling at a remarkably low figure and if you wish to locate in a country where unlimited agricultural opportunities await you, come to the Ozark regions.

Complete information about fares, homeseekers' excursions, literature, etc., will be sent you if you will write to

WILLIAM NICHOLSON
IMMIGRATION AGENT
Kansas City Southern Railway
35 Thayer Building, Kansas City, Mo.

52-Acres Horatio Fruit Land $1,200

All fenced, 40 acres cultivated; on good public road, rural route and telephone line, one-half mile school, small buildings, fine well and living springs 3 miles out, near the big orchard; also 92 acres 2 miles out, 10-acre orchard, $3,000. Porter Land Co., Horatio, Ark.

Spray with SAN-U-ZAY Scale OIL

And actually free your orchard from the Scale. We guarantee it can be done with only one thorough application, and at much less cost in time, labor and money. SAN-U-ZAY has been in extended use for years, is endorsed by Experiment Stations, and is sold to the fruit grower direct at low

ONE PROFIT PRICE

We can prove to you that SAN-U-ZAY spreads penetrates and kills in a way impossible with Lime-Sulphur or any other coarse spray. A postal to Dept. A will bring you, by return mail, full particulars including reports from leading growers and experts in all sections of the country. Also booklet covering our new line of "Misty-Make" Sprayers. Send at once.

The Gardiner-Johns Company
210 Livingston Bldg., Rochester, N. Y.

BETTER FRUIT TREES

Direct from the grower, at half what you would pay an agent. 200,000 Apple trees, 175,000 Peach trees, and Pear, Cherry, Plum, Quince, shade and ornamental trees—all large, thrifty, and with fine roots. All Dansville grown, where San Jose scale has never been found. We Pay the Freight.

Free, illustrated Catalogue gives special introductory bargains, for Fall planting. Write today for Catalogue D

DENTON, WILLIAMS & DENTON, Dansville, New York

top-nailers and truckers. This year, 89 experienced packers were hired from Florida to help with the packing, and while it costs more to get them than the usual run of packing help, they have proved to be a profitable investment. Then there is another advantage in the employment of the regular packers, and that is that they will work Sunday. Many of the hands will not work Sunday, and, until this year, the management had considerable trouble in getting men to keep the packing sheds running that day. This year, there has been no trouble. About 60 per cent of the hands work Sunday, but if they do not desire to work that day, the company does not force them to do so.

The peaches are picked and placed in one-half bushel baskets carried by the pickers. Most of the trees are headed very low, so the picking can be done from the ground. The baskets are placed in a wagon as rapidly as filled, and are hauled to the packing sheds. There are four of these, one being on the main line of the Kansas City Southern Railroad, and the others connected by a switch that runs into the orchard.

A WELL LADEN PEACH TREE NEAR HORATIO.
Note that the limbs bend to the ground without breaking. All of the trees in the orchard have been pruned properly, and there is but little broken wood.

When the wagons arrive at the sheds, the peaches are graded, and sent to the packers. All of the standard kinds of packing boxes are used by the company. Mr. Norfleet says: "We have found that we can get about 15 per cent more for our crop, on an average, if we have different

C. V. NORFLEET, GENERAL MANAGER, SOUTHERN ORCHARD PLANTING COMPANY.

kinds of crates so we can supply any market. The company uses the bushel basket, which contains 50 pounds total weight, packed; the six basket crate, which contains 48 pounds total weight; the four basket crate, which contains 24 pounds total weight, and the "California box," which weighs 20 pounds. Every peach in this box is wrapped in paper to protect it. Crate material and crate-makers are expensive; the cost of the crates used for packing the 500 carloads this year was about $35,000. Mr. Norfleet bought most of the crate material in January, at low prices, for the crate material manufacturers did not know there would be a big crop. Some of the material bought later in the season cost him twice as much as the material purchased in January. It pays to buy crate material early.

Two of the hardest things the manager of a large orchard has to do is to estimate the size of the crop and buy the crate material. If he waits until very late in the season to buy his crates, the price will be high, and he runs a chance of not getting the material. If he buys them early, he may find, later in the season, that there is a crop failure, and that he will not use much of his material. It is almost impossible to keep crate stock over to the next season, and have it in as good condition as fresh material. If the manager underestimates his crop, and does not buy enough crates, he has the most serious problem of all. The crate department is hard to handle, in the large orchards.

The number of operations required to harvest a peach crop, or even for one day's work, is very great. Take, for example, July 24, when 60 cars of four-basket crates were shipped. Every crate contained an average of 80 peaches and every car contained 864 crates. There were about 4,147,200 peaches in the 60 carloads. As every peach is handled an average of four times, there were 16,688,000 operations for the day's work.

There is an office of the Western Union Telegraph Company on the grounds during the harvest season, which has direct communication with Kansas City. The office has better telegraph connection with the central markets than any other office in that section. The company keeps informed as to the way the market is going in all of the principal cities, and the manager puts a price for the day on the cars as they are loaded. There is an average of at least a dozen buyers, representing most of the big commission companies of the country, who stay on the ground all of the time. They also keep in touch with the market and if they think the price set by the manager is low enough so they can make a profit, they buy the cars and ship them. Most of the crop is bought by the buyers in that way. If the buyers do not take the crop, the company always will ship its fruit to the central markets. In general, the marketing problem has not been very serious with the company. The amount of fruit is so large that the company can afford to have a good organization for the sales end of the work. There has not been much trouble with the railroads. In general, the transportation has been handled in good shape.

Every efficient modern improvement is used to carry on the work. The office on the grounds is equipped with all of the modern office equipment, and the latest improved machinery is used in all departments. A 40-horse power motor truck was purchased this year for use in hauling peaches, and other heavy loads, and it has been a very successful machine. The company probably will purchase several of these trucks for use in the future crops.

About 20 per cent of the hands are negroes. But as there probably would be trouble if the two races were handled together, the negroes are used only for field work, and they never are allowed to come to the packing sheds. They are hired and paid in the field, and if they want any material from the company's store, it is sent out in the field to them. Most of the negroes make good hands.

About fifteen per cent of the help on the farm is made up of women and girls. Most of the white women are employed in the packing shed, while the negro women and children work in the fields.

Most of the women and girls are members of some of the families camped on the grounds, or they live near the orchard. Almost all of the people who live in Horatio, white and black, male and female, work in the harvest.

The Southern Orchard Planting Company set the trees in the spring of 1905. The first crop was harvested in 1908. The crops were not so very large until the spring of 1910, when 343 cars were shipped. In 1911, only 125 cars were shipped, but as the price was very high, the owners made a good profit on the orchard. A new record of five hundred cars was made this year.

The land on which the orchard is growing is very gravelly, with a clay sub-soil. It is especially adapted to peach growing, and the crop is well flavored and colored. The land that was bought consisted mostly of cut-over timber, and many of the old stumps still are in the orchard. Some of the land contained native timber that had not been cut, and occasionally a few small fields had been cleared. All of the timber was cleared from the land, and the peach trees are set over all the tract. The orchard is very hilly, and the sides of some of the draws are very steep. Some of the sides of the draws are almost pure gravel, yet the

Chalmers

It Moves the Farm to Town

The Chalmers "Thirty-six" gets you into town in about the time it used to take to hitch up the team. Hills make no difference, and heavy roads mean only shifting the gear from high to third speed.

You have thirty-six real horse-power under your hand, with the wheels, axles, and frame to carry it.

The Chalmers never has distemper, pip, or heaves. It is always in condition, and is fresh at the end of the run.

The two great points about the "Thirty-six" are *reliability* and real *economy*. Economy depends on what you get out of a car as much as what you put into it.

When you buy a Chalmers "Thirty-six" *you are through buying cars;* you've got something that will stand up under you for a good many years and will cost you less, per year of service, than any other car.

Think of these splendid features in a medium priced car: Electric lights, self-starter, Turkish cushions, nickel trimmings, speedometer, long stroke motor, demountable rims, 4 forward speed transmission, dual ignition system, carburetor dash adjustment.

Let us send you our book, "Life Story of the Chalmers Car." This will answer all the "Whys" you have in mind, as they cannot be answered in this short advertisement.

"Thirty-six", $1950; "Six", $2400.
Fully Equipped

Chalmers Motor Company.
Detroit, Michigan

This monogram on the radiator stands for all you can ask in a motor car

Please send "Story of the Chalmers Car" and catalogue of 1913 cars

Name.....
Street.....
City..... State..... Fr.-G

20th Century Grader

LET our Free Book tell you all the remarkable money-saving, labor-saving, time-saving advantages of this Famous 20th Century Grader over any other tool intended for the purposes. None compare on any work of grading and leveling roads, building ditches, levees, borders, irrigation laterals, leveling land, cutting sage brush and weeds, scalping alfalfa, cleaning streets and sidewalks and its many other uses.

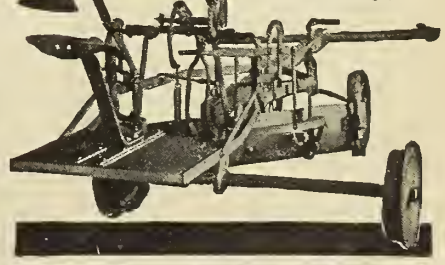
Does 40 Men's Work—
Pays Back Its Cost In 20 Days

It's the original one-man machine. Thousands in use—all giving splendid service and satisfaction.

FREE BOOK
Tells All Facts and Figures

It is built of steel, lasts a lifetime. Send your name on postal for interesting free book of facts and figures—also letters and photo-illustrations from owners. Address

The Baker Mfg. Co.
530 Hunter Bldg., Chicago, Ill.



Some Questions You Should Ask Yourself—NOW

YOU are vitally interested right now in one or more farm machines or implements. You feel the need of a Cream Separator, a Manure Spreader, a Gasoline Engine, a Drill or something else, You are turning over in your mind what *make* of machine to buy—what *price* to pay. So now is the time to ask yourself these questions:

Where can I get the best quality, *at the least price?*

Where can I find *at the lowest cost*, a Cream Separator or a Gasoline Engine or a Manure Spreader, and get one that will stand up, and not cost me a whole lot for repairs?

Why should I spend the money I have earned, to pay a dealer's expenses or a traveling man's expenses, when I can get from Galloway equal quality, full value and pocket these expenses myself?

Why should I buy a separator for example, from a dealer on the dealer's word, when Galloway will give me 90 days' free trial, backed up strongly by a $25,000 legally signed, bank bond guarantee?

Why should I buy from a dealer a Cream Separator or a Gas Engine or a Spreader which has to *be kept in repair by a traveling man*, when Galloway's goods are so well made *they require no expert to keep them right?*

30 to 90 Days' FREE Trial

Longest and Strongest Guarantee and I Save You $21.25 to $45 on the Price. Let Me PROVE IT.

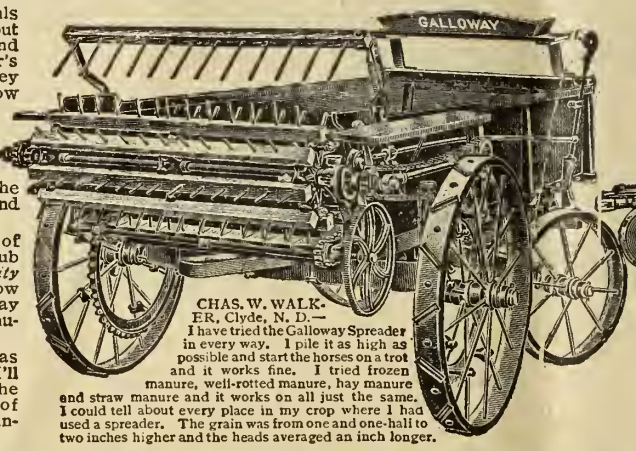
Galloway Answers

With Quality, Service, Price and Satisfaction

and backs his goods with a $25,000 Bank Bond Guarantee. And this guarantee isn't a lot of words thrown together, which sound big, but mean mighty little. Galloway's guarantee actually guarantees, and the $25,000 Bank Bond proves it. I want every farmer, every farmer's entire family to know me for what I am, and my goods for what they are. You know what I look like from my pictures, but you don't know the real Galloway. I can't go to see you, but I'd like you all to visit me at Waterloo, and let us get acquainted. If you were to believe some people, I am a man nearly broke; a man who has fooled the farmer, a man who sells goods with no factory back of him. Why, they'll tell you I sell shoddy, common, poorly made stuff, that isn't worth the freight. If *you* ever hear that, just laugh at the persons telling you, for they are either ignorant or are intentionally and willfully misrepresenting the facts for their own gain.

The very first opportunity you have I want you and any others of your family that can come, to be my guest at our Agricultural Club in Waterloo. I'll show you the *factories*, I'll show you where *Quality* is my main, my biggest idea in making Galloway machines. I'll show you, as I have shown thousands of others of my friends, that Galloway has done more for the American farmer than all other implement manufacturers, in the way of high quality combined with low prices.

In the meantime, I want to send you my separator book, or my gas engine or manure spreader books and with either one or all of them, I'll send you my big general line catalog, printed in five colors. It's the fairest, squarest, cleanest, most truthful, absolutely complete book of its kind today. Just write me now and say whether you are most interested in a Separator, Engine or Spreader. Address

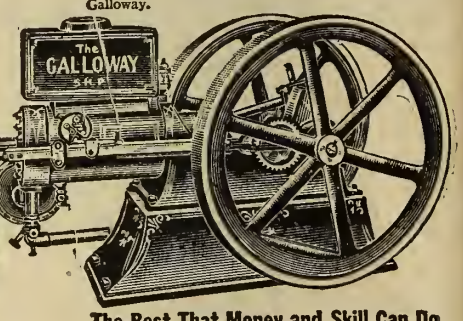


CHAS. W. WALKER, Clyde, N. D.—I have tried the Galloway Spreader in every way. I pile it as high as possible and start the horses on a trot and it works fine. I tried frozen manure, well-rotted manure, hay manure and straw manure and it works on all just the same. I could tell about every place in my crop where I had used a spreader. The grain was from one and one-half to two inches higher and the heads averaged an inch longer.

Wm. Galloway, President, THE WILLIAM GALLOWAY COMPANY, 1038AV Galloway Station, Waterloo, Iowa

G. O. DAY, Muscatine, Iowa.—The Galloway is doing fine work and we would not be without it for twice the price of it. Under our old way of skimming we were making from 25 to 30 pounds of butter a week, but after we purchased your separator we made 40 pounds a week. A gain of 10 to 15 pounds, which, in a few months, will pay for our separator.

VICTOR SITTS, Holt, Mich.—For quality you certainly make a price on your separator that is right and I will say that I saved from $25 to $30 by ordering from you. I will always have words of praise for the Galloway.



The Best That Money and Skill Can Do

LEWIS DAHL, Thompson, Ia.—The 5-H. P. engine that I bought from you in January is all you claimed it to be and it is giving splendid satisfaction. I use it to grind feed, shell corn, run the emery wheel, disc sharpener, grindstone washing machine, etc. The Galloway is the simplest, smoothest running engine I ever saw. It's better than some $250 engines sold by dealers

trees produce good fruit, although they are smaller than those on better ground.

Frost does not do so much damage in the section around Horatio as it does in some of the other fruit growing communities of the South. However, some years there is a crop on the trees on the hills while it is killed in the bottoms. There also are certain lines of air drainage through the orchard where the crop fails oftener than it does in other parts.

The land was carefully prepared and the trees were set 20 feet apart each way. All of the trees are Elbertas, which is about the only variety grown in that section. For the first three years, some crops were raised between the trees, to help pay the expense of the cultivation. Corn, cotton and cow peas were the principal crops grown. Mr. Norfleet considers cow peas an especially valuable crop to grow for this purpose. Since the trees have come into bearing, no effort is made to grow any field crops between the rows.

All the trees are carefully cared for, and the land is broken and cultivated every year. The orchard is divided into tracts that are let, by contract, to men who care for them during the year. In all, there are 75 families who stay on the place all of the year. These men are paid from $5 to $6.50 an acre, depending on the land, for caring for the trees during the year. They are to care for them according to the rules the owners make. Some work is done by hands hired by the day, who are paid $1.50 a day, without board. The total cost of the orchard for a year, including the cost of the office help, but not the expense of harvesting, is about $8.25 an acre.

The men who care for the land begin plowing in December, if the weather conditions are all right, and plow all of the orchard at some time in the winter. Then, in the spring, just before the sap begins to start, they kill the borers in every tree. The men use a special tool that was invented by the owners of the orchard, and with this tool they work away the dirt from around the base of the tree, and kill the borers with a sharp point on the tool. This dirt is left away from the base of the tree for some time. Usually, at least one borer is found in every tree, there may be at least a dozen, and sometimes there are more.

The land is cultivated in April, and about every three or four weeks after that up to the middle of June, when all cultivation is stopped. At that time, the trees are getting heavy with fruit, and the limbs are bending. Most of the cultivation is done with a special orchard cultivator, but an ordinary farm cultivator or a heavy harrow is used where they will do better work. As all of the cultivation is done under contract; all that the company does on this end of the work is to say how the work shall be done, and see that the hands do it properly.

Mr. Norfleet does not believe in any cultivation after harvest. In speaking of this, he said: "There is no more reason for cultivating a peach orchard after harvest than there is to cultivate old cornstalks. The ground should not be disturbed, so the tree can ripen its wood, and get in good condition for the winter. If the ground is cultivated, there is a wood growth made that is not best for the tree. In the winter, all of the trees are carefully pruned, and we make every effort to balance them with the pruning."

When a tree dies, it is replaced by planting a new tree in the same place, to keep the rows straight and make the cultivation as easy as possible. It is planned to keep the land in orchard. Dynamite is exploded where the tree is to be set, and the soil is stirred by other means, if it needs it. It is the belief of Mr. Norfleet that if there were any germs or insects in the soil, the dynamite either will kill them, or else make the conditions for the growth of the tree so favorable that it will have no trouble in making a good start. At least, there never has been any trouble in getting the trees to grow in fine shape, when they were set where the old trees had died.

Some fertilizer is used, where the land requires it. The company uses a special fertilizer called the "Fruit Tree Special," manufactured by the Virginia-Carolina Chemical Company. This fertilizer is especially strong in nitrogen and potash. Mr. Norfleet has found the use of fertilizers to be profitable, where the soil is inclined to be deficient in these elements.

Most of the land in this orchard is owned by persons who hire the Southern Orchard Planting Company to care for the trees. The company planted the trees, and sold them, after they came into bearing, for $100 an acre. Many of the tracts are one acre, few are larger than twenty acres, and the average is about ten acres. The Southern Orchard Planting Company owns in its own name 450 acres and manages all of the orchard. At the end of the year, the net profits that have been made are divided by the number of acres, and the owners are paid in proportion to the amount of land they own. This year the owners of the tracts will net more than 20 per cent on their investment. While all of the owners have deeds to their land, no record is kept of just where the peaches were grown. All share alike. This plan of harvesting the crop will be used, according to agreement, until 1917.

There are other large orchards near Horatio. The Kansas City Orchard Company owns an orchard of 371 acres, one farmer has one hundred acres, and all of the farmers have at least a few trees. There has been a considerable increase in the last few years in the acreage of orchards in that community, for the owners are making money on the trees. In the smaller orchards, the peaches are bought and shipped by the fruit dealers in the towns.

There has been a great extension in the strawberry business in the country around Horatio in the last two years. The crop was very profitable this year, and the fruit farmers have done well.

Rough land similar to the land the peach orchards are on can be bought for from $15 to $25 an acre. Most of it is covered with a growth of cut-over timber, which would have to be cleared at a cost of about $15 an acre. Then it costs quite a bit after that to get the land into bearing peach trees. The fruit farmers in that section are doing well, and are making good money on their investment. In addition to the fruit, the principal crops grown in that community are corn, cotton and cow peas. Much of the land, however, is covered with trees.

Pack Your Apples

and other fruits with the

"NEW ST. LOUIS BARREL HEADER"

—the Standard Barrel Press of the U. S. Strongest, simplest and quickest acting press made. As light and strong as steel and hardwood can make them. Thousands now in use by most successful fruit growers everywhere. Indispensible to every grower who would pack his fruit evenly and tightly before heading his barrels. Special price in quantities. Order today. Every header fully guaranteed.

HYNSON TOOL & SUPPLY COMPANY
4756 Easton Avenue. St. Louis, Mo.

In writing advertisers please mention The Fruit-Grower.

Quality, Not Price, Sells Berckmans' Fruit Trees

Old customers come, buy and then ask the price. They know Berckmans' trees make good. Back of them are half a century of experience, good soil, clear cultivation, and a climate that produces hardy, vigorous stock that succeeds both North and South.

Get Our Catalog Now

Our big catalog tells *when, how and what to plant*, and lists the best fruit and ornamental shrubs. It's valuable—free.

P. J. Berckmans Company, Inc.
Box 1070F Augusta, Georgia

In writing advertisers please mention The Fruit-Grower.

Just now the garden at Morrisania is the most attractive feature of the place. Our garden is made in a young apricot orchard, and as apricots are just now at their best, we have fruit and vegetables producing bountifully at the same time.

As there are about thirty persons now at Morrisania to be fed, a considerable quantity of vegetables is needed every day. In planning our garden last spring we thought to plant enough of everything so that we would have about enough for our needs, but everything produces so bountifully that we have more of everything than we can use.

Three years ago the garden at Morrisania was a very insignificant affair. It was said that the hired men, who eat at the "bunk house," would not eat vegetables; that they wanted meat and potatoes, and the so-called "substantials." They still want meat, it must be admitted, but they also consume great quantities of vegetables.

Our garden is in charge of Neil Buteyn, a market gardener, from St. Joseph, Mo., and it is as pretty as a flower garden. Neil has everything growing, and plenty of it. In planting the garden he seemed to have an idea of the beautiful, and everyone passing along the road stops to admire the neatness of the garden, with its straight rows and well-arranged planting. In the space between two rows of trees are two rows of parsnips, one of carrots and one of salsify. If there is anyone who cannot realize that a vegetable garden can be beautiful, we wish they could see this space. The rich, dark green of the parsnips contrast beautifully with the fern-like leaf of the carrots, and the gray-green, grass-like foliage of the salsify. The rows are very long, and the space is most beautiful.

Another space has long rows of head lettuce planted alongside rows of beans, with rows of peas forming a background. Here again is a beautiful contrast in color and in the height of the plants in each section. Then there are long rows of celery—almost a quarter of an acre, perhaps—and this crop makes a most beautiful picture when properly cared for. Celery grows to perfection at Morrisania, and we expect to have a lot to sell this fall.

Here are some of the things now being used from our garden—compare it with the few vegetables on the table of many farm homes:

Beans, two kinds; beets, cabbage, carrots, cauliflower, celery, sweet corn, cucumbers, lettuce, onions, parsley, peas, peppers, potatoes, radishes, summer squash, Swiss chard, tomates, turnips. Then for use later in fall are: Endive, cantaloupe, watermelon, parsnips, salsify, spinach, pumpkin, Hubbard squash, winter turnips.

Quite an imposing list, isn't it? And yet everyone of these vegetables is available for most of our farm homes at some time during the season. Morrisania is favorably located, so that some vegetables, such as lettuce, peas, radishes, etc., are good all summer long, but most gardens can have them at least in early spring and in late summer or early autumn.

When Neil gathers his vegetables for the "main house" and for the "bunk house" he looks as though he were going to market. Everything is fixed up in an attractive manner, just as if it were to be sold, and the whole presents a most attractive appearance. And the beauty of it is that we can have several kinds of vegetables for a meal, and a different list every day, if desired.

The Apricot Crop.

Our apricot trees are just getting old enough to bear well, and this season they have certainly produced a wonderful crop. The trees were planted by the former owner of Morrisania, and we have no record of varieties, but there are several different sorts in the garden.

One variety, which is said to be Moorpark, is certainly a fine one. It may not be Moorpark, but it is worthy a good name, anyway. The tree is an upright grower, with long, willowy branches; fruit is very large, many specimens being two and a half inches in diameter; flesh is creamy white, skin, a beautiful dark red on the sunny side, shading off to pinkish white in the shade. This apricot tastes very much like a rich, juicy peach, and has the regular peach odor; the fruit looks like peach, too, except that there is no fuzz. Quality is very rich and good. Tree is not a heavy bearer, but seems to bear heavier crops as it becomes older; last season the crop of this variety was very light, but was much larger this year. The only objection which can be urged against this variety, as it grew at Morrisania this year, is that there is a tendency to ripen first at the seed, on one side; what appears to be a perfectly sound, firm fruit may have a soft spot on one side, next the seed, and this may injure its shipping qualities, unless the fruit is picked very early. However, four crates of this sort which were shipped by express to St. Joseph arrived in perfect condition.

We have several varieties of yellow apricots, which seem to be very similar, except ripening at different times. This fruit grows to perfection at Morrisania, and crops are regular. In one day 129 quarts were canned, and we are now drying a lot in the sun. Indications are that they will dry quickly, and sun-dried fruit is in demand by those who know that it is put up right.

The former owner of Morrisania used to dry the prune crop, and there are a great many slatted trays which were used in the evaporator. These are just the thing for spreading out the apricots, and with a mosquito netting to keep the bees away, we expect to have something very fine.

At various times Fruit-Grower subscribers have asked about apricots with edible pits. All our varieties seem to have edible pits, and the seeds are all saved, and when dry they make a fine substitute for almonds. Of course, they are not so large as the kernel of an almond, but have the same taste.

Apples are growing very nicely, except on some of the trees which are too full. Notwithstanding our Jonathan trees were thinned severely, many of them now have entirely too many apples. The rural New Yorker recently said that apple-pickers are born, not made. We might add that good apple-thinners come the same way. Some of the men we had thinning apples did pretty fair work, but others slighted the task, and results are now showing up.

Our Jonathans this season set an enormous crop; it seemed as if every blossom was properly fertilized and made an apple. When the trees were thinned clusters of six to nine apples were found, showing that every bloom had set. From some trees as many as 2,000 apples were removed, and as the trees are not large, this seemed heroic thinning—but as many more might have been taken from some trees.

During the past week (Aug. 17) we have gone over some of the trees again, taking off more apples, to relieve the tree and help it to properly mature its enormous load.

NEIL BUTEYN AND A LOAD OF HIS FANCY VEGETABLES.

Our alfalfa cover crop is coming along nicely, and promises to be a good stand for our purpose. This alfalfa was seeded this spring, with half a bushel of oats per acre as a nurse crop. Part of the orchard was seeded without any oats, and has done far better. True, it was planted earlier, but it would likely have done better, anyway. Next time we will plant the alfalfa alone as the trees furnish all the shade the young plants need.

The nurse crop of oats were cut some weeks ago, but, as usual in this country, they have stooled and made a second crop. Next week we will cut the oats and alfalfa again, letting the cuttings lie as they fall.

Since we announced that our orchard had been seeded down to alfalfa we have had protests from many of our good friends. Most of them think we have made a fatal mistake. Some say alfalfa is so hard to get out of the orchard that we will always regret having planted the crop, Others say alfalfa takes too much moisture from the soil, and so on. One friend from Wisconsin says alfalfa roots go away below the roots of the apple trees and will take moisture which the latter should have, and that because of this fact our trees will suffer from lack of moisture.

Now, the very condition of which our Wisconsin friend complains is just what we want to secure. Alfalfa roots do go deep, and they do take lots of moisture—but we need a deep-rooted plant in this orchard. The soil in this orchard has been kept clean so long that there is not much humus in the soil. The soil particles lie close together, and water has not worked through the soil as it should; it has not gone down deeply, because of this condition.

We have already found a great improvement in the way the water works through the soil. In this orchard where the alfalfa shade crop is planted. The roots of alfalfa and the oats plants have helped the water to go down and to spread out. This season we have soaked the ground better in two days' watering than we did last year in four days. We may need to water more often with this cover crop, but not so long at a time.

As for getting rid of the alfalfa, we believe we can do this all right. It was drilled in, and was kept at least four feet from the trees. It will be turned under in autumn of 1913, and we believe there will be little difficulty in keeping the orchard clean for a year or so, when red clover will likely be used as a cover crop.

A lot of orchardists in the arid regions are making the mistake of not using cover crops—or "shade crops," as they are coming to be called out here—and here at Morrisania we want to find what is best and then to use it regularly.

Warranted to Give Satisfaction.
Gombault's
Caustic Balsam

Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
The Lawrence-Williams Co., Cleveland, O.

Don't Cut Out A SHOE BOIL, CAPPED HOCK or BURSITIS FOR
ABSORBINE

will remove them and leave no blemishes. Cures any puff or swelling. Does not blister or remove the hair. Horse can be worked. $2.00 per bottle delivered. Book 6 E free.
ABSORBINE, JR., liniment for mankind. For Boils, Bruises, Old Sores, Swellings, Goitre, Varicose Veins, Varicosities. Allays Pain. Price $1 and $2 a bottle at druggists or delivered. Will tell more if you write. Manufactured only by
W. F. YOUNG, P.D.F., 34 Temple St., Springfield, Mass.

Irrigate Your Orchard or fruit patch without expense or bother of pumping. Use an automatic
RIFE RAM
Costs little to install—nothing to operate. Raises water 30 feet for every foot of fall. Land lying above canal or stream supplied with water. Pumps automatically day and night, winter and summer. Fully guaranteed.
If there is a stream, pond or spring within a mile, write for plans, book and trial offer, FREE.

RIFE ENGINE CO.
2521 Trinity Bldg., New York

NATURAL FINE-Ground PHOSPHATE
In Rotating Your Crops don't fail to apply Natural Fine-Ground Phosphate when breaking your clover, grass or grain stubble sods. This is the best time to apply it to the soil direct. Address,
THE RELIABLE LAND BUILDER
The right amount applied just then, at not over $1.00 per acre cost per crop, will increase each crop grown during the rotation from 50 to 75%. Write for free Booklet, telling all about it.
THE FARMERS GROUND ROCK PHOSPHATE CO. MT. PLEASANT, TENNESSEE

TONTITOWN, ARKANSAS

A Large Colony of Italians Near Tontitown Have Solved the "Back to the Soil Problem"

More than eight hundred Italian colonists are living in a prosperous community near Tontitown, Ark. They own more than 5,000 acres of land, and are doing very well financially. The leader of this colony is Father Bandini, a Catholic priest. Father Bandini and his people have successfully answered the question of what to do with the foreigners from southern Europe, who are coming to the United States in increasing numbers.

At Tontitown, about eighty families of Italians are farming forty acres each; they have their own school

FATHER BANDINI.

and church, and all are happy and contented, because they have a work which is congenial, in an environment which ministers to all of their needs.

The colony is the outgrowth of a plan originated by Austin Coburn, a wealthy man of New York City, who desired to show that the people from southern Europe would make good farmers and citizens, if they could be placed out in the open country, away from the cities. He has studied the immigration question, and he saw that while the people from northern Europe who come to America are quickly absorbed into the population and become good citizens, the people from the southern part of Europe fit into American life and become good citizens much slower. His study of the question had shown him the proportion of the people from northern Europe that go to the farms is much higher than those of southern Europe. This probably was partly due to the fact that farming in the United States is very much different from farming in Italy, and the other south Europe countries.

Most Italian people go to the cities when they come to the United States, where they drift to the slums, and tend, in many cases, to degenerate. A high type of people never can be produced in the slums of the cities. After the Italians have lived under these conditions for some time, they are unfitted for country life, because the "glare and glitter" of the city is in their system. They do the hardest, most disagreeable work there is to do in the cities, and they do not make citizens of an especially desirable class. Mr. Coburn believed that if the people were sent to the country, when they come to America, they would develop into happy, contented, prosperous farmers.

So he established the first Italian colony in Chicot County, Ark., and called the place Sunnyside. This colony was destined to fall, on account of the many disadvantages of the location. Mr. Coburn arranged with Prince Ruspoli, mayor of Rome, Italy, to send 100 Italian families to his colony every year for five years. Every family was to have 20 acres of land, with a barn, house and other improvements, for which the colonists were to pay $2,000, in twenty annual installments. The first party arrived at Sunnyside in December, 1895.

Trouble began for the new people at once. To begin with, they made the mistake of trying to grow cotton on their land, and as they knew nothing of the growing of cotton they did not produce profitable crops. Then, $100 an acre was too much to pay for their land, and they probably could not have paid out on the land if they had grown good crops, and all of the other conditions had been all right. The locality was swampy, fever was the common thing, mostly because of impure drinking water, and many of the colonists died. Many became discouraged, some went to South America, some returned to Italy, and many went to the cities of the north. Only the best and bravest of them had the nerve to remain.

Here was where Father Bandini entered the scene. Mr. Coburn visited his colony, and saw the conditions were not good, and that unless he could get a good leader to take charge, he soon would have no colony. So he sent for Father Bandini, prevailing on him to go out to the settlement, and lead the people on to better things.

Father Bandini was born in 1853, and is a man of noble birth. He received a broad education in Italy, which he finished at the University of Aix, France. He had been a special student in law and mathematics, and had made a special study of the great world problems of sociology and economics. He taught in a college in Italy for some time, and then he became a priest.

AN ORCHARD IN THE ITALIAN COLONY.

He was sent to America to study the problems the Italians who come here have to contend with, and in the study of this problem, which took three years, he traveled in every state, and spent much time in the slums of the larger cities. Everywhere, he saw his people were, in most cases, living lives that would not tend toward their best development, morally, mentally and physically. He saw he could do more good in America than he could in the home country.

The problem looked larger and larger to him all of the time. In speaking of this part of his life, he told a representative of The Fruit-Grower recently: "When I began the study of the immigration of the people from Italy into the United States, I was certain of a number of things that would solve the problems of the foreigners, and make life easier for them here. But as I traveled over the country and observed the conditions more, the harder the problem looked to me. But I did see the Italians were lacking in leaders who had the welfare of the people at heart, and I saw there was a great work to do here."

So Father Bandini returned to the United States, after he had gone to Italy to make his report. He went down into the slums of New York City, and organized the St. Raphael Society of the United States for the Protection of Italian Immigrants. The purpose of the society was to protect the Italian people who come to this country, to find good employment for them and to aid them in living good, clean lives. The society prospered, and soon it was able to build a three-story building for its home. Father Bandini was the leader in this work for three years.

His work attracted much attention over the country, and he received many attractive offers, measured on a financial basis, to go to other places. He was not especially interested in the money end of the work, and he did not go to the colony in Arkansas for the money he received, but to find out whether the people of Italy could make a success of farming in this new country, as that fact had not been demonstrated at that time. He saw the conditions were not favorable for the development of a successful colony where they were, and that they must move to a more favorable location. So he began to look for another place for his people.

About this time, Austin Coburn died, and the colony was left to its fate. Seven miles from Springdale, Ark., Father Bandini found a farm of 700 acres for sale, and bought it, although he had to borrow most of the money to pay for it. The soil in that section is good, and the climate is very healthful. After terrible experiences the colonists had in the fever swamps, the matter of good water, and other favorable surroundings, were of primary importance.

So, with the forty families that remained, Father Bandini established his settlement, which he called Tontitown, in the spring of 1898. The settlement was named in honor of Henry Tonti, an Italian explorer, who established a settlement at Arkansas Post, now in Arkansas County, in 1686. He also was with the French explorer, La Salle, when he traveled over the Mississippi Valley, and they explored the region in Ohio, Illinois and in the states in that general section with great care.

The colonists did not begin to live lives that were free from care at once. Far from it. They were in debt $19,000, and for the first two years the crops were almost a total failure. But they gradually established vineyards, and also began the manufacture of cheese, just as soon as they could get the money to buy cows. While many of the common

K-R-I-T

Model "K" Touring Car, Fully Equip ped—$900

Equipment includes three oil lamps, two gas lamps, generator, top with side curtains and top cover, windshield, horn, demountable rims with spare rim, tool kit with jack, and tire repair outfit with pump.

Judge the K-R-I-T as you would judge a horse

You don't buy a horse on the say-so of the man who has it to sell.

No. You look the animal over thoroughly to discover all his good points.

You put him through his paces to see what he can do on the road and on the farm.

We want you to judge the K-R-I-T the same way—not on our say-so, but on what you see in the K-R-I-T and on what it shows you it can do.

Match it up against any or all other $900 cars, or against cars even up to $1500 if you like—we have nothing to fear from such comparison.

Why? Because the K-R-I-T at $900 gives you more actual value, that you can see and recognize, than many cars of higher prices.

It has all the power you'll ever want or need—on any road or hill you'll travel.

It gives generous comfort and room to its five passengers.

And it costs a good deal less to run and keep because it hasn't the excess weight of a larger car.

Find these things out for yourself by going to the K-R-I-T dealer in the nearest town; or telephone him to bring the car out to the farm.

He'll be glad to show you the car, either in town or at your home.

If you can't locate the K-R-I-T dealer, write us. Write anyhow for the catalog.

Other Models

Model "U" Underslung Roadster $1000
" "KR" Roadster 900
" "A" Roadster..... 750
" "KD" Covered Delivery. 900

KRIT MOTOR CAR COMPANY, 1009 E. Grand Boulevard, Detroit, Mich.

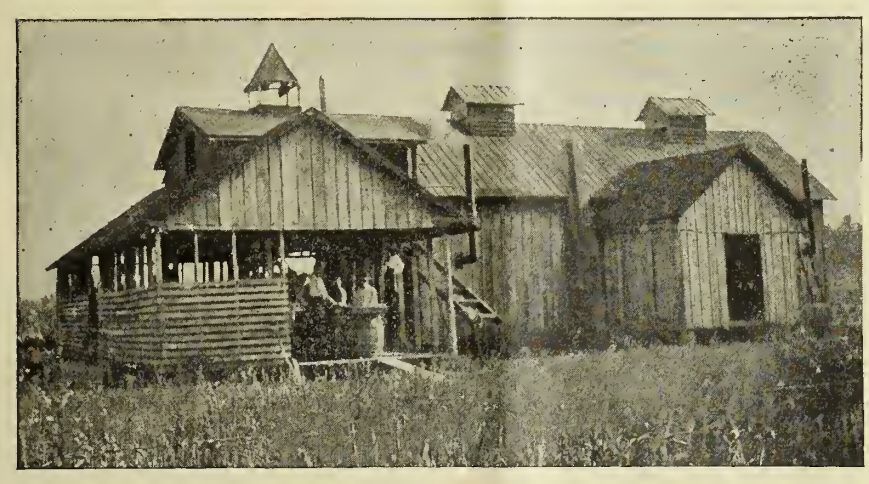
PEACH *and* APPLE TREES—2c *and* UP

Strawberry Plants, Silver Maples, Plums, Cherry, Pear, etc. Sell direct to planters at wholesale and save 50 per cent. Free catalog.
Tennessee Nursery Co., Box 7, Cleveland, Tenn.

crops of that country are grown, such as corn, cotton and cow peas, the principal lines of production are wine and cheese. These products bring in much of the money to the community. They are sold to the better trade in the east. At first, when they began to produce these specialized crops, they had some trouble to get a good market, but Father Bandini had many friends back in New York and other cities, who helped sell the produce. Some few times, the colonists have had a member of the colony go on the road for a few days to sell the produce, but that has not been done for some time. It is not necessary, for the buyers now come to Tontitown, and buy the produce direct.

In the first two years, when the crops failed, the men had to work in other places some of the time. Some of them went to the mines of the Indian Territory, and some worked in other parts of Arkansas where the crops were good. But always they would come back when they obtained some money, and go to work on their home places.

Soon much of the debt from the first land was paid, and things began to look brighter. Other families came from Italy, and the limits of the colony gradually were expanded, until now more than 5,000 acres are owned by the Italians, and but few of them are in debt. The colonists have been very careful about the new



ONE OF THE APPLE DRYERS AT TONTITOWN.

families that have come to take up their homes at Tontitown. Always, they have tried to get persons from the country, who have at least a little money, and who are willing workers. For of such people is a good community built.

Soon a large church was built, and dedicated in November, 1900. A large school was established, and many of the students in this school today are from other parts of the state, for it has a reputation for high-class work. Father Bandini is the head of the school.

At first, the farmers in that part of the state were inclined to resent the "invasion," as they called it, of the Italians. In fact, the feeling became so strong at one time that it took the form of an organized raid by some of the persons in that section, who rioted through the village, destroyed some of the crops; and even set fire to the schoolhouse. This was the crowning insult, for it was in the schoolroom the children would learn American ways, and to love the country of their adoption. As Father Bandini saw that nothing of this kind must ever be allowed to happen again, he stated the town would be policed from then on; that his people would meet force with force, and that he would be the leader of an armed body to protect the community. There never was any trouble after that.

Every effort has been made to learn American language and American ways, and to fit into American life. And in that they merely were following the advice of the Italian ambassador to the United States. When Baron Edmondo, the Italian ambassador to this country, visited the colony, he made the people a speech, in the course of which he said: "If you come to America to make your home here, be Americans, live Americans, and you will be honored and respected by the American people. Don't come here and live Italians, but sever your allegience to your native country, and cast your lot here."

When the Baron returned to Washington, he told of his impressions in the new country. The following was a part of his interview with the St. Louis Republic: "To my mind, there is only one way to deal with the immigration question in this country, and that is to remove these thousands of foreigners who are coming to America every year, and pouring into your great cities, where they soon become victims of the poverty of the eastern cities. I went into a strange and beautiful land, and found my people happy, contented and upright, and they are respected citizens of that country. Many of them came into the locality with hardly a dollar, and some of them without a coat to their backs. Today, every man in the colony owns a farm and has paid for it, while a good many of them have good sized bank accounts."

In the last few years, there has been a great extension of the strawberry growing in that vicinity. The building of a new railroad to Tontitown has made the marketing of all produce much easier, and there will be a great extension in all lines of fruit growing.

Then the settlers are doing good work in other lines. They have established a canning factory, where much of the surplus fruits and vegetables may be saved; a fruit evaporator, and a lime factory, where some profit may be made from the natural resources.

Grape growing is one of the principal industries of the community. As the Italians came from northern Italy where grape growing is one of the main lines, the men understand the growing of this crop better than most other crops. Most of the vineyards are not large; the average is about five acres, while the largest is twelve acres. The settlers just grow the amount of grapes the family can care for. Most of the grapes are marketed as wine, which is sold for a high price in the eastern cities.

At first, the settlers tried to grow Italian grapes, but they did not succeed. So they began the cultivation of American grapes, and have found they could make a good profit from them. They have had the best success with the Virginia grape, which is a small, reddish variety. They also have made extensive plantings of the Concord, Elvira, Delaware and some of the other varieties, and they make wine from them all.

Of course, not all of the methods of production used are the most desirable. Take, for example, their way of making wine: It is made by the families that grow the grapes, and they have a plant for every family, and for this reason the product is not uniform. In California, where wine making is one of the principal lines, most of the wine is manufactured in large establishments, where a product that is uniform can be made. That cannot be done at Tontitown, as the wine that one family makes will not be absolutely the same as the wine that other families make. And it is the same way with cheese. Most of it is made by taking the milk produced by the cows of several families. Thus while the product is high class, and commands a good price, it is not absolutely uniform. It probably would command a better price if it was uniform. One of the needs of the community is for a cheese factory, and for a wine factory.

Much of the credit for the success of the community must be given to Father Bandini. Leadership is essential in any movement, and a movement such as this requires high intelligence from the leader. The colony has shown that people from the southern part of Europe can make a success of farming in America, if they have a chance. They have shown that if the Italians are given land, and a chance to produce fruit, they are as successful in growing it as they are in selling it at the street stands in the cities.

Father Bandini has solved some of the problems which have caused other colonies of Italian immigrants to fail. He has ministered to all the needs of his flock. He organized a band among the young men, and has set a high standard for their music. Recognizing the need of play among the younger boys, he has taught them to play baseball, and is a leader in their sports. He is the friend and adviser of his people in matters temporal as well as in spiritual affairs, and is in every sense a leader.

The success of the Italian colony has much of encouragement for the future of immigration to America, and contains much of encouragement for the man who has troubles. For the Italian settlers have passed through a sea of trouble, want and sickness, and have come finally into the possession of good homes, and pleasant, peaceful surroundings. The way has been long and hard, but life is now peaceful and bright.

Renew your subscription today.

Your Problem—

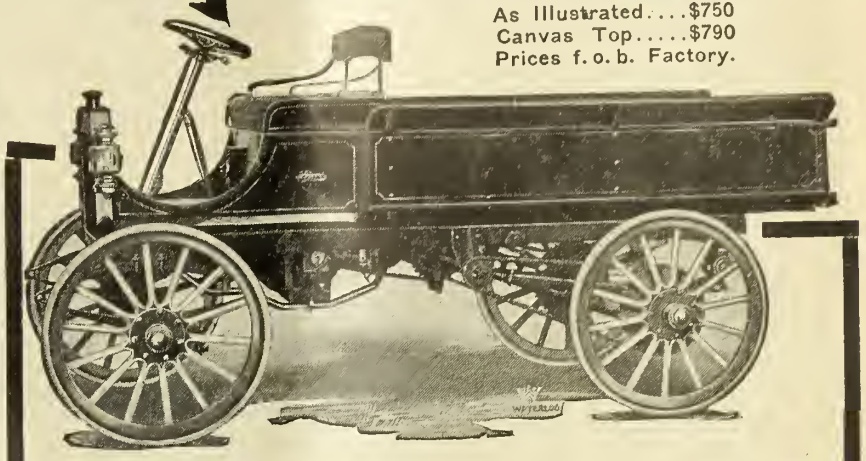
With the biggest fruit harvest of years, Mr. Fruit-Grower, how will you market it? Will your delivery expenses eat up your profits?

Wouldn't you be interested, right now, in a system that would cut your delivery expenses in half?

Wouldn't you be interested if you could make five trips to town, where you now make two? Of if you could do all your "town going" in the morning and have the afternoon for other work?

The Answer — Dart

As Illustrated....$750
Canvas Top.....$790
Prices f. o. b. Factory.



A DART Truck offers you this prompt delivery at the slightest possible cost.

You will be interested to know that a DART with an average run of 43 miles per day cost but $3.12 per week for oil, gasoline and repairs. In other words in one month it cost $13.61 to run 1,116 miles.

You will be interested to know that another DART "increased the profits, doubled the territory and cut down expenses" for its owner.

Everything about this truck is "full measure." No skimping has been tolerated. Each part is tested to twice the strain you could possibly give it in ordinary service. The chassis is given a hundred-mile road test over rough country roads, so that your truck may have no weak spots.

With a capacity of 1,500 lbs., a twenty H. P. motor, a speed of three to twenty miles an hour and a fuel consumption of 16-20 miles per gallon of gasoline, it's easy to see why the DART is

"BOUGHT BY THOSE WHO KNOW WHAT'S BEST"

Immediate shipment if you order at once. At least send for our catalog—it costs nothing to investigate.

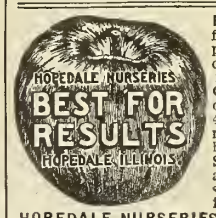
The Dart Manufacturing Co., Dept. FG, Waterloo, Iowa

Strawberry PLANTS Ready after Fall Catalog Now Ready October 15
J. A. BAUER, Judsonia, Ark.

RIGHT NOW
is the Time to Send for Our Price List on
FRUIT TREES
Varieties True—No Disease—We Pay the Freight
For Price List Address
NEW HAVEN NURSERIES
Box 125 New Haven, Mo.

Trees and Plants

Do you want the best at prices that are right? If so, look at this: Apple and Peach at 5c each; Plum, Pear and Cherry at 12c and 15c each; 40 Concord Grape for $1. All of our trees are grafted or budded from good breeding stock. Get our catalog and price list. They tell the rest. Give us your order now. We will save you money.
THE ROEDER NURSERIES, OSCEOLA, MISSOURI



FALL PLANTING is successful in this latitude. We have planted over 100 acres of orchards in the fall. We like it, and think you will, too. Our stock of both fruits and ornamentals is complete. Our 48-page catalog describes our methods of propagating, doing business; has chapters of Spraying, Cultural Methods and honest descriptions of sorts. Send for it TODAY, it is FREE.
HOPEDALE NURSERIES, Drawer X, Hopedale, Ill.

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing
Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*
M. BRUNSWICK & CO., Rochester, N. Y.

DIRT BANDS Have all the advantages of paper pots and none of the disadvantages. They are the best thing for early vegetables ever offered the grower and will increase your profits $50 to $100 an acre. Let us show you.
P. B. CROSBY & SON
BALTIMORE, - - - - MARYLAND

TREES AND PLANTS—All kinds—by the millions—at wholesale prices. Big supply apple and peach trees. Privet Hedging. THE WESTMINSTER NURSERY, Westminster, Maryland.

SAY! I am in the Berry Plant Trade for lifetime wholesale prices. Big supply apple and peach trees, old and new varieties. B. F. Smith, Lawrence, Kansas.

MODERN FRUIT METHODS

"Modern Methods of Harvesting, Grading and Packing Apples" is a book that should be in the hands of every orchardist who is desirous of getting the highest possible price for his apples. It illustrates and describes the Western methods of fruit packing. The fruit grower of the East is greatly indebted to his Western brother for showing him the great possibilities that lie in the fruit business, and if, with the great natural advantages of soil, rainfall and close proximity of market, he does not profit by this example, he has no one to blame but himself. A postal request to Dept "E" will bring you by return mail, free, the above book and new booklet, "Scalecide—the Tree-Saver." If your dealer cannot supply you with "Scalecide" we will deliver it to any railroad station in the United States east of the Mississippi and north of the Ohio rivers on receipt of the price. 50-gallon barrels, $25.00; 30-gallon barrels, $16.00; 10-gallon cans, $6.75; 5-gallon cans, $3.75. Address, B. G. Pratt Company, 50 Church Street, New York City.

H. J. WEBER & SONS NURSERY CO., WESTERN DISTRIBUTING AGENTS, NURSERY, MISSOURI

A FERTILIZER PROBLEM

There is considerable misinformation being peddled about in regard to the application of commercial fertilizers. Too often, farmers are advised to buy fertilizers and apply them on the shotgun principle, with little regard to whether the soil really needs the fertilizer, and to whether the application would pay.

Commercial fertilizers are expensive, and they must be used with considerable care, or they will never pay. There are some very definite things that govern the application of fertilizers, and these should be understood before one undertakes to apply them. The only elements you will find deficient in most farm soils are nitrogen, potassium and phosphorus. Of these elements, nitrogen is the most expensive. Nitrogen exists in inexhaustible amounts in the atmosphere, and it can be obtained from the air by the growth of the legumes. It is best to obtain it in that way. It usually will not pay to buy nitrogen, for one can grow it cheaper.

The ease with which nitrogen may be produced on the farm is one of the principal reasons why there are few cases where it will pay to apply the so-called "complete" fertilizer, which is merely a mixture of materials containing the essential elements in various forms, and a great amount of "filler." Almost all commercial fertilizers contain considerable amounts of this filler, which usually is clay or some similar substance that is not so valuable as most of the soil in your fields. This excessive use of filler is one of the principal reasons why fertilizers always should be purchased only after a guaranteed analysis of the material has been furnished. The price without the analysis means nothing. Get the analysis and figure out just what the elements are costing you. As fertilizer analyses are furnished in long, chemical terms, it would be well for you to get some soils expert to interpret them for you, if you don't understand chemistry. The soils department of your state agricultural college cheerfully will do this for you free of all charge.

But for most of the soils of the West, this can be taken as an axiom: It is not best to use a complete fertilizer. In the first place, most of the lands are not deficient in all three elements, nitrogen, potassium and phosphorus—when they are, they are very poor soils—and if one adds a complete fertilizer one is adding, in many cases, expensive fertilizing elements that are not needed. The use of a complete fertilizer is on the same principle as shutting your eyes and firing a shotgun in the air, you may hit something, but the chances are you will spend more money for ammunition than the game you kill is worth. The most profitable way to do is to know just what is aimed at, and then load the gun for that game.

The element that is most needed by western soils is phosphorus. This can't be grown as can nitrogen, and it is absolutely essential for the growth of grain. The supply of phosphorus in most soils is limited, and it is a substance that will be added to land a great deal in the future. Fortunately, there are big phosphorus mines in the United States, and if the government can control the supply of this material by the withdrawal of the phosphorus lands in the West and keep the fertilizer trust from cornering the supply, it will be a fortunate thing for the people. If any man ever controls the supply of phosphorus in the world, he will be more of a king than any other man who ever lived.

Potassium is an element that is not as likely to be exhausted as the other two, on most soils. It is fortunate that it is not, too, for the Germans control the supply of this material, and they make a big profit on all of the potash that is used in this country.

Now you may have been thinking of applying lime to your fields under the belief that lime is a fertilizer. Lime, or calcium, is an essential element, all right, but there is so little calcium used by the plant that there never has been a case known where it would pay to apply lime as a fertilizer. What lime does do is to correct the acid condition in the soil, improve its physical condition, and probably it will pay to apply lime to your fields just for this purpose. But, don't think the material should be added for the plant food it contains, for there is no need of that.

How shall you be certain of the elements that should be applied to the soil of your farm? The best and easiest way is to test them by the addition of the materials on small plats on land that is a fair average of the soil on your farm. And be certain it is average, for the plant food deficiencies of soils usually change promptly as one goes from one type of soil to another, and a test of the soil on one type may be of no value as a test for the soil on the rest of the farm. Apply the elements in narrow strips. Put phosphorus on one plat, potassium on another, nitrogen on the third, and then apply all three to one plat. If you desire to make the test complete, it would be well to add nitrogen and phosphorus to one plat; nitrogen and potassium to another, and potassium and phosphorus to another. Then while you are testing the soil, you should settle the lime question, and it would be well to add lime to a plat to study the effect, although you can determine fairly well whether the soil needs lime by testing it with litmus paper.

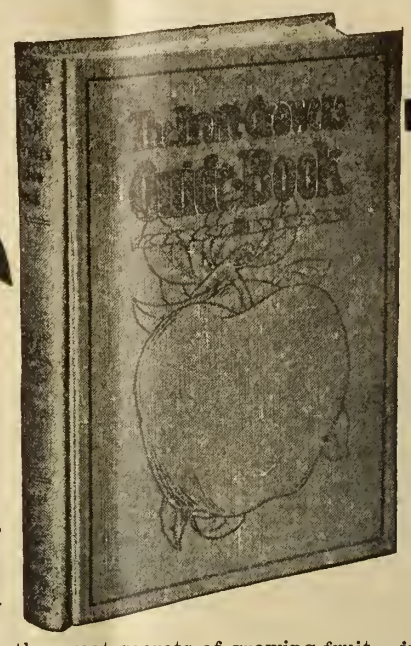
A test such as has been outlined is the best way to handle the commercial fertilizer proposition, unless you know just which elements are deficient. There has been much money wasted in this country in the past by the unintelligent application of commercial fertilizers, and unless more care is taken there will be much more wasted in the future. The rules that govern the application of commercial fertilizers are few, but they are important. The principal ones are: Never add fertilizers to your fields at all—except in small, experimental amounts—until you learn just what elements are needed, and then be certain you know just what you pay for the elements when you buy them. This means you must have a guaranteed analysis, and then understand enough of the chemistry of fertilizers so you will understand the analysis. If you do not have this information, you should get it before you spend much money for fertilizers.

It is not the purpose to discourage the use of commercial fertilizers in the West. Far from it. But there is a great need for intelligent use of these materials, for money can be wasted very rapidly by the unintelligent use of plant food elements. If your farm is like many of the farms of the Middle West, it will pay you to add some elements to your soil. But before you buy them, study the proposition, and be certain the elements you add are needed, and that you purchase them as cheaply as possible.

Indianapolis Gets Apple Show.

The Indiana Apple Show for 1912 will be held at Indianapolis Nov. 13-20. About $6,000 will be distributed in prizes this year. This is almost twice the amount of the prizes last year.

Renew your subscription today.



This Book Given to You FREE

Write for it Today

The Book for the Beginner and the Orchard Expert

It tells you the great secrets of growing fruit,—just how to make a success of your orchard. It tells how to bud and graft, how to prune, how to fight insects and rots that destroy your crops, how to pack your fruit, and hundreds of other vital, essential, fundamental facts about successful fruit growing.

You can make more money from your orchard when you know just what to do when things go wrong. This great book, The Fruit-Growers Guide-Book is the Rule and Guide to

SUCCESS

It is given to you absolutely free with a year's subscription to the world's greatest paper, The Fruit-Grower and Farmer. Thousands of copies of this great book have been sold at $1 each.

This is your chance to get it absolutely FREE. Cut out this advertisement, pin a dollar bill to it, sign your name and address, and mail today. The next mail will bring you a copy of this unequalled book and begin your year's subscription to The Fruit-Grower and Farmer.

Don't miss this exceptional opportunity. Act at once. Address

The Fruit-Grower and Farmer
ST. JOSEPH, MISSOURI

Protect Your Trees

DON'T take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using

Hawkeye Tree Protectors

Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—¾ cent apiece. Special sizes made to order. Write for circular and samples.

We make Fruit Baskets — get our prices.

Burlington Basket Company
118 Main St., Burlington, Iowa

DAYBREAK PHOSPHATE
GROUND 95% THROUGH 100 MESH

GROUND PHOSPHATE ROCK.

Is the Brown Tennessee Rock Phosphate pulverized to a fineness that 95% passes a 100 mesh screen, 80% passing a 200 mesh screen, and is absolutely guaranteed to contain a minimum of 13% Phosphorus (29¾% Phosphoric Acid).

Is endorsed by the leading experiment stations as the best and most economical carrier of Phosphorus. It appeals only to the intelligent farmer who utilizes Nature's abundant source of Nitrogen by growing legumes and who keeps his soil alive with humus. Write for literature and prices.

FEDERAL CHEMICAL CO.
Ground Rock Dept. COLUMBIA, TENN.

If You are Getting Wise through experience on the Great Social Problems of the City, You Will be Looking for a Solution by Investing in the Country.

If You will Come With Us on Our EXCURSIONS WEDNESDAYS OR SATURDAYS, we can "show you" choice 5, 10 and 20-acre

OZARK

Orchards in Bearing or Unimproved Tracts Ripe for Proper Development, upon which you can produce liberally if a willing worker. Good school, Church, Bank, Stores, Growers' Association, Hotel, Livery, Best of Society, Water, Soil, Markets.

ROUND TRIP TO GOODMAN
ONLY $5.00

If Deposit is Made with Our Ozark Department. Free Literature mailed on request. No expense except railroad fare and hotel.

JAMES B. WELSH
REALTY AND LOAN CO.
219 Finance Bldg., Kansas City, Mo.

BE A PROGRESSIVE

fruit grower and farmer, no matter what your politics. Here is fruit and alfalfa farm of 100 acres, ¾ mile Lanagan, McDonald Co., Mo., for $13,500; 70 acres dry bottom; will raise 75 bushels corn, 4 tons alfalfa per acre, 2,700 bearing apple trees loaded—York 750, Black Twig 900, Ben 1,050. Crop included. Five-room house, barn, big spring, ½ mile running water; 30 acres upland. Beautiful home, healthful climate. Good terms of payment. Big list Missouri and Arkansas fruit, stock and grain farms free. Have some special snaps of from 400 to 800 acres. Up-to-date township map, either state, 15c postpaid. Let's get acquainted and do business.

LOTT, "The Land Man"
307 FINANCE BLD., KANSAS CITY, MO.

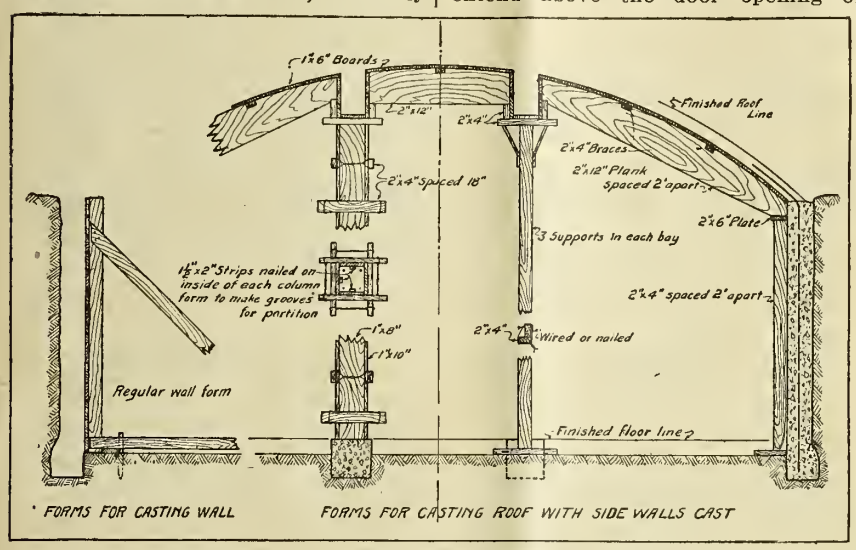
FREE—Arkansas Homesteads under new 3-year law. 500,000 acres now vacant. Our Homesteader's Guidebook tells just how to locate, acquire title, acres vacant by counties and full text of new law. Price 25c. Farm Pub. Co., Little Rock, Ark.

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. Hanson & Son, Hart, Mich.

A CONCRETE FRUIT CELLAR

There is need on every farm, and particularly on every fruit and potato farm for a storage cellar in which the produce may be held for some weeks. The most satisfactory cellar for such a purpose is one made of cement. It is easily constructed, cool, clean, water and vermin proof and will last a lifetime. The most uniform temperatures in a cement cellar are obtained when the greater portion of the structure is below ground. In digging the hole, therefore, it must be made sixteen to eighteen inches wider and longer than it is desired to have the interior of the room. This is to allow for the thickness of the walls at the two ends and sides.

In making such a structure from cement a mould or form is necessary to retain the cement in shape until it has set. Where a hole is dug no support is needed for the outside of a wall below the surface, the only support being the inside or sidewall form.



—(Courtesy Universal Portland Cement Co., Chicago.)

The inside wall forms are constructed of 2x6's running horizontally, braced by 2x4's running vertically, and spaced 18 inches apart. The 2x4's extend from the top of the wall to the sub-grade. The forms for the posts to support the roof are constructed of two 2x10's and two 2x8's and rest on the concrete footings. These forms are braced by 2x4's placed on opposite sides of the columns and wired together as shown in the illustration. The 2x4's should be spaced no further apart than 18 inches center to center. The girder forms are constructed of 2x6 boards and are supported by two 2x4's wired together, there being two such supports between each column. These supports may rest on blocks or flat stones and can be brought to desired height by wedges.

Make the sidewall forms of 1-inch siding on 2x4-inch uprights spaced 2 feet. As the concrete floor will be 4 inches thick, set up the forms on 4-inch concrete bricks. Above ground level use outside forms similar to the inside. To curve the end wall forms, lay them out with a 6-foot string in the same way as described below for arch rings. At the entrance end, to provide for a doorway, set between the forms a frame of 2x8-inch stuff 3x7 feet in the clear. Mix the concrete 1 part Portland cement to 4 parts bank-run gravel, or 1 part cement to 2 parts sand to 4 parts crushed rock. A sack of cement equals 1 cubic foot. With the forms in place, lay the 4-inch floor the same as a sidewalk, but without joints. Fill the wall forms in 8-inch layers with mushy wet concrete, and 6 inches from the top of the side walls and 1 inch from the outside, place two ⅜-inch steel rods the full length of the cellar. In the concrete two inches above the door-frame, lay three four-foot lengths of ⅜-inch rods. Roughen the top of the walls so as to insure a good bond with the roof. Build the stairway with a 4-inch thickness of concrete behind the steps proper. Each step has a tread of 10 inches and a rise of 8 inches. The sidewalls of the cellar hatchway extend above the door opening of the cellar proper, so that outside sloping doors may be added. In the top of the hatchway walls, while the concrete is soft, bolts are set heads down for holding the wooden sill to which the strap hinges are later attached.

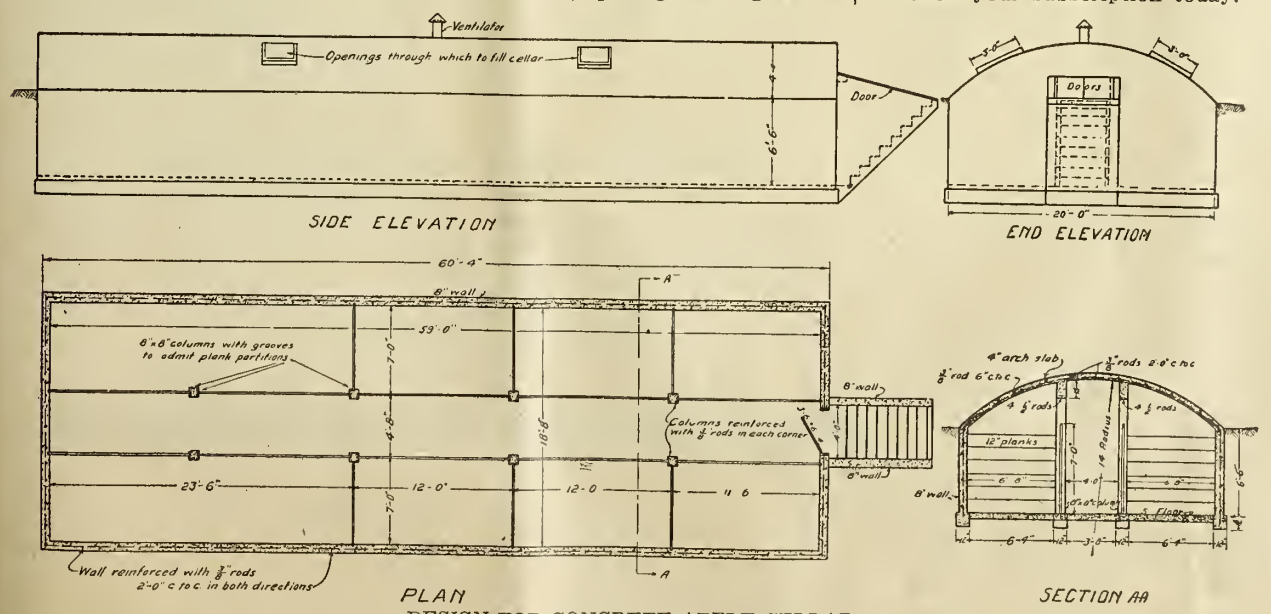
The Self-Supporting Roof.

When the sidewalls are one week old, begin on the roof. To give the roof a rise of 2 feet 8 inches, arch rings are needed. For laying out the rings, choose a floor or a bit of level ground. To one end of a strong string fasten a pencil and tie the other end to a nail driven firmly in the floor with exactly 5 feet 11 inches of string between the pencil point and nail. Mark out half a circle. Across the circle lay a board exactly 10 feet long so that its ends just touch the mark. The part of the circle above the board represents the arched inside of the roof. Place boards for the arch rings over the mark on the floor and nail them together. Mark the curve upon them and cut them to the mark. Brace the arch well, spacing the rings 2 feet apart, six will be needed. Fasten them securely in place to 2x6-inch liners spiked to the sidewall forms. Cover the rings tightly with 1-inch sheathing.

With the roof form ready, place the reinforcement upon it. Use ⅜-rods 14 feet long. Space them 6 inches apart crosswise and 12 inches the long way of the cellar. Wire the rods together where they cross. The roof must be 5 inches thick. Carefully work exactly 1 inch of concrete between the rods and the sheathing. Tamp the concrete until the liquid cement flushes to the top and then finish the surface smooth by means of a wooden float and steel trowel. Do not stop for anything until the roof is finished. In two to three weeks the concrete roof will be strong enough to support itself; then the forms may be removed.

Ventilation is necessary for most cellars. While building the wall make one or more air-shafts (similar to a chimney-flue) of 3-inch tile, by imbedding them in the concrete wall, with an opening inside at floor level and another outside well above ground line. By this arrangement fresh air is admitted. Place a tile chimney in the concrete roof and cover it with a galvanized iron hood for removing the foul air. If built late in the fall, protect the fresh concrete from freezing by covering it with clean straw or with old carpet so suspended as to leave a dead air-space between the concrete and the covering.

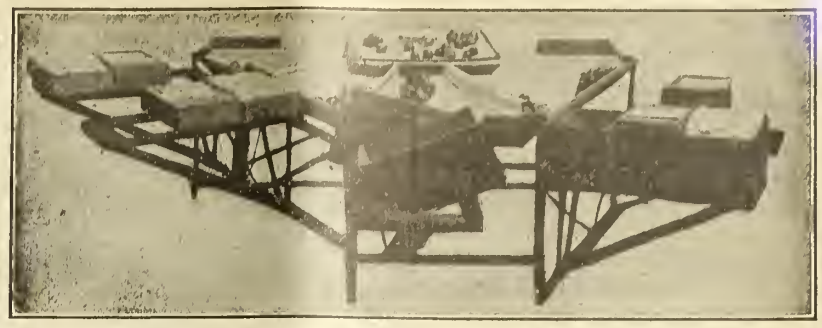
Renew your subscription today.



DESIGN FOR CONCRETE APPLE CELLAR.

Dimensions 60 feet long, 18 feet 8 inches wide on the inside, and 6 feet 6 inches high. (Courtesy Universal Portland Cement Co., Chicago.)

THE SYKES Sorting and Packing Table
For Any Kind of Fruit in Any Kind of Package



If you are interested in producing a better graded and packed box of fruit at a decreased cost you will want the Sykes Table.

Combines the sorting and packing in one table, which occupies but 10x15 feet of space, and will accommodate from one to five packers and two sorters.

Built of steel and canvas. Light and strong. Price, f. o. b. factories, $40.00.

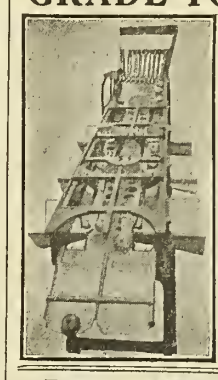
THE HARDIE MANUFACTURING COMPANY
Hudson, Mich. 49 N. Front St., Portland, Ore.

Apple Barrels and Boxes

Barrel Material, Supplies, Presses Picking Ladders, Etc. Second Hand Whiskey Barrels and Kegs

Hauber Cooperage Co., Kansas City, Kan.

GRADE YOUR APPLES



and Sell Them for All They're Worth

—We have perfected a machine that will assort and size your Apples More Accurately, Mory Rapidly and More Gentle than CAN be done by hand.

The Jones Sizers

for peaches, plums, apricots, onions, oranges, grape fruit, lemons, etc.—are standard—tested and approved by fruit growers everywhere. Catalogues FREE.

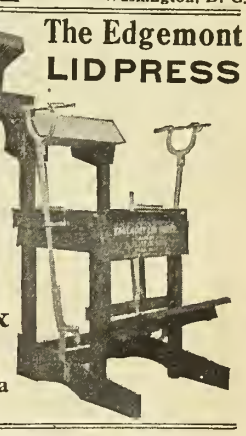
The Jones Grader Co.
1710 P. St., N. W.
Washington, D. C.

The Handiest Rig on the market for nailing Box Apples

Price $11

Send for Circulars

H. PLATT & SONS
Como Montana



The Edgemont LID PRESS

The CLEANEST CUT—BRIGHT ATTRACTIVE—OUR

Western Soft Pine FRUIT BOXES

DON'T SPLIT, LIGHT, STRONG—Nail easy. Send on post card your name, address, kind and quantity wanted. Then we will send you sample of wood and prices, your station.

Washington Mill Company
SPOKANE, WASHINGTON

Apple Barrels

Standard Size Apple Barrels. Also Nested and Knock Down Barrels.
LEON MILLER, Waynesboro, Va.

Apples Wanted

The Callender-Vanderhoof Co.
Minneapolis Minnesota

PEACH SEEDS FOR SALE

1911 AND 1912 STOCK. Write for Prices and Samples.
THOS. R. HAMAN, 1614 Oliver Street, Baltimore, Md.

ALONG THE CONNECTICUT

The Bay Road Orchard Co. Is Planting Extensive Orchards in the Connecticut Valley

A man who wants an orchard in Western New York may be able to find one which has been neglected which he can buy and clean up, and bring back to profitable bearing. The man who wants an orchard in Massachusetts must plant his trees, for there are very few old orchards available, and perhaps they do not contain the right varieties.

Accordingly, when Profs. Waugh and Sears of the Massachusetts Agricultural College decided to have an orchard of their own, they had to buy the land and start their trees, except for a very few old trees, which were literally alive with San Jose scale, on one of the farms purchased. These gentlemen organized a small company, in which some of their friends and neighbors invested a little money, and now the Bay Road Orchard Company has several peach and apple orchards well started, and planting still continues.

Both of these are Western men, and both have an appreciation of the advantages possessed by one who wishes to grow apples near to the large Eastern cities. They are introducing Western methods into their

FOUR-YEAR-OLD TREE IN WAUGH AND SEARS ORCHARD, NEAR AMHERST, MASS.

work, are planting one-year trees, and feel confident of the outcome.

The conditions under which these orchards were planted are entirely different from those which prevail with Mr. Marshall. Messrs. Waugh and Sears selected rolling land, near Amherst, of a type not considered especially fertile, but which is proving well adapted to orcharding. The soil contains considerable sand, and while there are some stones, they are not the huge boulders usually found in New England, but smaller stones, such as are found in the fruit districts of Southern Missouri. The soil works very easily, responds readily to good culture, and the trees planted by these men are making a very fine growth.

In great contrast to the young orchards in Western New York, these trees have very low heads. Some of them are headed not more than twelve inches from the ground, and when we suggested to Professor Waugh that this was pretty low, he replied that he would have them lower still if he could; that he could not see why one should devote several years to growing a long trunk on a tree, when this trunk is of no value after it is grown, except to connect the top of the tree with the root system; the shorter this connection the better, from his standpoint.

One-year trees are generally planted, and Professor Waugh took us over to where a few two-year trees were planted, and while the two-year trees were Wealthy and the one-year trees alongside were McIntosh, the latter had actually outgrown the two-year trees and are now considerably larger.

The soil is clean cultivated until mid-summer and then cover crops are planted and turned under the following spring. Handled in this way, the trees have made a very fine growth, and four-year trees are beginning to bear. This is contrary to the usual expectation of having to wait ten years before a New England tree will be ready to produce any fruit.

Messrs. Waugh and Sears have planted largely McIntosh, Baldwin, Wealthy and Palmer Greening, a local variety of high quality, which is much in demand among those who know it. The writer had the pleasure of eating several of these apples last January, a little past their season, and found them of very fine quality. The McIntosh apples grown here are also of very fine color and flavor.

Several peach orchards have been planted, and in one or two orchards peach trees have been used as fillers among the apples. In still another orchard Japan plums have been used as fillers among apple trees, but these gentlemen say they will not practice this plan any further; if fillers are to be grown, they will be apple trees. Many of the peach trees are in bearing, although the crop this season is short, only a few Greensboro having escaped the very severe winter. The fruit is of highest quality and finds ready sale in near-by towns, although if it should be necessary to send the fruit to distant markets, Boston and New York are only a few hours away.

The Bay Road Orchard Company will attempt to sell at least part of the apples direct to consumer, and therefore a long list of varieties has been planted, from earliest to latest sorts. It is thought that in order to hold trade of this kind, one will have to have something coming along almost continually, and this company will try to do this. Small fruits of various kinds do remarkably well and find ready sale in Amherst, Northampton and other near-by towns, all of which are reached by trolley as well as by steam cars.

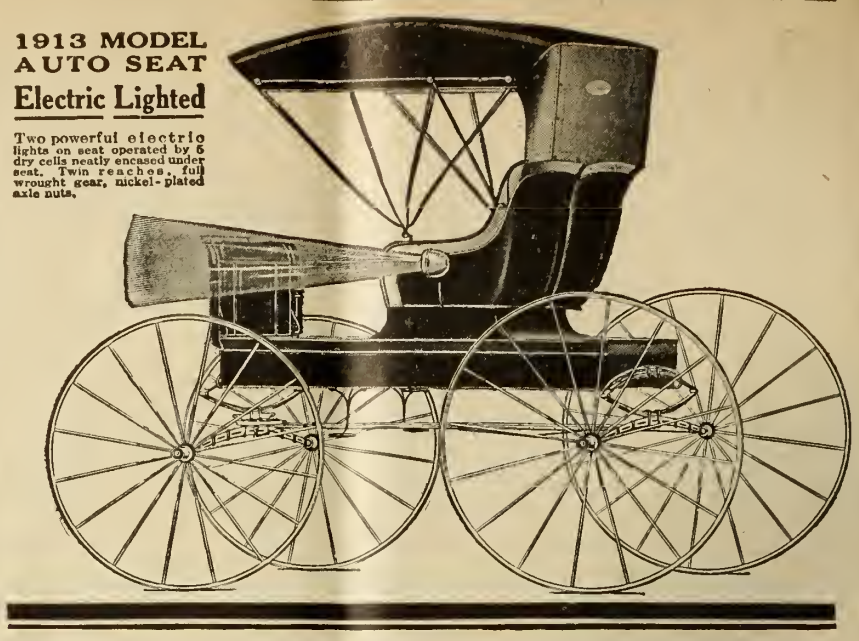
The low-lying land of the Connecticut Valley near Amherst is very fertile and sells at high prices; tobacco is extensively grown and the crop is very profitable. On the hillsides adjoining the valley the soil is of different formation, being sandy loam with deep sub-soil. While not so rich, it is better adapted to fruit culture, and this is where the orchards are being planted. It should be explained that since Messrs. Waugh and Sears bought the small orchard and cleaned it up, and since they began planting, about four years ago, there has been much local interest aroused in fruit culture, and many new orchards have been planted. Some of this land, splendid orchard soil, was bought for from $20 to $30 per acre. By using crimson clover, soy beans or some other legume as a cover crop, planting in mid-summer, this soil can be brought up to a high degree of fertility and trees make a very rank growth. The fruit produced in this soil is of very fine color, fine texture and splendid keeping qualities, and the outlook for the future is very bright indeed.

One of our illustrations shows a four-year McIntosh tree in one of the orchards planted by Messrs. Waugh and Sears, and from this illustration one can get an idea of the very rank wood growth made by the tree. This tree was started with an open center, but after-pruning has not been as severe as is generally practiced in the irrigated districts, where the open-center tree is so popular. The gentlemen in charge of the orchard believe in a modification of the Western plan, and somewhat more wood is allowed to remain in the tree. It is to be regretted that other pictures showing the general topography of the country are not clear enough to make good cuts. It would be hard to imagine a more beautiful panorama than that which stretches away from the hillsides on which some of these orchards are located. The wooded hills, the fertile valley, with the orchards lying between, make a beautiful picture, which will become more beautiful as the days go by.

J. M. I.

1913 MODEL AUTO SEAT
Electric Lighted

Two powerful electric lights on seat operated by 6 dry cells neatly encased under seat. Twin reaches, full wrought gear, nickel-plated axle nuts.



How to Judge a Buggy

There are some amazing facts about the buggy situation that *you* have *a right to know.* We can *afford* to tell them—and we're going to do it *right now.* During the past few years the market has been flooded with inferior buggies at prices which *seem* low—but which are really *outrageously exorbitant.* You want *quality*—of course. And there *is* a way of getting the absolute *maximum* of quality *and at the lowest price you can afford to pay.*

The Real Truth About the "Cut-Price" Buggy

The manufactnrer of the "cut-price" buggy doesn't worry much about *quality.* Instead he is content to put out a line that will *look* like the well known product of some *high grade* manufacturer. He copies the design and the lines just as closely as he can, relying on the fact that the average buyer will be deceived by the appearance into thinking that he is getting quality too.

Of course, he knows that he can never sell the same man a second time, *so he deliberately cuts the quality all he can so as to make sure of an enormous profit.*

The "Skimped" Way

A certain cut-price concern is already offering a buggy similar in appearance to the magnificent STAVER model shown above, at an *apparently* low price. We bought one of these buggies and analyzed it;—here are just a *few* of the ways in which it had been *skimped*—there are nearly a hundred more that we haven't room for.

Top

Fabric top—unlined—imitation rubber front and back valance. Roof stitched to quarter without welt, actual saving in factory cost..... $5.79

Seat

Gum-wood panels, kiln dried or green, no inside finish. Six coats of exterior finish, the last being a *glaze* varnish containing 30% rosin. This process gives a deceiving high gloss but has no "give" whatever. The slightest strain to the seat will cause it to check, flake and peel. Actual saving in factory cost..... $3.95

Body

Body of ordinary gum wood with inferior Ash, or in many cases Elm sills and posts.

Painted by the "glaze" system as explained in description of seat. Actual saving in factory cost..... $3.15

Dash

Frame of malleable iron, bolted, not coated with lead and oil or anything else. Covered with a cheap enamel split leather. Frame boot of cheap Gum Wood. Actual saving in factory cost..... $1.25

Gear

Malleable hangers; water-tempered springs; malleable fifth wheels; Elm reaches; maple axle beds; cull "D" grade wheels; malleable stay braces, wheel braces and fifth wheel forks. Actual saving in factory cost..... $9.42

Shaft

Made of Elm, with 20 in. point leathers; malleable reinforcements, no circle cross brace; flat leather cull straps; "glaze" painting. Actual saving in factory cost..... $2.40

The total saving on factory cost on these few items alone is **$28.61**; *the value of the buggy is lessened fully 75%.*

The STAVER Way

For 33 years we have been building the very highest grade of buggies and carriages made in America. That 33 year old reputation is worth millions of dollars to us. We must maintain it on a quality basis. The man who buys a Staver knows that he is getting a buggy that is *made on honor all the way through.*

Top

Highest grade leather throughout, including front and back valances. Lined above bows with 8 oz. all wool lining. Reinforced curtains. All leather and fabric *cut by hand.*

Seat

The Staver seat is made of air-dried *Yellow Poplar:* 1 piece back and 1 piece side panels. The 6 lugs that hold the top extend down on inside of the seat 6 in. and each is fastened with two 1 in. screws and one 1½ in. bolt. 2 coats of pure white-lead and linseed oil are used *on the inside* before the upholstering is put in. The outside receives *fourteen coats* and 3 *hand-rubbings.*

Body

The Staver body is made of *air-dried, Yellow Poplar,* ⅝ in. thick through the center, tapering to ⅜ in. at either edge. Sills and posts are constructed from the best White Ash and painted with 14 coats besides 3 water rubs, giving the finest and most durable finish it is possible to produce.

Dash

Wrought iron frame, coated with a heavy coat of lead and oil before being covered with grain buffed leather. The boot has a wrought iron frame welded out under the hammer and absolutely will not break or get out of shape.

Gear

The Staver gear has hand-forged Bailey Hangers; oil-tempered, graded spring (the easiest riding and most durable in the world); full wrought steel fifth wheel, black Hickory reaches; black Hickory axle beds, bent and turned from 2x2 in. stock; straight grain second growth Hickory wheels, spokes and felloes split before shaping. Wrought iron stay braces, heel plates and fifth wheel forks.

Shaft

Black Hickory, 21 in. bend; 36 in. point leathers; round jockey straps; half beveled steel reinforcements; circle cross bar brace; painted same as body.

STAVER

Write for Free Catalog

This is only the start of the story. We cannot urge you too strongly to get *all* the facts—to post yourself thoroughly on the real truth about buggies before you even think of buying. A postal will bring you the Staver Buggy Book and valuable, detailed information. Write today.

Staver Carriage Co.
Department 4536
76th and Wallace Streets - Chicago, Ill.

102

You will confer a great favor upon us as well as the advertiser if you mention The Fruit-Grower when writing.

FERTILE FARMS and Unimproved Lands in Delaware
diversified farming, delicious fruits and ideal homes. For information only, address State Board of Agriculture, Dover, Delaware.

BLOSSOMS FOR SPRING

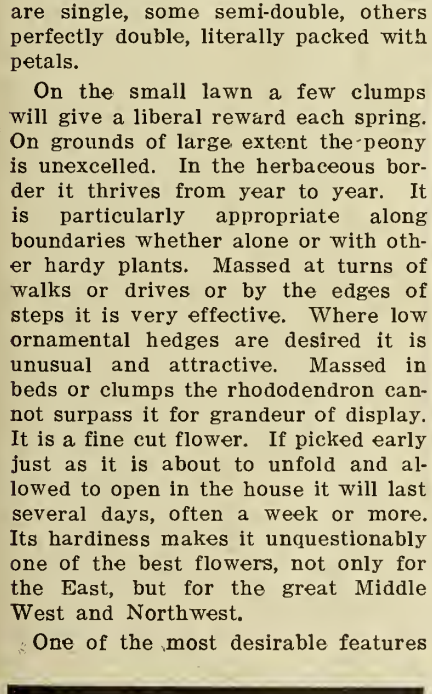
The Peony the Queen of All Early Blooming Flowers—Some of the Better Varieties

The annuals and bedding plants are brilliant and useful, but it needs no argument to convince anyone who has had experience with border and mass planting that the main dependence must be placed upon hardy perennials. Of these the most hardy, showy and easily grown of all is the peony. We are no longer limited to the crimson "piney" of grandmother's garden, but have them all colors from snowy white through delicate pinks to brilliant crimson, many delicately fragrant. While large and showy, they are not coarse, but beautifully formed. Some varieties are flat-topped, some cup-shaped, others globular. Some are single, some semi-double, others perfectly double, literally packed with petals.

THIS FORM IS KNOWN AS THE "BOMB" TYPE.

On the small lawn a few clumps will give a liberal reward each spring. On grounds of large extent the peony is unexcelled. In the herbaceous border it thrives from year to year. It is particularly appropriate along boundaries whether alone or with other hardy plants. Massed at turns of walks or drives or by the edges of steps it is very effective. Where low ornamental hedges are desired it is unusual and attractive. Massed in beds or clumps the rhododendron cannot surpass it for grandeur of display. It is a fine cut flower. If picked early just as it is about to unfold and allowed to open in the house it will last several days, often a week or more. Its hardiness makes it unquestionably one of the best flowers, not only for the East, but for the great Middle West and Northwest.

One of the most desirable features of peonies is the ease with which they can be grown. Given a generous preparation at the start you can make a great plantation of peonies with the assurance that beyond keeping the ground clean and fertile they may remain undisturbed for years. In the course of time they will get so thick that they should be divided and replanted, but this is little trouble. Peonies thrive in almost any soil, but do best in a deep rich loam. As they remain in one place a number of years it is well to thoroughly prepare the soil and they amply repay attention given them. Spade to a depth of two or three feet; add a liberal supply of thoroughly rotted manure, pulverize and mix thoroughly. Add a little sand or fine gravel if the soil is inclined to be sticky or heavy. Stiff soil should be well drained. While the peonies desire a liberal supply of water, the ground should not be of a swampy nature. Cover the crown three inches taking care that the earth is well firmed. Plant two and one-half to three feet apart to allow for future development. A mulch of coarse strawy manure is a benefit, particularly the first season. In the spring remove the coarser portions and stir the finer into the soil, taking care not to disturb the pinkish-white buds just appearing. Keep well cultivated the first season, after that the ground will be sufficiently covered so little cultivation is necessary.



THE SEMI-DOUBLE FORMS ARE ATTRACTIVE.

While peonies may be planted in the spring, the best time is early in the fall as soon as the roots are well ripened, beginning in early September, though planting may be done as late as the ground can be worked. They put out little feeding rootlets in the fall, during the open spells in winter and with the first touch of spring, so fall planting gives them an earlier start when the season opens. Planted in early fall almost all strong plants will bloom the first spring. After they become established they increase in size and profusion of bloom from year to year.

The peony is practically free from insect pests and plant diseases. Sometimes you will see ants running up and down the stems just before the buds are ready to open. They are after the gummy substance which exudes at the edges of the petals and require no attention.

MARIE LEMOINE, FINE LATE WHITE IS ONE OF THE "ROSE" TYPE.

The improved varieties have extended the blooming time over a period of about six weeks. The Officinalis type bloom in late April or early May, according to locality, followed by the general list, a few of which are named below. Every planting should contain Festiva Maxima, a paper-white with some inner petals flaked purplish carmine. Following this comes Alba Sulphurea, with its sulphur yellow center; Queen Victoria, an old standby, is a medium early white; Duc de Wellington, La Tulipe, Couronne d'Or and Marie Lemoine are excellent late white varieties; some with shadings of other colors.

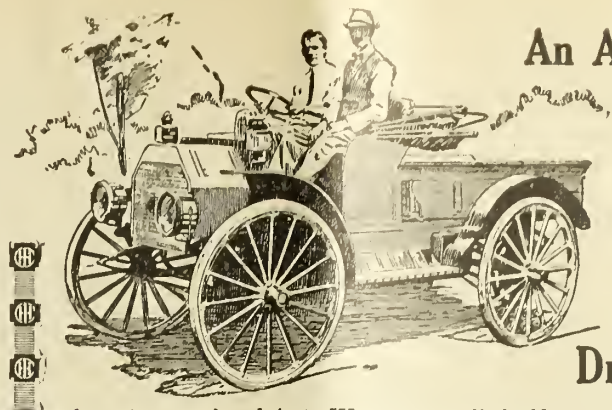
L'Esperance, a rose pink, is one of the earliest. There is a milk-white variety, but the pink is the one generally grown in America and is very similar to if not identical with Edulis Superba. Delicatissima and Floral Treasure are delicate pink, mid-season to late and very similar. Dr. Bretonneau (Verdier) or Lady Bramwell blooms late mid-season, is delicate silvery pink tinted lilac and is one of the most fragrant.

Rubra Triumphans always attracts attention by its brlliant purplish crimson and is the earliest of its color. Marechal Vaillant or Grandiflora Rubra is a large late blood red and is followed by Richardson's Rubra superba, deep glowing crimson with purple shading.

Each collection should have Golden Harvest. Its outer or guard petals are blush pink with a distinct blush white collar and a golden blush center, a few inner petals tipped and striped light crimson. The total effect is creamy pink. If this variety is not obtainable Jean d'Arc is equally desirable.

The varieties named are only a few of the desirable ones which may be obtained from almost any of the leading peony growers. More complete descriptions may be found in their catalogues. There is sufficient variety of color, habit and form to satisfy even the peony enthusiast, while the range of prices is so great as to fit any pocketbook. Many improved varieties may be obtained at very moderate prices. They are so permanent and so easy to grow you may rest assured you will be amply repaid for any amount invested. Plant them this fall and enjoy them next spring.

Get your neighbors to subscribe.



An Auto Wagon Travels At Less Expense Per Mile Than a Driving Team

AN International Auto Wagon costs little if any more than any good driving team, buggy and light wagon. With reasonable care it will last as long as the team will stand up to the work of the road. The maintenance cost of the International Auto Wagon is low because of the small expense necessary to keep up solid tires. About a cent and a half a mile for gasoline and oil, a cent a mile for grease and possible repairs—say three and a half cents a mile for all maintenance—is considerably less than the usual cost of keeping a road team.

An International Auto Wagon

will go anywhere that a team can go and will travel two to three times as fast. It costs nothing to keep when not working. It is a steady, every-day, all-day-long worker, with power enough to meet any emergency. It is simple—any member of your family can learn to drive it. The brakes are powerful—safe on any hill. The springs are resilient, making the car easy-riding. There is an auxiliary spring to take care of heavy loads.

The International Auto Wagon is quickly converted from a wagon for light hauling to a pleasure car, by the addition of an extra seat in the back. A top is furnished for protection from sun and storm.

Give us an opportunity to show you how many business trips this car will make for you, how much pleasure it will give your family, and at what little expense it will do it. A postal will bring catalogues and full information.

INTERNATIONAL HARVESTER COMPANY OF AMERICA
(Incorporated)
135 HARVESTER BUILDING CHICAGO U S A

I H C Service Bureau

The purpose of this Bureau is to furnish, free of charge to all, the best information obtainable on better farming. If you have any worthy questions concerning soils, crops, land drainage, irrigation, fertilizer, etc., make your inquiries specific and send them to I H C Service Bureau. Harvester Building, Chicago, U S A

IDEAL Corrugated Paper Cushions For Packing Apples

KEEP THE FRUIT UNBRUISED so that apples are delivered as round and solid as the day they were packed. Their use is an evidence of careful packing which commends your fruit to the trade and their cost is so low that every packer should AT LEAST INVESTIGATE.

Standard discs 16½-inch diameter. Discs and sheets cut to order in any size. Write us.

THE HINDE & DAUCH PAPER COMPANY
Department "3" SANDUSKY, OHIO

C. S. HARRISON'S SELECT NURSERY
YORK, NEBRASKA

Has the Finest and Largest Collection of **Ornamentals, Peonies, Iris and Other Perennials** this side of Chicago—SEND FOR PRICES

PLANT THIS FALL
Make Home a Delight

Plant Peonies This Fall

Pick out the spots where you would like to see them blooming and plant Wild Bros.' Peonies early this fall. They are full of real life and vigor and will reward you next spring with their beautiful, fragrant flowers. Write now for descriptive Peony list.

WILD BROS. NURSERY CO.,
Box 501. Sarcoxie., Mo.

THE OUTLOOK FOR FRUIT

The Condition of the Fruit Crop as Reported By Fruit-Grower Readers in All Sections

Many daily and weekly newspapers are circulating the report that the apple crop this year will be the heaviest that the country has ever produced and that the bottom has dropped out of apple prices. These are false reports largely due to wild guesses made by unscrupulous buyers who hope to scare growers into cut rate figures. It is the same old gag that is worked with more or less success every year. The reports from Fruit-Grower correspondents this month indicate that these reports are without foundation, and are also supported by the Government crop reports.

In 1896 the United States produced somewhat more than 69,000,000 barrels of apples. This record has not been equalled in recent years. Figures for other years are as follows: 1897, 41,536,000 barrels; 1898, 28,570,000 barrels; 1899, 37,560,000 barrels; 1900, 47,960,000 barrels; 1901, 26,970,000 barrels; 1902, 47,625,000 barrels; 1903, 45,000,000 barrels; 1904, 45,300,000 barrels; 1905, 23,500,000 barrels; 1906, 38,280,000 barrels; 1907, 29,540,000 barrels; 1908, 25,850,000 barrels; 1909, 25,415,000 barrels; 1910, 23,825,000 barrels. Figures are not at hand for last year, but was approximately 33,000,000.

The Crop Reporter, issued by the United States Department of Agriculture for 1912, gives the average condition of apples, taking the country as a whole, at 65.8 per cent, as against 53.9 on the same date last year, and a ten-year average of 53.9. The Fruit-Grower reports from all apple producing sections indicate that these figures are approximately correct. The apple crop for 1912 will be about 8,000,000 more than last year, or about 41,000,000 barrels. This is far short of the largest crop ever harvested before.

In estimating the crop of apples for 1912 account must be taken of the great decrease in acreage planted to apple trees in the states of the Middle West. There are fewer apple trees in Missouri, Kansas, Iowa, Indiana, Ohio than there were ten years ago. The census of 1900 gave Missouri approximately 20,000,000 apple trees. This number has decreased more than 25 per cent, according to the last census. The report of the nursery and orchard inspector of Ohio shows that the acreage planted to apple trees in that state decreased by 100,000 acres in ten years, and this decrease will more than offset the heavy plantings in the states of the Far West.

It is probable that the apple crop for 1912 will be one of the very best harvested in the last few years. Prices will likely range somewhat lower, but there is no need of getting hysterical over the apple crop this season and selling really first-class apples at extremely low figures. Just now apple buyers are very busy making wild estimates, but no one should be deceived. The crop is a good one, but not by any means the best this country has ever produced.

One of the favorable indications that growers will not be stampeded into a grand rush to sell at the beginning of the harvest is the report from so many who are putting the fruit in storage. More growers have sprayed effectually this year than formerly, and there will be lots of magnificent apples harvested. There will likewise be lots of miserable stuff dumped on the market at the beginning of harvest, stuff that should only be sent to the evaporator and vinegar mills. These will lower the opening prices, which will later rise to living figures. We urge our readers to not be misled by the false estimates made by the wild-cat speculators.

The following reports were made between August 15 and 22:

Arkansas.

Batavia.—Apple harvest will begin about August 25. The crop is very good and growers are talking prices of from 50c to $1.50. Two orchards have just been estimated by an expert to have 10,000 bushels each, with 85 to 90 per cent good marketable fruit. Many other orchards will average as well. A large number of varieties are to be found in this county.

Bentonville.—Jonathan apples will be the first harvested, beginning about August 26. They are in good condition, and Ben Davis fair. Jonathans selling at $2.50 to $3.25 per barrel f. o. b., according to quality. No prices made on Ben Davis as a large per cent of them will be shipped out in bulk on account of their scabby condition. The condition of apples here is very poor indeed and harvest will not begin until about September 1st. Growers are expecting 50c per bushel, but fungous diseases and codling moth have about done up the apple crop here.

Jonesboro.—Apple harvest has begun here and the crop is being sold to local merchants at 75c to $1 per bushel.

Lonoke.—There is the largest crop of Kieffer pears ever produced in this section and the local demand cannot consume it. There is no organization among the growers and some of the crop must go to waste for want of buyers. W. H. Vivion has 4,000 bushels; J. T. Barns, 100; Wm. Rettig, 150; Joe Rettig, 100; L. C. Bennett, 100; J. Cobb, 100, and Thomas Mason, Carlisle, Ark., has 200 bushels. Other growers are located at Hazen, Cabbot, Austen and Beebee.

Ozark.—A price of $1.75 f. o. b. is expected for apples here, the harvest beginning Sept. 15th. There will be 15 or 20 cars, not more than one-half of what was expected, as the dry spell in the early part of July caused a heavy dropping.

Piggot.—Apples and pears are good; plenty for home use, but none for shipping. Harvest begins about September 10 and growers expect $1 per bushel. Crop is good where sprayed.

California.

Watsonville.—Apples generally are in "A-1" condition. Picking will begin about September 1st. Growers expect from 50 to 90c. Bellflowers have a light crop, Newtowns are fine and have a heavy crop.

Colorado.

Canon City.—Thorough spraying, together with extremely favorable weather should give us a crop of fine quality. Apple harvest will begin about October 1st. No prices made yet.

Delta.—Growers feel that the price for Jonathan, Winesap and Rome Beauty will be about $1.25 per box at loading station. Ben Davis and Missouri Pippins, 90c to $1, with other varieties $1 to $1.10. We have the finest crop of apples we have ever had. Harvest will begin with Jonathans September 20 to 25.

Grand Valley.—Colorado growers are being urged to provide common storage space for at least part of the crop to lengthen the marketing season. If this is done Colorado fruit will be held back to some extent. Harvest will begin about September 25th. Apples are very good, free from worms and growing nicely.

Hotchkiss.—Apples are in very good condition and not many worms. Harvest will begin about Oct. 1st. The crop will be larger than last year, but not as large as looked for earlier in the season.

Manzanola.—On account of the hard freeze last fall all fruit trees are badly damaged. No apples in the Arkansas valley to speak of but Ben Davis, and they are scarce and of poor quality.

Palisade.—Apples will probably be small on account of late blooming and cool summer. Jonathan harvest will begin the last of September. Early peaches have all run small and the probabilities are that Elberta will be smaller than usual. Apple crop greatly exaggerated, and will run 1,000 cars less for the valley than first reported.

Idaho.

Lewiston.—Indications are for a good crop of fine fruit. The condition is good and harvest will begin about Oct. 1st.

Nampa.—Apple harvest will begin September 25th. Apples are in fair to good condition; quality better than two years ago or last season, due to better work on part of growers.

Payette.—So far neither buyers or growers seem disposed to fix any prices. The general impression is that prices will be low at the commencement of the season, but will improve later when the uncertainty as to the size of the crop disappears and the political situation becomes clearer. We expect 90 per cent of a full crop in the Payette Valley. Storage space all reserved, chiefly by growers.

Weiser.—It is estimated that shipments of apples and prunes from here will aggregate between 300 and 350 cars this season. Apples shipped will be chiefly Jonathan, Winesap and Rome Beauty. Shipments of melons from Weiser will break all previous records this year. Increased acreage and heavier production are responsible. Melons of fine quality from local gardens have been on the market for a number of days and shipments are already under way. The Weiser Valley potato crop will also be multiplied many times over previous seasons this year.

Illinois.

Alton.—Apples have not over 25 per cent of a crop. The local market will take all and more than what is produced locally. Good apples now bring $1 per bushel readily, but there are few of really good quality offered.

Batchtown.—No prices established yet for fall fruit. Early varieties brought good prices and growers, from present indications are anticipating a strong demand for fancy cold storage stock. Harvest will begin about September 1st. Condition of apples good.

Carmi. — Apple harvest begins here about October 15th. Some are fine and some medium. Prices will run from 15c to 75c.

Centralia.—The majority of orchards in this section have not been sprayed and there will be little No. 1 fruit in them at picking time. In sprayed orchards the fruit is most excellent. Harvest will begin with Grimes and Jonathan September 19th.

Flora.—Storage space here has all been reserved. Condition of apples is good. A price of $2 for Ben Davis is expected. There is a feeling among growers that prices will start and possibly continue low during the picking season, hence there is a disposition among some of them to store. Growers who do not spray will sell at correspondingly low prices.

Hardin.—We have about 85 per cent more apples this year than last. Quality good. Harvest starts September 1st.

Kinmundy.—Early Harvest and Malden Blush being harvested now. Local firm thinks about $1 per barrel delivered loose at warehouse for Ben Davis will be the starting price. No price yet on Jonathan, though they will soon be ready. Minkler's best and biggest crop for years.

Neoga.—There are no apples to amount to anything here outside of a few sprayed orchards. On unsprayed orchards the fruit has all gone to pieces with scab and other diseases. Prices talked of are $1.50 for Ben Davis and $2 to $2.50 for other varieties.

Plainville.—The harvest of winter and late apples will begin about October 1st. Crop in good condition. Very few Grimes, but a good crop of Jonathan, Gano, Ben Davis, Missouri Pippin, but Wealthy is shy. In some orchards the fruit was thinned, but in other orchards the limbs are breaking with the overload.

Quincy.—I am surprised at the extravagant reports I see in the papers. Trees that bore full last year cannot be loaded this year. I think one-half crop is high enough to put it. No prices yet.

Indiana.

Lawrence.—There will be no apples to ship from this locality. The crop is not over 10 per cent. The crop will be late and much of it is scabby, as it is not sprayed.

Iowa.

Harlan.—Growers are expecting $3 to $3.50 for winter apples; summer and fall apples scarce and sell at $1.

Beacon.—The August issue says Ben Davis trees were winter killed in Southern Iowa. I think it due more to the severe drought of last summer. Other kinds are injured the same way. Apples almost a failure here. Plum crop good.

Ames.—The harvest of Wealthy will begin last of August, and Jonathan, Grimes, etc., middle of September. Condition good where sprayed and wormy where not. Moist weather helping to develop the fruit. State estimate 30 per cent of a crop. Light for southwestern Iowa. The state will not produce enough for local demands.

Council Bluffs.—Early apples are selling on local markets for 75c and $1.25. No offers yet on winter varieties. The drought was pretty severe, but the local rains now will help the size of late apples.

Glenwood.—Apple harvest will begin about Sept. 15th. The condition of the fruit is fair to good and growers are expecting $1.50 to $2 on early apples. No price on winter stock.

Hamburg.—Winter apple harvest begins about Sept. 15. Hail has done some damage. In sprayed orchards fruit free from scab and worms.

Randolph. — Unsprayed orchards are showing up very poorly, and dropping. Winesaps have a fair crop.

Argyle.—O. O. Newberry of this place has about 3,000 trees ten years old, principally Grimes Golden, Jonathan and Ben Davis, of excellent quality. The crop estimated at five bushels per tree, and are for sale.

Kansas.

Augusta.—The windfalls on the ground would make tons of vinegar, but no provision to care for or utilize them. The fruit on the trees is in fair condition and a price of 75c is expected.

Bethel. — The people here are not through with the early apple yet, and will not be until the last of August. No prices yet on winter stock.

Cedar Vale.—We are in the midst of the worst drought this section ever experienced. Fruit of all kinds is falling and the wormiest fruit ever.

Council Grove.—There will not be so many apples to pack at this place as previously reported on account of blotch, worms, etc., in unsprayed orchards. James Sharp will have about eight cars of smooth, well sprayed stock. Harvest will start about September 20th.

Edwardsville.—The apple crop in Kansas is over-estimated. The crop is light in the "apple districts," and for the entire state the yield will be disappointing. Apple harvest will start October 1st. Fruit is small, many injured by fungus and insects.

Ft. Scott.—Not enough apples here for local demand. The early ones coming to market are poorly developed, on account of the extremely dry weather. Only a few orchards here have any attention. A good many wormy ones.

Hiawatha.—At this place apples are in fair condition and harvest will begin about the middle of September. Growers expect $1.25 per barrel.

Leavenworth.—Apples are in very good condition and price up to $1.25 per barrel are expected. One orchard has been sold and inquiries are growing. There will be the best lot of apples in this county for many years.

Parsons.—Shippers are here trying to contract storage for apples. Market now $2 for eating apples.

Wichita.—Will begin picking Jonathan and Grimes September 5 to 10. Fruit in splendid condition. The apple crop in Kansas greatly over-estimated, and from what I can glean the same applies over all sections where proper spraying methods are not in vogue. This will be demonstrated on the sorting table.

Kentucky.

Bardwell.—Winter apple crop is better than last year, but few will be shipped from here.

Bayou. — Very few orchards sprayed here, and those not sprayed are not good.

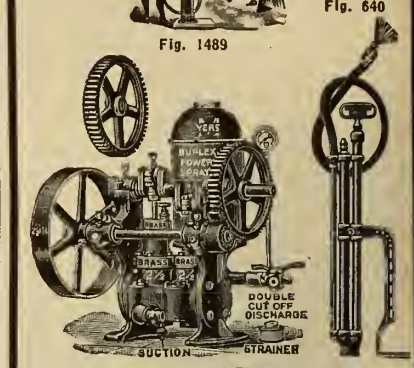
Maine.

Union.—The apple crop not more than half as many as last year in this sec-

MYERS SPRAY PUMPS ALL KINDS

Fig. 640

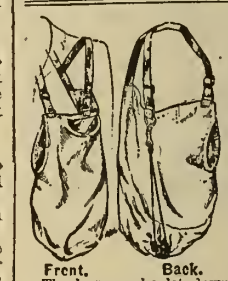
Fig. 1489



We manufacture SPRAY PUMPS for every need, from the small hand and bucket pumps to the large power outfits.

Send for catalog and prices of Pumps, Hay Tools and Barn Door Hangers

F. E. MYERS & BRO.
160 Orange St. Ashland, Ohio



Ideal Fruit PickingBag

Front. Back.

and so arranged as to equalize the load on both shoulders.

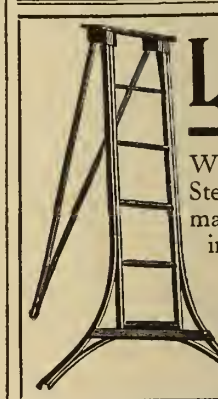
The openings are arranged so both hands can be used in picking and the draw string is arranged so the fruit can be let out at the bottom in emptying the bag.

The bag can be let down to the bottom of the barrel before opening the draw string, thus not bruising the fruit.

This is the best and handiest arrangement for picking fruit that has ever been offered. A trial will convince the most skeptical.

Sample Postpaid, $1. Agents Wanted

BARKER MFG. CO.
35 Ambrose Street. Rochester, N. Y



Ladders

We Make the Best Step Ladders on the market for Fruit Picking. Send for our illustrated catalog.

Morrill & Morley Mfg. Company
BENTON HARBOR, MICHIGAN

PRICE $1.50

Special prices in quantities If you are a cooper, write for cooper's tool catalog.

Nothing on Earth

is better for packing apples and other fruit than our

BARREL HEADER

It is instantly applied, and press can be quickly turned to any angle on head of barrel.

JOE TIMMER
THE TINNER—and That Ain't Near All —"Hardwear" Most.
KANSAS CITY, KS.
Western Hemisphere

KEES FRUIT PICKER

F.D. KEES MFG. CO. BEATRICE NEBRASKA.

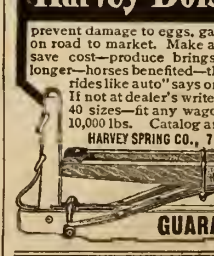
GATHERS APPLES, PEACHES, ETC as carefully as by hand with less work. Saves climbing ladder. No fruit out of reach. No wires to injure fruit or tangle in branches. Fruit drops into cloth bag, which can be filled before lowering. Price complete, except long handle (a fish pole will do), 75c, postage paid. Your money back if not O. K.

Circular sent on request. Address Box 425.

Harvey Bolster Springs

prevent damage to eggs, garden truck, fruits, live stock on road to market. Make any wagon a spring wagon. Soon save cost—produce brings bigger prices—wagon lasts longer—horses benefited—thousands in use—"my wagon rides like auto" says one. Get a pair at dealers. If not at dealer's write us. Insist on Harvey's. 40 sizes—fit any wagon—sustain any load to 10,000 lbs. Catalog and fistful of proofs free.

HARVEY SPRING CO., 736 17th St., Racine, Wis.



GUARANTEED

Apple Barrels for sale. Will contract ahead to be shipped in Sept. and Oct. John Moehn, Des Moines, Iowa.

FOR SALE—Natural peach seed from healthy orchards. E. W. Jones Nursery Co., Woodlawn, Va.

tion. No cold storage house in this vicinity. Many sell in the fall or store in their cellars.

Gardiner.—Apples have improved immensely, however the crop will not equal last year. Many trees died last winter, and others weakened so as not to bear any fruit.

Maryland.

Beaver Creek.—Apple trees are affected with cedar rust and some are looking very bad. Spraying has been done. Selling on Hagerstown market for 60c.

Massachusetts.

Ipswich.—Very moderate apple crop, with few summer and fall apples. Many orchards have few or no apples, though there will be from 60 to 70 per cent of a crop, all told. The condition of the apples is good where sprayed.

Amherst.—Summer apples are selling well and our growers are confident of good prices on winter stuff.

Harvard.—The apple harvest has begun and growers are dumping all sorts and kinds of summer varieties on the market, in any old kind of a package. Some good fruit, but much of it poor. Prices from 50c per box to $2 a barrel. The commission men talk of big crops of winter apples and conditions in this section bear them out. They think that prices will range low and the fruit in general will be better than last year. We have no local cold storage houses.

Rowley.—Winter apple harvest will begin Oct. 1st. Early varieties, such as Astrachan and Gravenstein, are selling at 50c per bushel on the trees. No prices quoted for winter apples. No cold storage houses. When apples are held here they are held in house cellars. Pears are usually put in cold storage in Boston, thirty miles from here.

Michigan.

Allegan.—No prices offered yet on winter stock. Larger per cent of apples will run poor this year than for some years past in this vicinity. Apples are good, except for scab.

Clinton.—Apples are clean and fine. Scab just beginning to show up. Less worms than usual. Trees overloaded and if not thinned will run small. Harvest begins about Oct. 1st.

Copenish.—Buyers are not taking hold very fast. They seem to be backward, and it looks as though there are plenty somewhere. Early apples on market now. Fruit small.

Douglas.—Apples are very good, though small for the season. No prices made yet. Buyers will not come down to prices and make contract. All holding back, and predict lower prices than last year, just to scare the grower. Have started a new fruit growers' exchange in this section.

East Jordan.—Season is somewhat late, but apples are coloring well. There have been few prices quoted yet. Winter varieties promise good size and color and about 40 per cent of a crop. There are no local storage plants and stock will be shipped by local buyers to the trading centers either for sale at once or storage.

Fennville.—Not as many apples in Michigan as buyers report. Prices of $1.75 to $2 are expected.

Marion.—Harvest begins about September 15th. Apples are in fair condition. Market not established yet, but this section never produces more than needed for the local demands.

Northville.—Early apples being harvested now, late paples in October. Their condition is fine, never better. Buyers are slow making prices as there is such an immense crop. We are in the center of one of the finest apple belts in the world, comprising a corner of four counties, Wayne, Oakland, Washenaw and Livingston. The leading variety is Steel's Red, closely followed by Northern Spy.

South Haven.—In some counties in this state, there is a big crop, in others very poor. In general the crop is about a ten-year average. Condition of apples good where sprayed.

Missouri.

Cedar Gap.—There is an impression among buyers that the United States apple crop is excessive and that prices should be low. I think for selfish ends the crop is being over-estimated. Apples here are in good condition, but no prices yet.

Columbia.—No prices set here yet. Sprayed fruit never better. Unsprayed fruit cleaner than usual and all of fine size and good development.

Eldorado Springs.—At this point there is a big apple crop. Jacob Faith, one of the most prominent growers, reports the fruit as cleaner of worms than usual and that the growers of that district are desirous of getting in touch with fruit buyers.

Knob Noster.—There is a fine apple crop in this county, and I wish you could send us a buyer.

Lebanon.—Apple picking will begin about October 1st. Sprayed fruit is fine, unsprayed no good. Prospective buyers are just looking around. No buying yet. Crop one-fourth of 1906. Ben Davis, Ingram, Willow Twig, Minkler are large and smooth, and will grade fancy where sprayed. The crop percentage is away over-estimated.

Madison.—There is a big crop of apples here, but no buyers yet. Some of the leading growers are J. F. Laytham, Geo. F. Cole and I. M. Dunkin. At Duncan's Bridge, Mo., are W. S. Overfelt, J. W. Overfelt, A. O. Lowery, J. G. Lilly, Isaac Wood and others. These growers are desirous of getting in touch with apple buyers.

Mt. Vernon.—Apples are generally good where sprayed, except some scab on Ben Davis. Too early to hear as to probable prices and no sales have been made yet. We have no local cold storage and indications are that growers will prefer to sell at picking time. Can't you send us a buyer or two?

Oregon.—Orchards are suffering from drouth. Ben Davis seems to be suffering worst.

Parkville.—Maiden Blush harvest began middle of August. Jonathan will be in September 10th. Our crops will go to Iowa buyer from Sioux City. Price on Maiden Blush, carlot, per barrel, $2.75 f. o. b.; Lowell, $2.50. Winter apple prices not yet agreed upon. Kansas City commission men offer $1.50 per barrel, but no takers.

Pilot Grove.—Apple harvest will begin last of September. Fruit that was sprayed is good, no worms. Not sprayed is wormy.

Poplar Bluff.—Good apples are scarce. Our county will not nearly supply itself with apples.

Rogersville.—Sprayed apples are good, unsprayed poor. No storage house in this vicinity. No prices as yet on late apples. While we had a fair to good setting of apples, in fact some trees too full, scab and blotch together with codling moth are rendering some unsprayed orchards fit only for the cider press. Very little spraying done. Some cedar rust, even in sprayed orchards.

Springfield.—Growers ask prices of 10 to 20 per cent less than last year. Buyers offer 30 to 40 per cent less. There will be no more marketable apples here than last year. Plenty of apples, but 50 per cent are scabbed and wormy and will go to the evaporator, cider mill and brandy factory. Good apples will be stored.

Waverly.—Our apple crop promises good where sprayed. The unsprayed is dropping badly and is very wormy. From present prospects 200 cars will be loaded at Waverly this fall, of No. 1 stock. Last year I packed in my orchard 4,500 barrels, and this year I may be a little short of last year, but not very much.

Nebraska.

Buyers offering $1 per barrel and growers asking $1.50. Two hundred thousand bushels of sprayed apples in Nemaha County this year, and present weather conditions would insure fine size and quality.

Table Rock.—We are still selling summer apples at $2.50 per barrel. Would contract at that price. Season has been dry and apples are below normal in size. Rains the middle of August may help size. The yield of apples at this place is by no means the largest ever grown.

Montana.

Hamilton.—The apple crop is an average, but blemished. Prices are 75c for early and $1 to $1.50 for later varieties. We have had more or less hailstorms over valley, which has blemished fruit. I should judge that we have 60 per cent of a full crop in the Bitter Root Valley.

Missoula.—A very wet season favorable to growth, but hard to control fungous diseases. More spraying has been done than usual, but scab shows more than before, even when no spraying was done at all. Bordeaux mixture has done the best work, but has russeted fruit badly. Lime-sulphur will probably be the best spray for this reason in the future.

Stephensville.—The crop of apples in the Bitter Root Valley is light in most localities. Hail visited many orchards and damaged the fruit. Cherry crop was extra, plums fair, pears good.

New Hampshire.

Apple harvest will begin October 1st. Fruit in very fair condition, but not a large crop this season.

Rochester.—No prices offered here, and no one ready to talk price.

New Mexico.

Artesia.—Prices expected are $1 to $2 per box for common varieties and $2 to $3 for extras. Systematic spraying accounts for better grade than ever, and thinned fruit on a large number of young orchards is interesting buyers. Tonnage is about the same as last year, but the grade is better.

Mesilla.—Jonathan harvest will begin August 25, winter varieties October 15th. Small size Jonathan quoted at $1.25 to $3.

New York.

Adams Basin.—Apples are in good condition where taken care of. Growers ask $2, but buyers have made no prices yet. We have about the same crop as last year, or about 50 per cent of a full crop. No fall fruit or Greenings to speak of. Baldwins are the principal crop.

Interlaken.—On a trip to western New York this week found much damage to apple crop by aphis. A large per cent affected, and will not be fit to barrel. Apples here are quite fair, not much fungus.

Geneseo.—Apples in excellent condition. Harvest begins September 20.

Medina.—Will begin picking Greenings September 15. Many apples lousy. Buyers are offering $1.50; growers asking $2 to $3. This state has more apples than a year ago, but quality is not so good, but think the keeping quality will be better. This is a Baldwin year. Think growers should build their own storages. I am just finishing a 15,000-barrel chemical storage, Cooper gravity brine system.

Ohio.

We are having plenty of rain now, and apples are growing fine and promise to be of good size. The crop, however, will not be more than 25 per cent of last year.

Gypsum.—Dealers all talk of a full crop in this section. Baldwins and Greenings are light, but many varieties are full. Have been well sprayed and looking well.

Middleport.—Buyers are offering $1 to $1.75; growers asking $1.85 to $2.50 per barrel. No large buyers in yet, but some local men talking prices. We expect to have 2,500 barrels of our own raising, but are going to store the crop. There will be 300 cars shipped from this and Gallia County.

New Albany.—Apples are filling out well, with plenty of rain. No apples at all, except orchards that were sprayed. More scab than usual.

Wooster.—Winter apples are quite scabby unless well sprayed. Harvest will begin September 15th. Early apples sold at low prices, but market is better now. No offers or quotations on winter apples.

Oklahoma.

Norman.—The heavy windstorm of August 2 blew off about one-third of the crop. The balance will be better. We should have cold storage, as fruit ripens early here.

Oregon.

Milton.—The apple crop is good and free from worms and diseases. Expect about 300 cars. Season now a week later than last year. No prices talked of yet, but expect them to be lower than last year.

Pennsylvania.

Light Street.—There are many knotty and wormy apples here. No prices yet, as we seldom hear of prices until the fruit is harvested.

Waynesburg.—Crops are fine on the highlands, but almost a failure in the valleys. Taken as a whole, there will be a good half crop.

Tennessee.

Jackson.—But few apples grown here, and they are taken by the local trade. The crop is good.

New Tazewell.—This section has the best apple crop that we have had for years. We are desirous of getting in touch with buyers.

Utah.

Ogden.—Buyers are offering 50c. Jonathans nearly ruined by twig blight. Other varieties not affected so badly. I would estimate the yield at 10 per cent less than last year.

Vermont.

Bellows Falls.—Early apples being gathered now. We have had a lot of cold weather and apples are small and dropping more than in any former season. Almost no Baldwins in this section. The price for good winter apples should be high.

Virginia.

Callaway.—Our apples are looking fine. No prices yet.

Tyro.—The weather is dry and apples not doing well. I have secured storage in Richmond for self and neighbors. The apple crop has deteriorated much. Bitter rot has started on many Pippin orchards that have been well sprayed; also a good deal of scab on Winesap, unless thoroughly sprayed.

Waynesboro.—Buyers are paying $2 per barrel and they furnish the cooperage. Growers are selling around this price. Some are going to hold for more money. Growers want $2.50 to $3 for No. 1 stock.

Washington.

Cashmere.—Local produce buyers are soliciting orders for Jonathans at $1 per box and King David at 90c. These are for shipment to Alaska and have to be ready to load early in September at Seattle as the last shipment to interior points of Alaska go at that time. The apple growers in the lower elevations can take advantage of such markets and thin out their Jonathans, King Davids and such early varieties. At higher elevations the fruit is not far enough advanced at this time.

The Wenatchee Valley Fruit Growers Assn. has contracted cold storage space in a number of cities in the East and are in a position to finance the grower so he will not have to sell to the first buyer that comes. Distribution will be made from these storage houses direct to the nearest dealers. Prices have not been given out and will not for some time. Independent buyers are waiting to learn these prices before making their rate. We do not expect boom prices, but good returns by dealing through our association.

Naches.—Jonathan harvest began last of August. Not much talk of prices yet. I think Jonathan and King David will bring $1 or better. Have heard no quotations on other varieties yet.

Snohomish.—There is not enough of any one variety raised in the Puget Sound region to make it worth while for buyers to come. This is mostly a dairy locality.

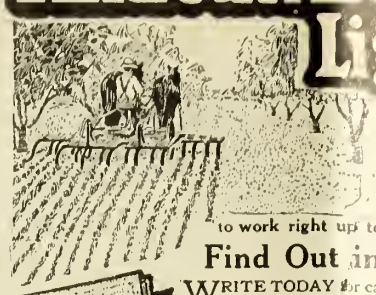
Spokane.—The apple crop is better than for years. No worms and very little scab. A small portion of the county hurt by early hail, which will run seconds, otherwise grade estimated about 3 to 1 as against last year.

West Virginia.

Gerardstown.—We look upon the crop reports of The Fruit-Grower as about the most reliable we can get. One of the big fruit journals published in the East reports our county (Berkeley) at 400,000 barrels of apples. The truth is, we will not have over 150,000 barrels in the county. The quality of our Ben Davis, Grimes Golden, Stayman and Northwestern Greening could not be finer. But on account of cedar rust the York Imperial, not only in Berkeley County, but all the way from the Potomac river on the north to Staunton, Va., on the south, is almost a complete wreck and failure.

Lucile—Summer and fall crop moving at 70c to 80c per hundred pounds. No prices quoted on winter stuff yet.

Find Out About the Forkner Light-Draft Harrow!



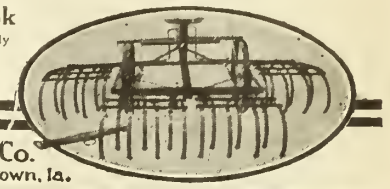
THIS low-priced harrow for orchards and vineyards —and general use—is a world-beater. Wonderfully light of draft—weight carried on wheels, not on horses' necks. Great worker—20 to 30 acres a day with one team—and every inch of soil cultivated thoroughly—lifted and turned in long wavy level. Best of all—it hangs low and has great extension—making it a snap to work right up to trees without horse or driver disturbing boughs or fruit.

Find Out in Your Orchard—At Our Risk!

WRITE TODAY for catalog and 30 day trial offer. Pick the machine suited to your soil and orchard and use it for a month—and send it back if you don't find it the finest cultivator made.

Send for This Free Book

"Modern Orchard Tillage"—written by highly successful orchardist—contains information that may be worth hundreds of dollars to you. Sent for the asking.



Light Draft Harrow Co.
907 E. Nevada St. Marshalltown, Ia.

CLARK'S CUTAWAY TOOLS

Orchard *and* Farm Harrows, Cider Mills, Etc.

HIS DOUBLE ACTION CUTAWAY HARROW

Also Spray Pumps and Outfits, Rhodes Pruning Tools, Pointed and Step Orchard Ladders, Veneer Tree Protectors, Wilson Picking Bags, Kep's Fruit Pickers and other good things for the fruit grower. Nurserymen's Tools, Thomas Baler and Box Clamp, Common Sense Tree Digger, Etc. Raney Home Canner, the best ever. Fodder Balers, Barrel Headers.

ELASTIC PRUNING PAINT
For Damaged Fruit and Shade Trees. Save those already damaged by rabbits, borers, pruning or other causes.

IMPROVED RANEY CANNERS
Make Home Canning Practical and Profitable to every housekeeper, farmer, fruit and truck grower. Write for catalogue.

Fruit Evaporators and Supplies
A SPECIALTY. SEND LIST OF WANTS.

E. G. MENDENHALL, General Distributing Agent "Clark's Tools"
ALSO FRUIT GROWERS' SUPPLY DEPOT BOX 300, KINMUNDY, ILLINOIS

Don't Delay Buying A Farmers' Favorite Cider Mill and Press

Cider making time is right at hand. Don't depend on your neighbor's press. Have one of your own. A FARMER'S FAVORITE Cider Mill and Press Combined—one that grinds your apples into a fine pomace and gets all the cider. The Farmers' Favorite is made in sizes to suit every farmer. If you want only a small one, we have that; if you want a large one, we also have that. Tell us about how many barrels you want to grind and press per hour, and we will tell you all about the Farmers' Favorite that best suits your needs. Write at once.

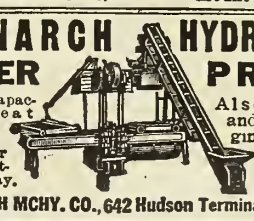
Cut away Harrow Co., Box 968 Higganum, Conn.

CIDER PRESSES

THE ORIGINAL MT. GILEAD HYDRAULIC PRESS produces more cider from less apples than any other and is a BIG MONEY MAKER. Sizes 10 to 400 barrels daily, hand or power. Presses for all purposes, also cider evaporators, apple-butter cookers, vinegar generators, etc. Catalog free. We are manufacturers, not jobbers.

HYDRAULIC PRESS MFG. CO.,
(Oldest and largest manufacturers of cider presses in the world.)
51 Lincoln Avenue, Mount Gilead, Ohio

MONARCH CIDER HYDRAULIC PRESS



Proved capacity, great strength, all sizes. Write for FREE catalog today.

Also Gasoline and Steam Engines, Threshers, Saw Mills. Get our prices.

MONARCH MCHY. CO., 642 Hudson Terminal, New York

FRIENDS THAT ARE FRIENDS
SPRAYERS
The FRUIT GROWERS' BEST
IT MATTERS NOT WHETHER YOU HAVE 1 OR 1000 ACRES THERE'S A "FRIEND" FOR YOU
POWER SPRAYERS—HAND SPRAYERS—NOZZLES HOSE—FITTINGS
SEE THE PRETTY "FRIEND" CAT BEFORE YOU BUY
"FRIEND" MFG. CO.—GASPORT, NIAGARA CO., NEW YORK
THE OLDEST AND LARGEST FACTORY DEVOTED EXCLUSIVELY TO MFG. OF SPRAYING OUTFITS

CORN HARVESTER with Binder Attachment cuts and throws in piles on harvester or winrow. Man and horse cuts and shocks equal with a corn Binder. Sold in every state. Price $20.00. W. H. BUXTON of Johnstown, Ohio, writes: "The Harvester has proven all you claim for it; the Harvester saved me over $25.00 in labor last year's corn cutting. I cut over 500 shocks; will make 4 bushels corn to a shock." Testimonials and catalog free, showing pictures of Harvester. Address

New Process Mfg. Co. Salina, Kansas

BLACK LOCUST, CATALPA
Speciosa, Box Elder, Sycamore, Ash, Elm, Red Bud, Sweet Gum, Mulberry, Walnuts, Maples, Poplars, California Privet, Deutzia, Spirea, Trees, Shrubs, Seeds, etc., at lowest prices.
Send for wholesale list.
FOREST NURSERY COMPANY
McMinnville Tennessee

We Want Apples
PEACHES AND GRAPES. State what you have now or will have to offer
BRUSH & SON, PIPESTONE, MINN.

GRAPE BELT CROPS FAIR

While Crops Are Not As Large as Last Year Prices Received Will Make Up the Difference

August 5th, 1912, just four weeks before the movement of grapes from the Chautauqua grape belt may be expected to begin in a small way, forms a satisfactory time to pause for a moment, and set down what the outlook is for the size of the crop, and the condition of the market.

Last year this belt produced a grape crop which approached very closely to the 8,000-carload mark, which has been considered high-water mark for the belt, and which has never been reached since a satisfactory annual compilation of the statistics of the crop has been begun. This year, the concensus of opinion, based on reports from every township in the belt, verified by growers, wine buyers, and representatives of the city commission firms who have been here, places the size of the crop at least 40 per cent below that of last year, or not far from five thousand carloads. Less than that number, if there is a variation in either direction. Five thousand carloads of grapes means not far from 60,000 tons or 15,000,000 eight-pound baskets.

In addition to this falling off in size of the crop, the belt has been and still is experiencing unseasonably cold weather, with cold rains, such as will delay the ripening, and may delay the beginning of the harvest quite materially. While it is still possible that a few carloads of early grapes will be shipped the first week in September, it is still more likely that the big bulk of the Concord crop will not begin to move from Western New York before September 30.

The falling off in productivity this season is due to three distinct causes. First and most important is that the big crop of 1911 drew so heavily on the vitality of the vines that the usual quota of fruit buds were not formed and matured last season. This is the common cause of alternating light and heavy yields of most fruits. It is a situation which requires the best attention of every fruit grower to prevent, and correct. The second cause was one perhaps unavoidable, and not fully understood, namely, winter killing. Why some winters cause severe vine injury, and others, with lower temperatures cause little, is still to be scientifically explained. The third cause of the short crop is found in the severe attack the present season of the two still serious insect pests, the grape root worm, and the grape leaf hopper, combined with a wet spring, which prevented sufficient vineyard tillage, and while delaying the start of the foliage, and causing poor pollination, was favorable to the development of these insects.

Not only is the local grape crop small, as stated, but the peach crop is also much below normal. This crop, too, was injured by winter killing, the most seriously of recent years, and the buds which survived the winter, suffered from poor pollination, because of the wet weather of blossoming time. The peach crop will be the smallest since the beginnings of the peach industry here on a commercial basis.

There has been a fair berry crop, prolonged by the wet, cold weather of July. The red raspberry crop has proven profitable, as the prices have been high, netting wholesale from 11c to 12½c per quart. The blackberry crop is just beginning to be picked, and is small. The cherry crop was very poor on early varieties, but was especially good on the later varieties, especially Morellos. All fruits have ruled at from 1 to 3 cents higher per quart this year than last, because of the scarcity.

The outlook for grape prices, which is the most important matter of all, is of the very best. General reports from all other grape-growing sections do not indicate that there is more than a normal crop, and not enough anywhere to make up any part of the shortage which will exist here. Last year the prices for bulk grapes kept well below $20 a ton, and for baskets did not get far from 10 cents per eight-pound basket. There is very small profit in growing or handling grapes at either of those figures. This year there is ample evidence today that it will take almost impossible change in conditions to keep the price less than 15 cents per basket, or less than from $36 to $40 for bulk grapes, the latter price for select stock, such as the grape juice makers must have.

The demand for grapes for the manufacture of unfermented grape juice is growing year by year, and has come to be an almost controlling factor in the price situation. Last year two concerns used, respectively, about 5,000 tons and 11,000 tons. These are the two largest concerns in the business. Both report to your correspondent that their cellars are practically sold out of last year's stock. One has built another cellar this year, doubling their capacity, and will be in the market for not far from 8,000 tons this year. The other, a larger company, which used last year 11,000 tons, will this year buy not far from 14,000 tons, if that many No. 1 grapes can be bought. These two concerns contract ahead for entire vineyards, agreeing to pay "market prices." This will take out of a total of not far from 60,000 tons, the very large quantity of 22,000 tons, or more than one-third entirely out of the price competition in the city markets, where the "market price" is established by the daily sales. It is the personal opinion of the writer, that if the bulk of the crop is evenly divided over the season, there need be no grapes sold at a price less than 15 cents net, f. o. b. grape belt.

At this price there will be a small demand for grapes for sour wine here in the belt. Sour wine makers say they cannot sell their product at a price which will afford them profits if they have to buy their grapes at above $30 a ton. They will, however, buy the waste, and the culls, at a better price, thus making a market for what in a big year must be thrown away as clear loss.

The work of the Vineyard Laboratory at Fredonia, has been continued this year, under an emergency appropriation made for its continuance by the board of managers of the state experiment station at Geneva, after Governor Dix vetoed the special bill for its support last spring. The work has been very valuable. Three particular lines of work have borne results this year worth mentioning.

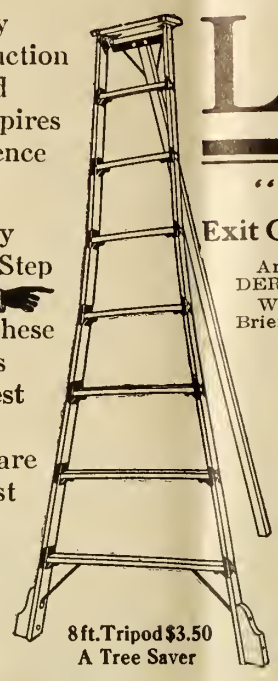
First of all, the level system of intensive cultivation in use on the station vineyards resulted in one of the finest foliage growths and best settings of fruit to be found in the entire grape belt. The crop of grapes at the station vineyards will be equal to that of last year, or very close to it, and this is due, very largely, to the level and intensive cultivation. The first plowing of the spring, to turn under the cover crops growing in the vineyard rows, was up to the grape vines. This left a dead furrow in the middle of the row. The use of a narrow disk, followed by spring-tooth harrow, cultivator, wheel hoe and smoothing harrow, leveled this down even. Frequent cultivation during a dry spell in June which followed the early wet, cold weather, kept a dust mulch on the top of the vineyards, and the unusual growth of the vines is so apparent as to be noticeable from the highway passing the laboratory farm.

The use of lime and legume cover crops on experimental plats where last year no results in fruit production could be noted by careful weighing have this year made notable results in larger growth of foliage and heavier setting of fruit. The growth

SECURITY Ladders

Security Construction Is Rigid and Inspires Confidence

Security Patent Step Joint Makes these Ladders Strongest Where Others are Weakest



Gold Medal Award Seattle World's Fair

8 ft. Tripod $3.50 A Tree Saver

"Not a Nail in Them"

Exit GRIEF—Enter SATISFACTION

Are you paying a workman to use a LADDER that WASTES his TIME?

Why not equip with Security Ladders? Briefly: They are long lived and in EVERY WAY satisfactory during the WHOLE of their life.

LIGHTNESS is combined with extreme STRENGTH and RIGIDITY in this make. Flat steps, comfortable to stand on. Security Step Joints are permanently rigid.

What can you say of other makes? All patterns embody the famous SECURITY PATENT STEEL BRACKETS, head construction and other valuable features that have won renown.

We make SECURITY LADDERS in numerous styles and lengths.

Freight allowance on 5 ladders.

SECURITY LADDER CO., Inc.
1342 E. 17th Street, LOS ANGELES, CALIF.

The "RAPID" Picking Sack

REASONS WHY APPLE GROWERS SHOULD USE THIS SACK

It is easy on the picker, as it can be buckled on two different ways, allowing relief from one continuous position.

With this sack held tight on picker he has both hands to pick fruit, instead of but one, while holding pail or basket with the other, and picks twice as much as by old method.

Does not bruise the fruit, as the heavy wire frame top part of sack holds it open. The bottom opens so fruit slides into box easily without being bruised.

Materials are of best grade throughout; best seamless sack; electric welded wire frame; re-tinned after made, so will not rust; extra heavy webbing which lies flat and does not curl up and cut the shoulders; riveted parts reinforced with leather, so will not pull out; triple thickness sack in front to take wear. In fact, the best we can make them for our own use.

This sack is the result of several years of use and improvement. This sack saves a dollar a day in speed and better quality of fruit. They will last for years, being practically indestructible.

$2.00 EACH. Cash with Order. Discount to Trade.

Manufactured and for sale by

UNDERWOOD & VILES

HUTCHINSON, KANSAS. Manufacturers Underwood Orchard Heaters. Apple Growers. Send postal for references from growers using this sack last year.

APPLES

We want to hear from you as to what you will have in EARLY AND LATE APPLES.

Write and tell us what you will have in PEACHES, PEARS, PLUMS, Etc. Ask for Booklet "G."

MYERS, WEIL & COMPANY, 750 Broadway, CLEVELAND, OHIO

GALVANIZED Steel Roofing

Fire, Water & Lightning Proof

Never Before and Never Again A Roofing Offer Like This!

$1.25 Per 100 Sq. Ft. Buys Best STEEL ROOFING

We have only a limited amount of this Corrugated Iron Roofing at this price. It is brand new, perfect, first-class in every respect, but **light weight.** We bought it at a forced sale and must sell it quick. Sheets 22x24x1¼ inch corrugation. **Our wrecking price is only $1.25 per square,** delivered F. O. B. Cars Chicago. On this item specify Lot No. **A. D. 700.** We cannot pay freight at this unheard of price. This is not galvanized, but black Steel Roofing. Write for our special

Freight Prepaid Prices on Galvanized Roofing. The lowest prices ever offered in the history of Roofing Materials. We must move our surplus stock on all of our roofing materials. We have absolutely "smashed" prices on every kind of roofing material. This is your opportunity to buy what you need at a tremendous saving. We intend to maintain our leadership as the largest "direct to consumer" Roofing Material Concern on earth and we defy any competitor to meet our prices.

We Will Save You Money on any and every kind of roofing, siding or ceiling. If you are thinking of re-roofing your house, barn, granaries, poultry houses, etc., write us and we will give you the benefit of our years of experience and our best advice as to the kind and quality you should buy. We have full stocks of Plain Flat, Corrugated, Standing Seam and "V" Crimped sheets, suitable for all covering purposes—Roofing, Siding, Ceiling, Lining, etc. **Metal Roofings are best** and cheapest in the long run, easiest to lay, longest life, non-absorbent: fire, water and lightning proof; cooler in Summer, warmer in Winter; do not taint rain water; with ordinary care will last a lifetime. The unequalled buying power, made possible by our perfect buying organization and **our $2,000,000 Capital Stock**—makes it possible for us to pick up these "snaps" and pass them along to you.

GREAT ROOFING BOOK FREE

Chicago House Wrecking Company
Dept. K. 22 Chicago

Send me, free, your Roofing Catalog.

Name .....

Address .....

Write Today for Free Samples

Tell us kind of building and size, also ask for our **special low freight paid prices** and clear, easily understood roofing proposition, including our **BIND NG GUARANTEE** which, for twenty years, has protected every purchaser. Your money back if any goods fail to meet our representation. Don't fail to send coupon for Great Free Roofing Book.

Chicago House Wrecking Co.
Dept. K. 22 Chicago

of clover on limed rows is so much larger than on unlimed rows, that it is apparent to a casual passerby. The plats where cover crops have been used are so much better than those where none have been grown as to leave little room for doubt that the increase in fruit yield will show up on the scales this fall, and that by increasing the fertility of the soil and the vigor of the vine in this way, the alternating of big and little yields of fruit may be replaced by constant large yields every year.

The third work done by the station which is of importance is the continuance of their crusade against the grape root worm and the grape leaf hopper. The grape root worm is particularly active this year. The use of the sweetened poison spray is proving effective in many vineyards, but it has defects which the vineyard entomologist, Frederick Hartzell, is seeking to overcome. It is not sufficiently adhesive to remain on a vine after a rainfall. The arsenate of lead which is used with the molasses loses its adhesive qualities in this solution. Its use is recommended and has been demonstrated on dozens of vineyards, while a better poison which will reach this troublesome bug is being sought. The leaf hopper is under control wherever the nicotine solution is used, but very many vineyardists refuse yet to believe that their crop is in danger and so neglect to spray. The attack of the leaf hopper is particularly violent this year, and a heavy damage will be done. Some vineyards already show by the turning brown of the foliage, the results of this insect, which sucks the life juice of the leaf from the under side. Vines whose foliage loses its color and life at this stage of the game will not properly mature their fruit, and it has been chemically tested out in the government laboratories that a grape ripened on a vine seriously injured by leaf hopper is useless for either grape juice or wine purposes. If offered on the markets these grapes will only depress the prices of all grapes offered. And so the efforts of the Vineyard Laboratory staff to induce growers to spray, and their demonstrations carried on co-operatively throughout the belt, have been of great importance.

The package situation is very satisfactory. Growers are loading up early with baskets and crates. The price for eight-pound baskets remains at $19 per 1,000, to contract growers supplied by the co-operative company, and is from $19 to $20 from independent makers. The twenty-pound baskets are at $40 per thousand at all points. This is the same price as last year. With a 40 per cent shrinkage in crop below that of last year, and an increase in the amount going into the local grape juice factories, for which they supply the crates, there should be no shortage of containers this year.

New York. A. M. LOOMIS.

White Hen Makes Wonderful Record.

The National Egg Laying Contest that is being conducted by the Missouri Poultry Board at Mountain Grove, Mo, has been producing some interesting results this summer. This contest is open to the nation, and there are hens entered from almost every state. The contest was started Nov. 1, 1911, and will last for one year. In his report for July, T. E. Quisenberry, manager of the contest, says:

"The Leghorns and smaller breeds do not seem to be affected by the hot weather, and are making better records and gaining ground faster than the larger breeds and varieties. The hot weather, the moulting season, and 355 broody hens during the month of July cut the egg yield, and it doubtless will rapidly decrease from this time on. No pen has yet gotten so far in the lead but what the leading pens could be changed in a single month. The indications are that the pen which can continue to lay a reasonable number of eggs through the hot weather is going to be the pen which will win. Neither is the best individual record yet settled. While a White Plymouth Rock hen has laid 208 eggs, a White Orpington is only 9 eggs behind.

A total of 71,280 eggs has been laid by 655 hens in the nine months. The record for July was 8,873 eggs. Only seven pens were able to lay 100 eggs or more during the month. The best individual record is that made by Lady Showyou, a White Plymouth Rock hen. This hen has not missed a month since she entered the contest, her record for each month being as follows:

Nov.	17 eggs	April	29 eggs
Dec.	22 "	May	31 "
Jan.	5 "	June	29 "
Feb.	17 "	July	29 "
March	20 "	Total	208 eggs

"She has 92 days yet left in which to complete her year's record. The only month this hen has failed to lay a large number of eggs was in January. There was a snow on Jan. 5, which was nearly two feet deep, and the temperature went to about 24 below zero. Lady Showyou laid an egg the day following, and then quit business until Feb. 5, taking just a month's vacation. She then began a rather remarkable period of production in the days following this, laying 146 eggs in 151 days. She is the most industrious hen among the 655 in the contest.

She goes immediately from the roost about daylight every day to a trap nest. She lays an egg and is released from the nest about 8 o'clock. She spends the remainder of the day eating a large amount of food.

"The rank of the different varieties and the best pen record by each of the leading varieties is as follows:

R. C. Reds	808 eggs
S. C. White Leghorns	778 "
White Wyandottes	765 "
Black Orpingtons	760 "
Barred Plymouth Rocks	759 "
Buff Orpingtons	719 "
Silver Wyandottes	720 "
R. C. Brown Leghorns	714 "
S. C. R. I. Reds	711 "
White Orpingtons	666 "
White Plymouth Rocks	662 "
Black Langshans	650 "
Anconas	629 "
S. C. Black Minorcas	624 "
R. C. White Leghorns	618 "

If the hens in these pens did not lay another egg during the year, the owners would have a right to feel proud of the record their hens made. One of the great, and usually overlooked, values of a contest of this kind is the encouragement it gives for the use of trap nests. "Like begets like" just as truly with chickens as with any other kind of farm animals, and the only way to be certain of the value of a hen is to know what her egg production is. The only practicable way to find this out is by the use of the trap nest.

Write for Grand FREE Millwork Catalog on That Coupon!
5,000 Bargains Offered at 50c on the Dollar!

Cut This Out!
GORDON-VAN TINE CO.
2904 Case St., Davenport, Iowa
Please send the FREE BOOKS checked below, to
Name.....
Address.....
Occupation.....
☐ Millwork ☐ Lumber
☐ Roofing ☐ Plan Book
If you wish the PLAN BOOK, enclose 10c for postage and mailing.

We Hand You All the Middlemen's Profits

We will sell you the finest quality of Millwork, Lumber and other Building Material at one-half what dealers ask. In our latest Catalogs we offer over 5,000 wonderful bargains. Our Mill-to-Consumer prices save you all middlemen's profits. Our immense plant is filled with a vast stock of the best building material in America. Our prices save the public more than a million dollars a year.

Millwork and Lumber for Houses, Barns and Outbuildings at Huge Reductions

We own our own mills, warehouses and lumber yards. We pay no tribute to the lumber barons or the sash and door combine. Hence we are able to sell our output at huge reductions in price.

You can save several hundred dollars on the cost of a new house or barn by buying direct from our Grand Free Catalog instead of through retail dealers. In the past five years we have sold Millwork and Lumber for more than one hundred thousand houses.

8-Room House

$857 buys all the Lumber and Millwork for this 8-room house. Plan No. 121.

Bungalow

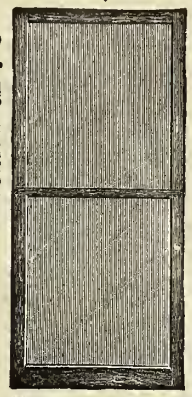
$938 buys all the Lumber and Millwork for this beautiful bungalow. Plan No. 106.

8-Room House

$790 Buys all the Lumber and Millwork for this handsome 8-room house. Plan No. 145.

Colonial Built-Up Column, $1.50

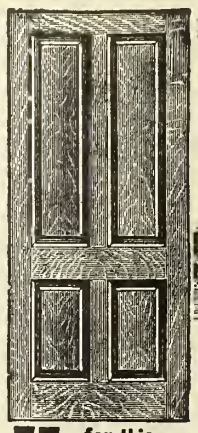
Windows
At 50c on the Dollar
We offer a thousand sizes and styles of Windows from 50 to 75 per cent below retail dealers' prices. Plain Rail and Check Rail Windows, Art Windows in exclusive designs, Leaded Glass Windows to match any style of architecture. We guarantee safe delivery, quality and satisfaction.



55c for 2-Light Check Rail Window

Stair and Porch Millwork
At 50c on the Dollar
On material for building Stairs and Porches we save you about 50 per cent of the retail dealers' prices.
We carry Stair and Porch Work in a great variety of styles. We can save you from $60 to $125 on a flight of stairs and from $15 to $30 on a porch.

Vast Stock of Doors
At 50c on the Dollar
We carry a greater variety of styles in Doors than any other concern. Our prices are the lowest. Plain Doors, Fancy Doors, Art Glass Doors—all of highest quality in materials and workmanship.



77c for this Strong Door

Millions of Feet of Mouldings
At 50c on the Dollar
Immense stock of finest Mouldings; Corner, Head and Base Blocks, Inside Finish, Flooring, Ceiling, etc., etc., at rock-bottom prices. All bright, new, clean stock—quality guaranteed.

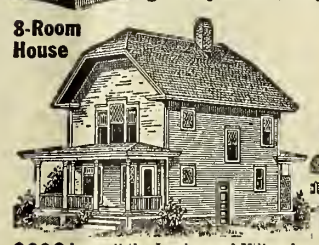
$5000 Plan Book Free
Over 50 designs for Houses, Cottages, Bungalows, etc., costing from $600 to $6,000. Most practical Plan Book ever issued. Every house shown has actually been built at the figures stated. This beautiful book is free. Send a dime for postage and mailing.

Send Coupon at Top of This Page
or Write a Letter or Postal Card
Do it now and by return mail you will receive our Grand Free Catalogs with 5,000 record-breaking bargains. Build, remodel or repair at a saving of 50 per cent. Sign and mail the Coupon.

LUMBER Prices Lowered!
You can save $100 to $300 on every carload of Lumber bought from us. We sell more lumber in a day than most dealers sell in six months.
Grades Guaranteed. Write for FREE LUMBER PRICE LIST; send your lumber bill for Free Estimate.

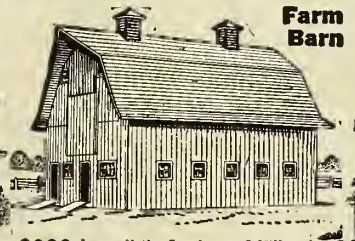
ROOFING
At 50c on the $1
Genuine Flint-Coated, Waterproof and Fire-Resisting Roofing. Every roll guaranteed 5, 8 or 10 years, according to weight. Roofing Catalog Free.
A Special Roofing at a Special Price. PRICE PER SQUARE OF 108 SQUARE FT.
75c Quality Guaranteed

8-Room House



$698 buys all the Lumber and Millwork for this 8-room house. Plan No. 100.

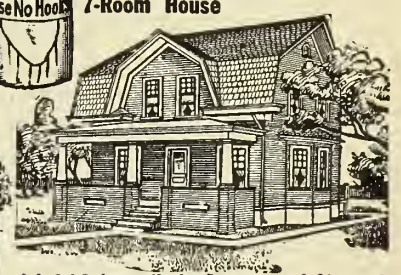
Farm Barn



$686 buys all the Lumber and Millwork for this barn. Plan No. 202.

$644 buys all Lumber and Millwork for this 6-room cottage. Plan No. 104.

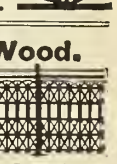
7-Room House



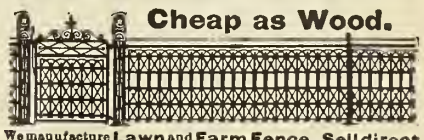
$1,013 buys all the Lumber and Millwork for this 7-room house. Plan No. 119.

GORDON-VAN TINE CO., 2904 Case St., Davenport, Iowa

MAKE HENS LAY
Lots of eggs if you feed green bone fresh cut. Its egg-producing value is four times that of grain. Eggs more fertile, chicks more vigorous, broilers earlier, fowls heavier, profits larger.
MANN'S LATEST MODEL Bone Cutter
makes bone cutting simple, easy and rapid. Cuts all bone with adhearing meat and gristle. Never clogs. 10 Days' Free Trial. No money in advance. Don't buy a cutter without trying it. Send for free Book.
F. W. MANN CO.
Box 108, Milford, Mass.



Cheap as Wood.



We manufacture Lawn and Farm Fence. Sell direct shipping to users only, at manufacturers' prices. No agents. Our catalog is Free. Write for it today.
UP-TO-DATE MFG. CO. 976 10th St., Terre Haute, Ind.

LOW PRICES for this handsome FENCE
100 other styles. Many cheaper than wood—all better. For Lawns, Churches, Parks, etc. Write for Pattern Book and special offer.
THE WARD FENCE CO., Box 660 DECATUR, IND.

PATENTS That Protect and Pay
Send Sketch or Model for FREE SEARCH
Books, Advice, Searches and Big List of Inventions Wanted FREE
Watson E. Coleman, Patent Lawyer, Washington, D. C.

OUR HOME FOLKS

Conducted by MRS. RUTH MOTHERBY. Address all Communications to Home Editor The Fruit-Grower

Home Making.

It seems to me there is need of instruction in the art of home making. A place to live in cannot be a real home to anyone who has no feeling of responsibility concerning it. Where the parents assume all the responsibility, and the children are treated as pensioners on their bounty, the real home atmosphere is always missing. It is difficult to keep children in such a home as that. No matter how comfortable it may be, they are forever seeking excuses to get away. Even when they are too small to reason about it, they will show that they find it much more satisfactory to play away from home, than to have their little friends at their own home. When you find that condition you may be very sure there is something lacking in the home atmosphere. And this condition is frequently found in homes where the parents are, to use the very words of one such couple, slaving themselves to death for their children.

These good patient, plodding, well-meaning parents need instruction in the art of home making. They need to be taught that a true home is that in which every member of the family bears his full share of responsibility. They must be made to understand that instead of doing the children a kindness when they relieve them of all care, they are really robbing them of a birthright. I know one mother who has the correct idea about this. The other day I chanced to overhear her talking to her little three-year-old daughter, as the child stood on a chair beside the sink wiping the spoons, forks and knives.

"I'm wondering, Dorothy," she said, "if I oughtn't to can some of those strawberries today? What do you think about it?" She spoke as seriously as if she were talking to a grownup daughter. Dorothy pondered most earnestly. It was evident that she was anxious to make a wise reply.

"When I say tan I go, and oo say I tan," she lisped, "does oo tan me then?" The dear baby hadn't the remotest idea what was meant by canning strawberries, but you may be very sure that the comradeship of that mother's appeal was not lost. She talks intimately to all her children from the first weeks of their babyhood, and she certainly has an ideal family. It is astonishing how much they help both parents, and how proud they are of their ability to do things well.

I once heard a girl asking her mother to buy a book she was anxious to read.

"We can't spend our money and have it, too," explained the mother when the girl cried because she was told she couldn't have the book. "If we were to buy everything you children asked for, we should have very little to leave you when we are gone."

"I'd rather have a few things now," retorted the child, "than be rich when I'm old. We never have anything nice. I'll be glad when I can get something to do, so I can earn money for myself."

It is natural for us all to want things that we are not able to have, and children are quite likely to make unreasonable demands upon their parents; but they are less likely to do so, and far less apt to become indignant when refused, if they understand the financial situation at home, and are given a voice in the decisions.

Why shouldn't children have a right to decide whether every effort shall be made to accumulate property for them to inherit, or whether they would prefer to waive all rights to an inheritance, and help spend the available funds while under the parental roof? I believe most children would choose to start in life with a well-fed mind and an empty pocketbook, if the opportunity to choose were allowed them, and that they would do better in the end to make that start knowing that they had nothing to expect from anyone. The successful men and women are not those who were trained to look forward to life without labor. A child whose early life was spent in an ideal home goes out into the world so well equipped to fight its battles that he is rich though penniless.

Children should be made familiar with the resources and expenditures of the home. Their opinion should be asked in every matter of importance, and considered carefully—not ridiculed, no matter how funny it may sound to mature minds. If some luxury is under consideration, they should help decide what other pleasure must be given up in order to obtain this greater good. And most important of all, they should be brought up to realize that the truly independent man depends upon himself, and that he who is expecting to be helped financially, is only half a man at best. Children who come from the ideal home will have none of the whining, self-confessed inability to succeed that we so often find in the offsprings of parents whose dominant idea has been to leave a fortune to their children, so they need not work.

RUTH MOTHERBY.

Fall Shopping.

Country women are often greatly troubled to know what to get to wear, when they go to town for the fall shopping. They have been too busy during the summer to read much, and even when they do turn to the fashion departments in their favorite periodicals, it seems to them that everything is written for those who have plenty of money to spend—and nothing for those who must make a little go a long way. Yet it is not difficult to look well dressed on a comparatively small sum—if one only knows how.

In many of the large department stores one may get a dress skirt made to one's measurement for two dollars, during the season when the shop's dressmakers are not busy—provided the material for the skirt is purchased at that shop. I've seen many of these skirts, and they are well made, and stylish in appearance. You could not hire a dressmaker who could do as well at that price.

If you are easily fitted you can buy a ready-made suit much more cheaply than you can get one made. But you should keep in touch with the different stores, through their advertising mediums, so as to take advantage of their mark-down sales. You can get the suit altered to suit you where you buy it, if you patronize the best places. I know a working girl who bought a fifty-dollar spring suit, in August, for twenty-five dollars, and it looked well on her for three years.

Another way to get a good suit is to buy a jacket that fits you and is well made; then have the store send to the manufacturing concern that furnished the jacket for enough of the same cloth to make a skirt. I once bought a black serge spring jacket for twenty dollars. It was very stylish and beautifully made, and it fitted me perfectly. The store sent for serge to match, and made a skirt which cost me fifteen dollars. I then had a suit, costing thirty-five dollars that looked better and wore better than the sixty-five dollar suits bought by my friends.

If you have a dressmaker who knows how to re-fit garments, you can feel quite safe when attending a mark-down sale—provided of course that it takes place in one of the first-class shops. Sometimes they refuse to fit

Clean Fruit Jars For Preserving Time

Fruit and preserve jars take on a new lustre—an air of inviting cleanliness, when cleaned with Old Dutch Cleanser. The fine porous particles go into every corner and rout out the small stuck-on particles—quickly and easily. It will also clean the hands of stains.

Many other uses and full directions on large sifter can—10c.

Old Dutch Cleanser

Rubber Roofing

Warranted For Twenty-Five Years.
FREIGHT PAID To Any Station East of Rocky Mountains, except Texas, Okla., Colo., N. D., S. D., Wyo., Mont., N. M., La., Ga., Ala., Miss. and Fla., on all orders of three rolls or more. Special Prices to these States on request.

ONE-PLY .... Weighs 35 lbs., 108 Square Feet, $1.10 per roll.
TWO-PLY ... Weighs 45 lbs., 108 Square Feet, $1.30 per roll.
THREE-PLY . Weighs 55 lbs., 108 Square Feet, $1.50 per roll.

TERMS CASH: We save you the wholesalers' and retailers' profit. These special prices only hold good for immediate shipment.

Indestructible by Heat, Cold, Sun or Rain.

Write for FREE SAMPLES or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to Southern Illinois National Bank.

Century Manufacturing Co., DEPT. 632 {East St. Louis, Illinois, or 200 5th Av., New York City.

Please make it a point to always mention The Fruit-Grower when you write in response to an advertisement.

The Colorado Midland

Affords the Best Service to

The Fruit Lands and Farming and Grazing Lands of the Western Slope

There are thousands of acres of good lands still uncultivated in the fertile valleys of eastern Utah and western Colorado, and oceans of water in the streams and on the mountain tops. Special rates made for landseekers to go and look at these lands and for settlers. Write us or come in and ask us for information about what has already been done in that section.

MIDLAND ROUTE

E. P. CARR, City Passenger Agent
E. D. WHITLEY, City Ticket Agent

Telephone Main 6280. Seventeenth and California Sts., Denver, Colo.
DINING CARS, PULLMANS AND CHAIR CARS ON ALL TRAINS

gowns that they sell very cheaply.

In these days it doesn't pay to buy silk with which to line your best gowns. By watching the sales you can get a good silk petticoat for about three dollars. Be sure to buy a large size, so as to have room enough to fit it—then get waist lining, and there you are with a good drop skirt already made. You see, I reckon the waist lining and petticoat together as one piece, for I always sew them together.

Don't buy a school hat for your daughter. Unless you can afford something very nice, it will soon look cheap, and just now home-made hats are very popular with girls. You can get a pattern for ten cents, and these hats are easily made. Get white pique, or duck, or shrunk muslin for summer. For winter, let the hat match the suit. You'll like such a hat yourself for all ordinary purposes much better than most of the trimmed hats offered at sales.

We are told that the narrow skirt will remain with us all winter. Perhaps; but I wouldn't advise you to make new cloth into a very narrow skirt at this time. You can find patterns with pleats let in to allow of some fullness, and you'll be glad, next spring that your skirt was not made to look like a large-sized pant leg. If you are making over an old gown, you can follow the present styles with a clear conscience, but do not spoil nice material by putting it into a sheath skirt.

Finally, do not be tempted by the window displays in any of the stores during Fair time. It is quite well known that much "back-number" stuff is brought out, at that time, and tagged with prices that seem sensationally low. Just go right past those "bargains," and tell the clerk you are looking for this season's goods.

MARIE SIAS.

Economical Meat Dishes.

In this day of high prices, the housewife who knows how to cook economically is really worth her weight in gold. My husband frequently pays me this compliment, and I weigh 182 pounds!

Since visiting my sister, who lives in the city, I realize as I haven't done before, how favored are we of the country who can go into the garden and find the best of material for the next meal!

"We cut out meat," I told my sister, "and live on vegetables. We feel well, and it is much more economical."

"For you, yes," she replied, "but if you were obliged to buy fresh vegetables, you wouldn't think so."

Sister economizes by using cheap cuts of meat and she is really a genius when it comes to making such meat palatable. Here is one of her recipes: First brown the meat over a hot fire, searing the surface so that the juices may be retained. Brown some scraps of fat, also, and fry a few slices of onion in the fat. Now add flour stirred smooth in a little water to make a thin gravy. The meat is then put in and left covered on the back of the stove, and later vegetables and seasoning are added, or they may be put in with the meat, seasoned, covered and boiled five minutes and put at once into the fireless cooker and left several hours or all day. Long, slow cooking is the only rule for good results. The fireless cooker is one of the greatest of friends to the housewife and more especially when preparing meat that must be cooked for a long time to make it palatable.

Even soup meat can be made into a desirable food, if one knows how. I cut it into small bits and cook it slowly in a small amount of water, until it is very tender. Then I make a gravy by adding flour to the water in which it was boiled, and I have material for a delicious meat pie. There are many ways to make these pies. I've found some excellent recipes in this department. I have not seen my favorite recipe, however, and so will venture to send it.

Butter a large pie dish, and line it with boiled macaroni. Put in a layer of the meat, cooked as above described, gravy and all, sprinkle grated cheese over the top, and spread on a cover of the boiled macaroni. Add bits of butter, and bake in a hot oven until brown.

If you have several kinds of cold meat on hand, you can use them, with the boiled macaroni, in this way: Line a small basin with the macaroni, then cut up the cold meat, veal, chicken, ham or tongue; make a layer of each kind in the dish putting a white or brown sauce over each layer, and season to taste. Pour a layer of rich white sauce on top, sprinkle over some grated Parmesan cheese and finish with strips of boiled macaroni. Pour a little melted butter on top, sprinkle on some grated cheese and bake in a hot oven over a half hour or until a nice brown.

If you don't like macaroni, use boiled rice, instead. Or, use sliced potatoes, or bread crumbs stirred into a mixture of egg and milk.

An excellent way to make use of bits of cold meat is to chop it fine, cook it in a little gravy or water, add cream, thicken, season with butter, salt and pepper, and pour it over slices of toast. Prepare boiled ham in the same way, adding the yolk of an egg.

Another way is to chop it fine, mix it with salad dressing, and use it for sandwiches. If any of the sandwiches are left over, dip them in beaten egg, and fry in hot butter like French toast. This is fine for breakfast or tea.

You can make fine beef rolls of the coarser cuts of beef, cooked as above described, or of bits of cold beef that have been left over. Mince the beef rather fine, and season to taste with salt, pepper, and minced herbs. Use a small amount of its own fat. Put it into a roll of puff paste and bake for half an hour or rather longer should the roll be very large.

Beef patties may be made of cold meat by mincing and seasoning beef as directed above and baking in a rich puff paste in patty tins.

I make very good Hamburg steak of coarse bits of meat which I put through my sausage grinder. I mix meats, adding a little sausage, also, and the flavor is much better than it would be if only the coarse meat were used. You will find this much cheaper than to buy Hamburg steak, and I believe it is really more wholesome. It is simply awful the way housewives are cheated when they buy Hamburg steak. I never take that which is ready prepared, for I can mix my own meats, and know what I'm getting. You can't know that, when you buy it, unless you watch the butcher while he grinds it. Here is a nice way to serve Hamburg steak, and it has this advantage—a little meat may be made to go a long way, which is sometimes most desirable when guests come unexpectedly: Moisten a cupful of powdered cracker crumbs with a little milk—enough to make a mixture of pudding-like consistency. Stir this through a pound of Hamburg steak and season the whole with pepper, salt and powdered sage. Two teaspoonfuls of the powdered sage will be about right. Some palates may like a little more and some less. After seasoning knead the mixture with the hands until all the ingredients have become properly amalgamated. Form it into a roll and slice

Cash or Credit

Reduced Prices on Kalamazoos

Freight Prepaid—Free Trial

Get the real facts of the Kalamazoo offer—the $5 to $40 saving—the $100,000 Bank Bond Guarantee—shipment made the day order arrives. Learn about the new glass oven door ranges—and other Kalamazoo improvements though prices are lower than before.

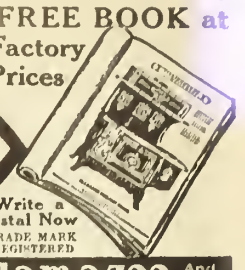
Write for Free Book with stove facts and stove secrets. Ask for Catalog No. 135 Mention this paper.

Kalamazoo Stove Company, Mfrs.

Kalamazoo, Michigan

Furnace or Gas Stove Catalog on request.

400 STOVES in This FREE BOOK at Factory Prices


Write a Postal Now

TRADE MARK REGISTERED

"A Kalamazoo Direct to You" And Gas Stoves Too

DON'T PAY TWO PRICES

Save $8.00 to $22.00 on

Hoosier Ranges and Heaters

Why not buy the Best when you can buy them at such low unheard-of Factory prices. Our new improvements absolutely surpass anything ever produced. Save enough on a single stove to buy your winter's fuel. Thirty days free trial in your own home before you buy. Send postal today for large free catalog and prices.

Address Hoosier Stove Co. 260 State St., Marion, Ind.

We Ship on Approval

Prepay Freight, and allow

30 Days Free Trial

IT ONLY COSTS ONE CENT to learn our unheard of prices and marvelous guarantee on "Brictson" Detachable Treads.

Let us show you how to save from 300% to 400% on your tire expenses. Write to-day for full particulars.

The Brictson Mfg. Co.

3892 Main St.

BROOKINGS, S. D.

PATENT YOUR IDEAS

$9,000 offered for certain inventions. Book "How to Obtain a Patent" and "What to Invent" sent free. Send rough sketch for free report as to patentability. Patents advertised for sale at our expense in Manufacturers' Journals.

Patent Obtained or Fee Returned

CHANDLEE & CHANDLEE, Patent Att'ys

Established 16 Years

1046 F. Street, Washington, D. C.

$15 for this genuine Victor-Victrola

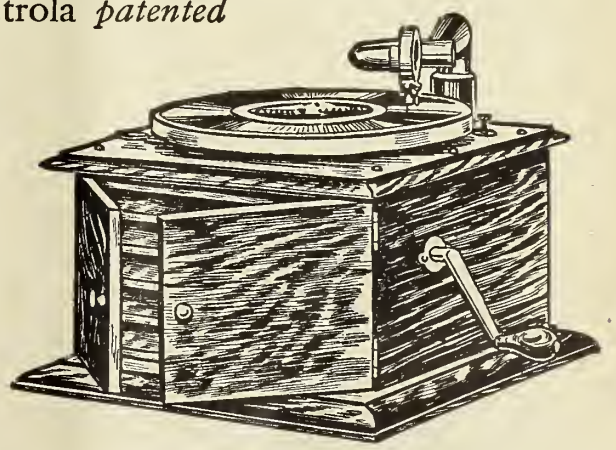
This instrument is a *genuine* Victor-Victrola, of the same high quality which characterizes all products of the Victor Company, and is equipped with all the *exclusive* Victrola *patented* features, including:

Concealed sounding boards and amplifying compartment of wood—provide the very limit of area of vibrating surface and sound amplifying compartment, so absolutely essential to an exact and pure tone reproduction.

Modifying doors—give the player full control over the volume of sound, which may be increased or diminished at will simply by opening or closing the doors.

Tapering tone arm—with its exact taper and perfectly smooth bore, which is scientifically calculated and constructed to conform to the expanding sound waves created by the sound box.

"Goose-neck" sound-box tube—a flexible metal connection between the sound box and tone arm, which enables the Victor Needle to follow the record grooves with unerring accuracy.



Victor-Victrola IV, $15

Other styles $25 to $200

Exhibition sound box—the accurate, sensitive reproducing diaphragm that picks up every particle of tone from the most complex chord no matter how minute and converts it into an exact reproduction of the original.

All we ask is that you go to any Victor dealer's in any city in the world and hear your favorite music on this Victor-Victrola.

If you don't know who the Victor dealer is in your locality, write us and we'll tell you. We will also send you the handsome illustrated Victor Record catalog—then you can pick out any selections you want to hear and he will gladly play them for you.

Victor Talking Machine Co., 23rd and Cooper Sts., Camden, N. J.

Berliner Gramophone Co., Montreal, Canadian Distributors

the roll into cakes. Fry the cakes in very hot suet or butter. If the Hamburg steak seems to be lacking in fat it is well to add a little chopped suet when mixing the softened crumbs into it. AUNT SALLY.

To Keep Butter.

I often hear good housekeepers say that it is quite impossible to pack butter so that it will keep longer than a few weeks, and be fit for the table. I never dispute them, if they are older than I am, or when they seem very opinionated; for I am a young housekeeper. But I have helped mother ever since I was a little girl of ten, and mother was a good housekeeper, and knew how to keep butter.

Another proof that butter can be packed, so that it will keep, is found in the fact that the very housekeeper who said it couldn't be done, has eaten my packed butter and called it good. But she didn't know it was packed, when she said so.

Every farmer's wife knows that there comes a time each year when there isn't cream enough to spare for butter, that is, unless several cows are kept. I never try to pack butter that is churned in very hot weather. Indeed, I seldom churn in hot weather, for then we require a great deal of milk and cream for the table. It is then we begin using the butter I had packed away in the spring, when the cows were fresh.

Butter must be quite firm to pack successfully. It should be well washed in plenty of clear, cold water, to get out all buttermilk, for it is the sour buttermilk that spoils, not the butter. I use fine rock salt for my butter, and with it I work in a very little saltpetre and sugar. I can't say how much, for I never measure—just take up a pinch of the saltpetre and mix it with a spoonful of sugar, and then mix this with a teacupful of the rock salt. After working the butter thoroughly, but not enough to break the grain and give it the appearance of salve, I pack it solid in new crocks holding about three pounds each. Then in large shallow crocks, I pour a quart or more of very strong brine and place the crock of butter upside down, in this. A piece of heavy paper is tied over all, and it is set away in a cool place until wanted. I have kept butter for three months, in this way, and it was as good as if freshly churned. Am sure it would have kept longer had I not needed it for the table.

MABEL PIERCE.

A Good Visit.

My husband has been enjoying himself all the evening at my expense—just because I told him Mrs. Lynn and I had had such a good visit today. He scoffs and says we did nothing but compare aches and pains Well, isn't that worth while? I think so. It's a great comfort, when you've been feeling badly for a long time, to know that someone else has gone through something as bad, or worse, and still lives to tell about it. I like to hear two women telling each other all their symptoms. I know they are getting a whole lot of anxiety out of their systems, and that it will do them a world of good. It's like a good, sharp thunderstorm—with fine weather to follow.

"Yes, I know. I was exactly like that. Sometimes, when the pain was worst, I thought I simply couldn't live through it, and I've lived to go through even worse pain, and now I begin to feel that nothing can kill me."

Ever hear anything like that? Of course, you have. And if it came at just the right time it cheered you up more than any doctor or nurse could possibly do.

I've known of so many of these neighborhood experience meetings, and the good they wrought, that now I always prescribe a good visit when one of my friends begins to look droopy. And I take my own prescriptions, too! Why, many and many a time I've gotten up in the morning feeling as if I couldn't hold my head up—and I've put on a clean dress and gone over to a neighbor's house, and when I came home I felt as good as new. This is especially true when I chance to pick out a neighbor who can talk faster than I can, and who feels worse. And I have the satisfaction of knowing that our visit did her quite as much good as it did me.

One often gets valuable suggestions, at such times, too. I remember once I was suffering from summer cholera, and the sick neighbor who had run in to tell me her symptoms, hastily fixed up a dose consisting of a half cupful each, of hot water and cider vinegar, into which she stirred a tablespoonful, each, of salt and black pepper. She made me swallow a teaspoonful of the stuff every five minutes. I couldn't help myself, for I had dosed her many and many a time. Well, her prescription actually helped me, and she was so pleased that she forgot all about her own symptoms, and I don't know to this day just what did ail her that morning.

I usually give a good dose of castor oil for summer complaint, and follow it up with small doses of brandy and nutmeg; but on this occasion I was so worked up because I happened to be out of brandy that I forgot to try something else.

Many times, all we really need is for something to happen to make us forget how badly we feel. We can't create the necessary excitement when we are too miserable to do more than just drag around, and in the country excitement is not always to be had for the asking. But we could manage to see a neighbor, more frequently than we do—and there's dollars' worth of benefit to be obtained from a good visit.

I'd like to prescribe a bicycle for nine out of every ten women—more especially country women. Yes, I know bicycling has gone out of style. I learned to ride when I had an opportunity to buy a hundred-dollar bicycle, that was nearly new, for $25. I had passed my fortieth birthday, too! That was—no matter how many years ago—but I still ride my wheel and enjoy it. I'm so independent, too, for I never have to wait for a team, but can go where I please, and when I please, and get there much more quickly than the average farm team could take me. Some women say they get so tired of doing their work that they couldn't ride a bicycle afterward, but I find that bicycling rests me. I really believe that the bicycle would be a blessing to the farmer's wife—if only she'd give it a chance. At least it would make a good visit with one's neighbor of more frequent occurrence, and that is worth a whole lot. AUNT KETURAH.

Don't Cook Too Much.

The first lesson for the young housekeeper to learn is to cook only as much as will be eaten at that meal. I know from experience that it is a hard lesson to learn. My mother used to tell me that I should try never to have quite as much as would be eaten of the food that I must serve frequently. "If the family asks for more and you do not have it, all will be glad to see it next time," she said; and she was very wise. So, when I feared that I had cooked too much of any one thing I tried to see if I could not divide it, making two meals of it by giving each a very small portion. Of course, that wouldn't work when it was a question of serving food that wouldn't warm over to advantage—and there is really comparatively few things that do warm over well, notwithstanding all that is said to the contrary by those who pride themselves on their art in "Made Over Cookery." I think as a rule we should all prefer something at first hand to the best they can offer in the way of warmed over stuff. Of course, it is well to know how to use stale bread, cold meat, boiled rice and dry cake, but it is much better not to have any to use.

I find it a good plan never to let scraps accumulate. When I am so unfortunate as to have anything left over, I make it up into some appetizing dish for the very next meal, and then I have only one new dish besides, so as to make sure that everything is eaten this time. Left-overs that accumulate and are pushed aside from day to day would much better have been thrown away in the first place. MRS. J. A. CARTER.

Hard Time Stories.

(Concluded From Last Month.)

Our special hard times began when we made up our minds to quit renting, and working around town, and buy a little home of our own. Land was high and the only thing we could do was to get rough timber land, along some river. We heard of a place where we could buy a small tract of land, so my husband went and looked over the place, buying a piece that suited him. We had a team, wagon, and harness, a few chickens, and that was all, after paying down $100 on the place. We moved into a small house that we

$1 Worth for 25c

We have a few hundreds of the Brother Jonathan series of fruit booklets, of which we sold thousands a few years ago, and want to close them out quickly. These books originally sold at 25c each, and Fruit-Grower readers took thousands of them at that price.

We Now Offer Four of These Books, postpaid, for 25c

Select the numbers you want, and send your order today, for there are only a few of several numbers. Orders will be filled as they are received, and if any number you select cannot be furnished, we reserve the right to send another number instead. Here is the list of those we can furnish now:

No. 2—A Treatise on Spraying. Tells all about how to fight insects and diseases which attack apples and strawberries.

No. 3—Strawberries and How to Grow Them. A dandy little book telling how to grow this most valuable fruit.

No. 4—Gardening. A practical little booklet which discusses all phases of gardening, including making and management of hotbeds.

No. 5—Packing and Marketing of Fruits. This book takes up the problem of packing and marketing in a common-sense manner.

No. 6—Bush Fruits. A booklet which discusses the culture of raspberries, blackberries, gooseberries, etc.

No. 7—Grapes. This booklet discusses planting and care of vineyards, and illustrates the famous Munson system of training the vines. Only 75 copies of this number are available.

No. 8—Pruning Booklet. Discusses the whys and wherefores of pruning fruit trees and shrubbery. Only 50 copies available.

No. 12—The Corn Book. A little book containing valuable information on corn culture, including chapters on seed selection.

Order These Books at the Rate of Four for 25 Cents

Send us list of the numbers you want, and act quickly, so that you will be sure of getting the numbers you want. Here's a real bargain, for thousands of these booklets were sold at 25c each, and every purchaser received his money's worth. Send order today to

THE FRUIT-GROWER, Book Dept., ST. JOSEPH, MISSOURI

The Safe Investment of Your Money

A company that has withstood the test of time for fifteen years, growing stronger each year through prosperity and panics, is a safe place for your funds. Our record is one of uninterrupted success for a long period under one management, with increasing strength and security assured. Our

7% Gold Bonds

provide an absolutely safe investment with a fixed income. Interest is payable semi-annually. These bonds are in the denomination of $100 and have coupon attached. They are secured by first mortgage on our real estate and all other property, including The Fruit-Grower.

If you are considering the investment of funds, the security of principal is the first requirement and we can satisfy you, as we have many other readers of The Fruit-Grower, who are now drawing interest on our bonds. Send check for the amount you have to invest and we will forward the bonds by registered mail or express; or we will send the bonds to your banker and you may give him the money for them. Write today for some of these bonds. We refer you by permission to the First National Bank of St. Joseph. Address

THE FRUIT-GROWER, St. Joseph, Mo.

Rubber Stamps You need Rubber Stamps for marking berry boxes, crates, stationery, etc. Send for free catalogue.
Gardner Office Supply Co. SPRINGFIELD MISSOURI

MAKE BIG PAY DRILLING WATER WELLS

Our Free Drillers' Book with catalog of Keystone Drills, tells how. Many sizes; traction and portable. Easy terms. These machines make good anywhere.
Keystone Well Works
Beaver Falls, Pa.

BE A REPORTER FOR THE M.S.I.A. EARN $6 to $15 A Day!
Any one can secure the information we want. Send stamp for particulars. M. S. I. A. Association, 124 Association Building, Indianapolis, Indiana

WANTED, men to become independent farmers in Central Arkansas; finest fruit and berry country; the nation's garden spot; large profits on small capital; booklet free. CLOPTON HOPKINS, Kensett, Ark.

The Perfect Burner

NO SMOKE—NO ODOR

This ingeniously contrived mantel attachment transforms the weak, reddish flame of the ordinary burner into a white dazzling light. Many times more powerful and clear and gives as much light as three times ordinary lamps. Relieves all eye-strain, so common when poor lights are used. Nothing better for all-night use. Every burner guaranteed. Inquire of your dealer or send us 20c and we will mail you burner complete for a No. 1 or No. 2 lamp, or No. 2 cold-blast lantern. **AGENTS WANTED.**

Perfect Burner Company
462 Spitzer Bldg. TOLEDO, OHIO

In writing advertisers please mention The Fruit-Grower.

The slickest money-making proposition in the country for wide-awake agents. Carpenter selling 200 every week; Birley sold 3200 and still going. ONLY SCIENTIFIC automatic razor sharpener made; gives Barber's **Diagonal Stroke, Hones** and **Strops** all standard razors and safety blades. Guaranteed for life. Sells on sight. $2 complete. 100 to 150% profit. Write today for exceptionally liberal offer. Secretary.

AGENTS
$50.00 to $100.00 EVERY WEEK

THE VICTOR CO., 800 Victor Bldg., CANTON, O.

In writing advertisers please mention The Fruit-Grower.

$4 Puts a Set of Steel Wheels on Your Wagon

Try wheels 30 days for heavy hauling on roughest roads. If wheels are as represented, pay balance. If not, back comes your $4. Write for Free Measuring Device.

EMPIRE STEEL WHEELS

Made in one piece! All sizes, to fit any axle. Save 25% of draft. Thousands sold. Owners delighted. Life-savers for men and horses. Book Free.

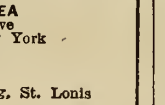
Empire Mfg. Co., Box 912, Quincy, Ill.

In writing advertisers please mention The Fruit-Grower.

Try This Stump Puller at Our Risk

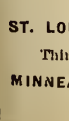
The Smith Stump Puller will take out every tree and stump by the roots, clearing from one to three acres a day, doing the work of twenty men. We want you to send for our 3 year guarantee against breakage and our free trial proposition Address

W. Smith Grubber Co.
8 Smith Sta.
LaCrescent, Minn.



HONEST MAN OR WOMAN WANTED

A large, well-known company, about to spend $100,000 on a tremendous advertising campaign, requires the services of a bright man or woman in each town and city. The work is easy, pleasant and highly respectable, and no previous experience is necessary. We will pay a good salary and offer an unusual opportunity for advancement to the person who can furnish good references. In addition to this salary, we offer a Maxwell automobile, a Ford automobile and over $3,000 in prizes to the representatives doing the best work up to December 31. In your letter give age and references. Address Ira B. Robinson, Advertising Manager, 902 Doty Bldg., Boston, Mass.



4 BUGGY WHEELS FREIGHT PAID STEEL TIRES **$8.75**

With Rubber Tires, $18.45. Your Wheels Rerubbered, $10.30. I make wheels ¾ to 4 in. tread. Tops, $6.50. Shafts, $2.10; Repair Wheels, $5.95; Axles $2.25; Wagon Umbrella free. Buy direct. Ask for Catalog Q

SPLIT HICKORY WHEEL CO., 530 F St., Cincinnati, Ohio.

FREE TUITION to one from each county. Board and room $2.60 a week. Books rented. Opens Oct. 8th.
Humboldt College, Humboldt, Ia.

MEDICINAL ROOTS—Golden seal, Senega, Pink Root, Etc. Easily Grown. Profits large. Send for prices. SELIGMAN PLANT COMPANY, SELIGMAN, MO.

FOREMOST FARM PAPERS

1,392,000 Circulation at $6.55 a Line

	Guaranteed Circulation	Line Rate
The Fruit-Grower .... St. Joseph, Mo.	100,000	$ .50
Successful Farming .... Des Moines, Ia.	600,000	3.00
Farm, Stock & Home ... Minneapolis, Minn.	105,000	.40
Southern Ruralist .... Atlanta, Ga.	150,000	.75
Kimball's Dairy Farmer . Waterloo, Ia.	100,000	.50
The Gleaner ..... Detroit, Mich.	125,000	.50
Green's Fruit-Grower ... Rochester, N. Y.	125,000	.50
Inland Farmer ..... Louisville, Ky.	57,000	.25
Western Farmer ..... Spokane, Wash.	30,000	.15

CHICAGO
J. G. BILLINGSLEA
Western Representative
816 First National Bank Building, Chicago

NEW YORK
A. H. BILLINGSLEA
Eastern Representative
1 Madison Avenue, New York

ST. LOUIS
A. D. McKINNEY
Third National Bank Building, St. Louis

MINNEAPOLIS
R. R. RING
Globe Building, Minneapolis

rented by the month, while the eldest boy, (he was fifteen then) and his father got out logs, took them to the mill, and hauled lumber back to build our house. We had to buy our shingles, doors, windows, and the hardware; but inside of four weeks we were in our little cabin. When we moved into our house, the boy went back to a farmer near where we had lived; to pay his fare, we had to take every penny we could rake and scrape up about the house, even robbing the children's banks. We were finally fairly launched in an effort to have a home of our own, but there was not a foot of cleared land on the place. The first thing my husband did was to cut a load of green hickory to take to town; for in all those "wood towns" there are some who will buy green wood, for what they can make on it when it is seasoned. He hauled it nine miles, to a town where of course, he was a perfect stranger. No one would make him an offer, until, finally towards night, a hardware merchant, (he also kept a few groceries, and bought wood when he could get it for a little of nothing), offered to take his wood at a very low price, if he would take groceries for it. As he could see no other way to do, my husband accepted the offer, and, selecting a few things most needed, came home, vowing that he would not try to sell any more green wood. He put in his time clearing a place for a garden, and a patch for potatoes, as it was in the spring of the year. By this time, we had made the acquaintance of some neighbors, among whom was a man who raised a good many potatoes. He willingly sold us some seed and a few potatoes to eat, agreeing to wait till fall for his pay. We wanted to raise a nice lot of chickens, so we could not sell all of our eggs, and of course, were obliged to use some for the table, but we never bought a pound of butter, or a quart of milk; no fresh meat, only a little bacon once in a while, and we absolutely cut out all extras, such as cake, pie and the like. In July, our sixth child was born, my husband and little daughter, nine years old, doing the work until I was able to be about again. In August we bought a cow, giving a note for it. We surely were a happy family then, with milk and butter to use, and visions of custards, puddings, and the simple things we had done without for so long. We had two children in school that year, and perhaps you can imagine their dinners, with no butter, jam, or jelly; no nice meat sandwiches either. They just had bread moistened with water, and a little sugar sprinkled over it. Once in a while we had chicken for Sunday dinner, and I made a good dish of gravy, saving some for their dinner at school. This they thought a great treat; my oldest daughter, a graduate from High School now, still remembers how good it tasted. "Why, mama, there never was anything so good as that cold chicken gravy on our bread," she has often said. After the fall work was over on the farm, the farmers came to the woods to buy timber for posts and fuel. We sold several acres that way, so that with the vegetables we raised, we were not so pinched for means as before. We have always considered these our hardest years; we can laugh at it now, but it was no laughing matter then. I firmly believe, however, that it was a good experience for us all, especially the children who were large enough to remember it. One joke on me was my telling the little ones that after we had our cow, I would make them cookies, and the youngest, aged three, said, "Why, mama, do you know how?" —Mrs. A. M. G.

My experience of hard times began in 1873 when only three years of age. At that time my parents with a family of seven children, emigrated from Scotland to this country with three hundred other families, and located in the virgin forests of New Brunswick. The government gave them free deed to 165 acres of land, with a "cut-down" of one acre, and a log cabin to live in. Young though I was, I well remember our landing there, with nothing to greet us but a white rabbit that had taken up its abode in the hut. This was the second week in May, but there were still large patches of snow in places. In summer there was an abundance of raspberries on the roadside, and a large brook close by, was, at that time, so full of the sweetest brook trout, that we could scoup them up by the pailful; this proved to be our bill of fare for the first summer. I may also add that there was an abundance of mosquitoes, which kept us all well employed. The only way that sleep was obtained was by filling the cabin with smoke, and this was rather difficult, as the cabin was well ventilated, both winter and summer. As winter came on, my parents having no knowledge of the climate, were wholly unprepared for the intense cold. The mercury would hover around 30 to 40 degrees below zero, for weeks at a time, and the snow would fall to the depth of six or seven feet. Many of the crops put in first were frozen in the ground, and the heavy frosts of early fall would destroy the crops that had not fully ripened. As soon as the Scotch families landed, the storekeepers put up their prices nearly double on all goods, and those who had the means could buy, but for those who were destitute of means, the suffering was indescribable. We being of the latter class, we three youngest children were compelled to stay in the house in the winter. When we grew older, a schoolhouse was built near our home, so that when we went to school, we started on a quick run over the trodden snow, but on reaching school our feet would be all swollen and sore from exposure. It was nothing uncommon for us to go to bed in the loft, and wake up all covered with snow that had drifted in during a wild storm. The time crept on and we grew up and helped father clear the land. I could swing an ax as well as my older brothers. One by one, we were compelled to leave home, going where we could find better advantages, but never for a moment forgetting the old home. One instance, I well remember, (the most marked of all), was when we three youngest children stood at my mother's knee, crying for bread, and the tears coursed down her cheeks. She took a pan and dug out the newly planted potato seed, cooking them for us. My father wondered why they never grew, but mother did not have the heart to tell him until long afterwards. We all married, the natural thing to do. My mother, a sister and a brother are long since dead. As I look back now, they were happy days, as well as hard ones.—"A Scotchwoman.'

Some of the Uses of Salt.

Salt on the fingers when cleaning fowls, meat or fish will prevent slipping.

Salt thrown on the fire when broiling steak will prevent blazing from the dripping fat.

Salt as a gargle will cure a sore throat.

Salt in solution, if inhaled, will cure a cold in the head.

Salt in water is the best thing to clean willow furniture and matting.

Salt in the oven under baking tins will prevent their scorching on the bottom.

Salt puts out a fire in the chimney.

Salt and vinegar will remove stains from discolored teacups.

Salt and soda will relieve the pain of bee stings and spider bites.

Salt thrown on soot which has fallen on the carpet will prevent a stain.

Salt put on ink freshly spilt on the carpet will help to remove the spot.

Salt in whitewash makes it stick.

Salt thrown on a coal fire which is low will revive it.

Salt used in sweeping carpets keeps out moths, and coarse salt sprinkled on a carpet that looks dull, then swept hard, will do much to brighten it.

EMILIE DE WITT.

Ask your neighbor to subscribe for The Fruit-Grower.

Can you always eat all that you "can"?

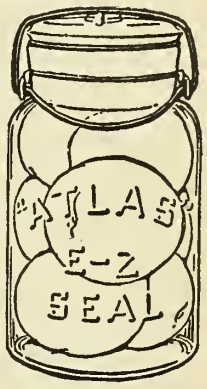
After the work of "canning" do you find much of your fruit is spoiled? Then, why persist in using old-style, narrow-necked, tin-topped, screw-capped jars? That was the old way of "canning." The new way, the easier, safer, *better* way is called "jarring," preserving in the all-glass

E-Z SEAL JAR

Try putting up beets, beans, corn and tomatoes for winter use. It is *fun* when you use the E-Z Seal Jar. It has the sanitary all-glass cap—no metal at *all*. No twisting and turning—the cap clamps with a spring seal. It closes and opens with a *touch* of the finger. And—your fruit *keeps!*

Free Jar—Free Book

Cut out this coupon, take it to your grocer—he will give you one E-Z Seal Jar—FREE. Be sure and write us for FREE Book of Recipes—it tells many things you should know. Get the Jar from the *grocer*. Get the Book from *us*



HAZEL-ATLAS GLASS COMPANY
Wheeling, W. Va.

1-Qt. E-Z Seal Jar CF FREE for the Coupon

Please note—in order to secure free jar this *coupon must* be presented to your dealer before Oct. 1st, 1912, with blank spaces properly filled out.

HAZEL-ATLAS GLASS CO.,
Wheeling, W. Va.

This is to certify, That I have this day received one "Atlas" E-Z Seal Jar Free of all cost and without any obligation on my part. This is the first coupon presented by any member of my family.

Name_____

Address_____

TO THE DEALER:—Present this to jobber from whom you recieved E-Z Seal Jars. All coupons must be signed by you and returned before Nov. 1st, 1912.

DEALER'S CERTIFICATE. This is to certify, that I gave away one "Atlas" E-Z Seal Jar to the person whose signature appears above.

Dealer's Name_____

Address_____

HOTEL CUMBERLAND

NEW YORK

Broadway at 54th Street

Near 50th Street Subway Station and 53rd Street Elevated.

Broadway cars from Grand Central Terminal and cars from new Pennsylvania station pass the door.

New and Fireproof

Best Hotel accommodations in New York at reasonable rates

$2.50 with Bath, and up

Ten minutes' walk to thirty Theaters. Excellent Restaurant. Prices moderate.

Send for Booklet

HARRY P. STIMSON
Formerly with Hotel Imperial

Our Classified Advertising Department

For advertisements in this department, of not less than twenty words each, in which no display type is used, we make a special rate of FIVE CENTS PER WORD, EACH INSERTION. If several different advertisements are inserted in the same issue, the charge will be $1.00 for each ad, no matter how small. The first four words of each ad will be set in black type. Every initial and number to count as one word. This department is for the benefit of our subscribers who have anything to sell, including farm lands, fruit farms, dogs, ponies, poultry and eggs, live stock, plants, shrubs, vines, etc. All advertisements for this department must be PAID FOR IN ADVANCE. Count the number of words you send, and remit at rate of 5 cents per word, stamps, currency or money order. This is considerably less than our display rate, and offers a splendid opportunity to reach our readers at a low figure. Send a trial advertisement with remittance at rate of 5c a word THE FRUIT-GROWER, St. Joseph, Mo.

Vinegar Easily Made.

Making fruit into vinegar is a satisfactory and profitable way of disposing of waste fruit. This is particularly true with cull and low grade apples. Vinegar can be made from almost any fruit, but its most common sources are from apples and grapes. Cider vinegar possesses a more delicate flavor and aroma than other fruits, and is the most common form. It is nothing more than cider which has turned to acid through certain processes of fermentation.

Cider vinegar can be made on any farm or in any household with but very little trouble. While easy to make there are many failures, all of which are due wholly to carelessness or ignorance of a few simple things. After the cider is made it must go through two distinct kinds of fermentation before it becomes vinegar. First it must become "hard," or alcoholic, and second, the alcohol must be turned into acid. Where apples are to be made into vinegar they must be fully ripe, clean and not rotten or worm-eaten. Ripe apples contain the greatest amount of sugar, and it is sugar which is eventually turned into the acid of vinegar.

Squeeze out the juice of the apples in a cider press using as much pressure as possible. Pour this into a clean barrel and set where it will not freeze or become too warm. A good frost proof room is the best place. As soon as the juice has been pressed it begins to ferment, and after standing two or three days it will be bubbling in a lively manner in the first fermentation. This fermentation is caused by yeast, the same kind of an organism that makes bread rise. Here it is that the sugar of the cider is changed into alcohol. A gas is also given off and in its escape it causes the bubbling characteristic of this fermentation.

While this yeast is at work, keep the cider cool. A temperature between 60 and 70 degrees is best, as then the alcohol formed in the fermentation will not escape as it will when the cider is warmer.

In the course of three to seven weeks this first fermentation will have been completed, and there will be little or no bubbling of the juice. It is in this condition that cider is called "hard," as the sugar has been converted into alcohol, but has not yet developed into the acid stage. It is then ready for the second fermentation to begin.

This second fermentation does not take place with the bubbling that is characteristic of the first. It goes on quietly, and instead of being caused by yeast, it is done by bacteria. These bacteria are, of course, very small, but they collect into such great masses as to make a thick leathery skin over the surface of the juice. They feed upon the alcohol of the hard cider and change it slowly into the acid of vinegar. It takes at least a month for the first fermentation to be completed, but takes six months more for the hard cider to become a good grade of vinegar.

At this stage is where many failures are made in the home manufacture of vinegar. It is necessary to keep the barrel or other vessel in which the vinegar is made open all of the time. In the first fermentation this is necessary to allow for the escape of the gas which is formed. In the second, it is needed to enable the bacteria to oxidize the alcohol. If a fruit juice is placed in a tightly sealed vessel as soon as the bubbling has stopped, it will remain as hard cider or wine. But if exposed to the air, by leaving the bung or cork out of the vessel, the bacteria convert the alcohol of the juice into vinegar.

In making vinegar from apples there are several things to bear constantly in mind. These are: First, to avoid the use of rotten, wormy or dirty apples, as these all spoil the flavor and aroma of the vinegar. Then too, rotten apples carry with them many organisms which interfere with the fermentation of the cider.

Second, after the juice has been pressed, put it where it will be no warmer than 75 degrees, and not colder than 60 degrees. A violent fermentation will take place, and if it has not started by the third day, soak up a little bread yeast and pour into the barrel. This yeast changes the sugar of the fruit juice into alcohol, making "hard" cider.

Third, another fermentation begins as soon as the bubbling has stopped, being caused this time by bacteria. No bubbling appears with this fermentation, but results in the formation of a leathery skin over the surface of the juice, and called the "mother of vinegar." Don't break this skin. If the cider has been kept at too low a temperature the mother may be very slow in forming and may need a starter. This can be done by placing a little "mother" from old vinegar on the surface of the hard cider. In case the mother is not attainable, it can be made in a few days by mixing equal parts of hard cider and vinegar in a shallow pan and keeping it at a temperature of about 80 degrees. In a few days a coating of mother will appear on the surface and should be floated carefully on the hard cider.

Fourth, do not cork the vessel after the mother has begun to form. Let it have air, as this is needed by the bacteria in changing the alcohol of the hard cider into vinegar. Where the juice is in barrels, a piece of cheese cloth may be tacked over the bung hole, to keep out the gnats and flies, and still admit air.

Fifth, do not fill the barrel within six inches of the top when the second fermentation is begun. Have a large surface of the liquid exposed to the air and action of the mother.

Vinegar is so easy to make, it takes so little labor and affords such a profitable way of disposing of cull apples, that every grower of fruit ought to make much more of it. It can be made from almost any fruit, such as apples, grapes, pears and some of the berries, but the usual form of fruit juice vinegar is from apples. Grapes make a most excellent vinegar, particularly the white fruit varieties. Peaches make a good white vinegar, but generally of a poorer grade than apples or grapes.

Subscription expired? Don't miss big special issues. Renew today.

POULTRY DEPARTMENT

White Orpingtons. One breed bred right. If in need of a winner for the fall and winter shows, write us. We have them at prices proportionate to values. Mountain View Ranch, 8 Sugar St., Salt Lake City, Utah.

Sheppard's Famous Anconas. The world's best, single or rose comb. First at world's greatest shows, including London, England; Madison Square, and Cleveland. Greatest egg record, 256 average. Catalogue free. Cecil Sheppard, Berea, Ohio. President International Ancona Club.

R. C. W. Leghorns—Pekin ducks. Yearling males and females for sale at prices that will move them. Bred from Chicago, Minneapolis, Oshkosh, Fond du Lac winners. Circular. Joseph H. Kitchen, El Dorado, Wisconsin.

Light Brahmas. Winners at Kansas City, Mo.; Unionville, Mo. Centerville, Iowa, and elsewhere. Show birds and choice breeders for sale at reasonable prices. Get our prices. K. I. Miller, Box G, Lancaster, Mo.

By carefully mating the very best stock obtainable, I have produced a high-scoring winter-laying strain of Partridge Wyandottes. Stock and eggs for sale. W. E. Brockeisby, Lawrence, Kansas.

Stock, eggs, baby chicks. From winners at Springfield, Jacksonville, Pittsfield, Illinois, 1911. Write for circular. Southern Slope Poultry Farm, Box A, Jacksonville, Ill.

White Indian Runners. Some extra fine ducks and drakes for sale at reasonable prices. A few good pens at $20.00. K. I. Miller, Box G, Lancaster, Mo.

S. C. B. Leghorns—600 hens for sale at a bargain. R. Hendricks, Washburn, Ill.

FARM LANDS FOR SALE

Arkansas

Famous Springdale fruit district; fine apple crop in sight. These should appeal to men of means; 240 acres, few miles out; exceptional improvements; about 100 acres bearing apple orchard, balance strong grain land; $30,000. Also 180 acres edge of town, fine improvements; 60 acres bearing apples, 30 acres peaches, balance timber and pasture, including 16 acres alfalfa; $20,000. Al investments and bound to grow in value. Terms and possession can be arranged. Fredricks Realty Company, Springdale, Washington Co., Ark.

Famous Benton County, Arkansas, in the heart of the Ozarks. Fruit and poultry a specialty, but land will grow everything. Have two special bargains at present that are just what you want. Write Banks & Adcock, Hiwasse, Ark.

Orchard For Sale—120 acres in Arkansas fruit belt; 3,400 trees. Fine community. Telephone, mail route. Near good railroad town. Write Charles Thompson, Pottsville, Ark.

Wanted—Buyer, four carloads first-class Jonathan apples. Farm half mile west Springtown, connected with Frisco railroad. Geo. A. South, Springtown, Ark.

Grow strawberries for early Kansas City markets on cheap land in Arkansas. "Homeseekers Guide" free. Porter Land Co., Horatio, Ark.

Cuba

Rich soil, ideal climate. Abundant rainfall, best transportation; 20 acres, $600, $10 monthly. Map and literature free. S. O. Sanderson, 184 Palace Bldg., Minneapolis, Minn.

Iowa

For Sale—80-acre truck farm, one mile from city. Owner has made fortune, wishes to retire. Best hotel trade in city goes with place. Owner will work one year for buyer without pay to insure success; he is expert; 25 years in business; 7 greenhouses, cover 2-3 acres; 2 acres in hotbeds under glass. Price very low; terms to suit. Ask for particulars. John Thompson, Box 772, Sioux City, Iowa.

For Sale—40 acres fruit farm in Van Buren Co., Iowa. For particulars write J. F. Loomis, Douds Leando, Iowa.

North Carolina

Come South. Mountain section, altitude 2,250 feet. Mild winters, cool summers. Dairying, fruit growing, diversified farming. Cheap lands. Information Bureau, Hendersonville, N. C.

New Mexico

For Sale—A fruit farm in the famous Animas Valley of northwestern New Mexico. Forty acres, two large orchards, 2,000 boxes of apples on the trees, good improvements; one-fourth mile to station. Address C. A. Cutler, Cedar Hill, New Mexico.

Oregon

City orchard in Oregon. One of the very best apple orchards in the famous Rogue River Valley, sunny southern Oregon. Three acres of 20-year-old Newtowns and Spitzenburgs in perfect condition, $2,000 crop in 1909. Five blocks to school and church, three more to business district. Best residence city on the coast. Mountain water and scenery. Splendid climate, no saloons, 5,000 population. Refer to T. F. Smith, fruit and orchard inspector, or C. H. Gillette, president fruit association. Price with crop, house and half acre adjoining, $7,500. O. H. Barnhill, Ashland, Oregon.

Texaa

For Sale—380 acres fruit and farm land; water, wood, good climate. Box 100, R. 1, Grapevine, Texas.

Utah

For Sale—Thirty acres fruit orchard, Elberta, Utah. Ten acres peaches, twenty apples, just beginning to bear. Typical place to live. No better place to grow fruit and vegetables than Utah Valley. Write Z. T. Kemper, Alma, Neb.

Apples—Sprayed orchard, will sell in orchard or on track; 4 miles from Wymore. S. L. Pyle, Wymore, Nebraska.

Virginia

Come to Waynesboro, Virginia, the best apple-growing section in the Eastern states. Absolutely no malaria or fevers, a modified climate, pure spring water, right at the door of big Eastern city markets, freight rate 9 cents per box to New York. All white people, excellent schools, good roads—a wide-awake, live community, where every grower is prosperous. These are the best bargains I have ever handled: Five acres with 245 two-year apple trees, Rome Beauty and Delicious, near Waynesboro, $800; 5½ acres, with 225 bearing apple trees, house, stable, water, near town, price $1,275; 5½ acres with 180 splendid bearing trees, good house, absolutely healthy section, near town, price $1,500; 12¾ acres and 400 red apple trees, mostly in bearing, very attractive home in excellent condition, in the heart of the Shenandoah Valley near town, schools and railroad, price $2,500; 48 acres proved apple soil and 1,020 apple trees near Waynesboro, tenant's house, stable, spring, price $4,000; 20 acres and 960 of the best apple trees in Shenandoah Valley, present crop 1,200 bushels of fancy fruit, house, stable, spring, near railroad, schools, price with crop $6,500. Perfect titles, warranty deeds, liberal terms. If you are in shape to buy any of these, write me quick for full descriptions. H. Magie, Waynesboro, Virginia.

Look ahead five years—What's in store for you? Would a pretty home in absolutely healthy climate and comfortable living income every year appeal to you? One of our ten-acre apple orchard tracts, planted with 500 apple trees—which will cost you a few dollars now and small payments monthly—will insure your future home, income and happiness. Write now for descriptive Book 1, Shenandoah Valley Apple Lands Company, Waynesboro, Virginia.

Virginia Orchard, 300 acres cleared, 115 acres in orchard, 3,000 apples, 11,000 peaches. Good improvements. Big crop now on trees. Price $12,000 without fruit, or $15,000 with fruit. E. S. Wilder, Charlottesville, Virginia.

For fine farms in Virginia, cheap, write The H. A. Chamberlain Realty Co., Farmville, Va.

Washington

For Sale—Fifty-five acres in the famous Yakima Valley. Irrigated. Deep volcanic ash soil, gravel sub-soil; ten acres apple orchard; ten acres clover and timothy; twenty acres alfalfa, balance plow land; crops certain; climate unexcelled. Owner must sell. Price little more than sage-brush land in the vicinity. $175 per acre, terms; no trade. John H. Best, Wapato, Yakima Co., Wash.

The Walla Walla Valley has never experienced a cyclone, tornado, hurricane or blizzard, crop failures are unknown, abundant opportunities for successful investments. Write for information regarding fruit growing, truck gardening, dairying and poultry raising. Ask for beautiful free illustrated booklet C, Commercial Club, Walla Walla, Washington.

Washington fruit farm for sale, or will exchange for something at higher altitude. Ten acres, all in fruit, except 1½ acres alfalfa. Trees six years old, small fruit and asparagus between rows. High state of cultivation, good crop on trees. Write for description and particulars. A. M. Russell, Kennewick, Wash.

For Sale—Best commercial 40-acre orchard, coming three years old, spring 1913, in Spokane County. House, barn, well, team, implements, $20,000.00. Worth $1,000 per acre, when eight years old. Exceptional opportunity if taken now. Apply to owner on premises. L. Helgert, Kiesling, Washington.

MISCELLANEOUS FARM LANDS

FARM BARGAINS FOR SALE BY FRANK P. CLEVELAND.

480 acre improved farm, Wells County, N. D., $35 acre.
120 acre farm, Payne County, Okla., $45.00 per acre.
480 acre farm, Meade County, S. D., $60.00 per acre.
320 acre farm, Perkins County, S. D., $20.00 acre.
160 acre farm, Moody County, S. D., Price $7500.00.
960 acre farm, Calhoun County, Texas, $35.00 acre.
200 acre farm, Juneau County, Wis. $6000.00.
80 acre fruit farm, Panola County, Tex. $4,000.00.
640 acre tract, Lincoln County, Neb. $10.00 per acre.
80 acre farm, Marathon County, Wis. $2800.00.
214 acre farm, Chariton County, Mo. $70.00 acre.
I bring buyers and sellers together. No matter where located, if you want to buy, sell or trade any kind of business or property, write me. Established 1881. Frank P. Cleveland, 994 Adams Express Building, Chicago, Ill.

REAL ESTATE AGENTS

Cash for your farm or business. I bring buyers and seller together. No matter where located, if you want to buy, sell or exchange any kind of property, anywhere, address Frank P. Cleveland, 994 Adams Express Building, Chicago, Ill.

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace Bldg., Minneapolis, Minn.

Sell your property quickly for cash, no matter where located. Don't pay big commissions. Particulars free. Real Estate Salesman Co., Dept. 28, Lincoln, Neb.

AGENTS WANTED

Automobile Agents—I want local agents in every country in the United States to handle a popular-priced line of automobiles; a good name and reputation for integrity counts more with us than money or experience; if you have $300 and can furnish bond, you can procure the agency for our high-grade car, and we will furnish you with demonstrator. For full particulars, address R. C. Lewis, sales manager, Box 55, Milwaukee, Wis.

MISCELLANEOUS

Free—"Investing for Profit" magazine. Send your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine. It is worth $10 a copy to any man who intends to invest $5 or more per month. Tells you how $1,000 can grow to $22,000. How to judge different classes of investments, the real power of your money. This magazine six months free, if you write today. H. L. Barber, publisher, R434, 20 W. Jackson Boulevard, Chicago.

Six to seven thousand bushels of winter apples for sale on trees at reasonable price. One mile east of Tecumseh, Neb. Orchard sprayed, apples of good quality, plenty of rain to finish them. Principal varieties are Winesap, Ben Davis, Jonathan, Missouri Pippin, Grimes Golden, Winter Pippin and others. Ridgeway McCoy, Tecumseeh, Neb.

Buy no barrel caps until you get a sample of the Appco Shipsafe cap. The deep, close corrugations make them much better for either top or bottom. Write for sample, stating about how many you will use. American Paper Products Company, 300 Bremen Ave., St. Louis, Mo.

Young Man, would you accept and wear a fine tailor-made suit, just for showing it to your friends? Could you use $5.00 a day for a little spare time? Perhaps we can give you a steady job. Write at once and get beautiful samples, styles and this wonderful offer. Banner Tailoring Co., Dept. 739, Chicago.

Kodak Films Developed 10c per roll, any size. Prompt attention given mail orders. Prints 2¼x3¼ to 3¼x4¼, 3c; 4x5 to 3¼x5½, 4c. J. M. Manning, 1062 Third Avenue, New York City, Box M.

Consulting horticulturist—J. F. Littooy, Boise, Idaho. Directs orchard operations. Investigates orchard values and operations. Expert for counsel at law.

For Sale—In orchard, about 500 barrels Maine apples, largely Baldwins. Miss G. V. Wilbur, Phillips, Maine.

Wanted—Colonists for a co-operative colony in Tennessee. H. E. Sawdon, St. Elmo, Tenn.

For Sale—Apple barrels, low prices. Queen City Cooperage Co., St. Joseph, Mo.

HELP WANTED

Box packer wanted to pack part of my crop in boxes. State terms. R. P. Johnston, Box 1077, Asheville, N. C.

NURSERY STOCK

Grow $5,000, as a side line. Raise Hydrastis and Ginseng; $10.00 worth to the square yard. Sure crop. No hazard. Rapidly rising market prices. Plants for sale with easy can't-fail plans, and I buy all you raise. Chas. G. Dodge, Albany, Wis.

To introduce stock, we will send 10 Yellow Transparent and 10 Jonathan, first-class, one-year apple trees, for $1. Catalogue free. Parker Bros., Fayetteville, Arkansas.

Strawberry plants, $1.75 1000; raspberries, $5 1000; rhubarb plants, $1.50 100; asparagus plants, $2.50 1000. Alva Cathcart, Bristol, Ind.

Make $25.000 in spare time. Raise Golden Seal. Circular free. Bowman Gardens, Albany, Wisconsin.

DOGS AND PET STOCK

For Sale—Scotch Collie puppies from imported and registered stock. Every fruit grower should own a Collie and for a good one should write D. B. Rice, Marcellus, Mich.

10,000 Ferrets For Sale—Write for price list and catalogue; it's free. De Kleine Bros., Jamestown, Michigan. Box 12.

LIVE STOCK

Milch Goats—Swiss and Spanish breeds. G. H. Wickersham, 1244 St. Francis Ave., Wichita, Kansas.

OPPORTUNITY

Large manufacturing company, who has been engaged in the manufacture of a power sprayer, which is in good demand, would sell this portion of its business at a low figure, to make room for its increasing business in other lines. Valuable patented features make it a leader as well as a good seller. Rare opportunity for one desiring to enter the field. Address Box E. G., The Fruit-Grower.

PATENTS

Valuable Free Book on Patents, telling how to procure. Would like to sell in orchard. Buyers, come or write for particulars. R. M. Denson, Ursa, Ills.

Valuable Free Book on Patents, telling how to protect and turn your ideas into gold; sent free. Fitzgerald & Co., 821 F St., Washington, D. C.

HONEY

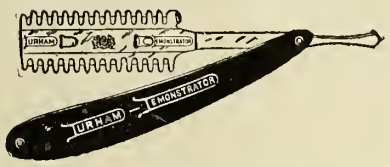
Finest quality new clover honey in thirty-pound cans; price for one can, $3.45; two or more cans, $3.30 each. Sixty-pound cans, $6.30 each. Send for price list. M. V. Facey, Preston, Minn.

Our Premium Page

WE DESCRIBE herewith a list of high-grade premiums which may be secured absolutely free by readers of The Fruit-Grower and Farmer who renew their subscriptions in the next month. In case you have paid your subscription in advance, this will afford you the opportunity of securing one of these premiums by securing new subscribers for The Fruit-Grower and Farmer. You know those in your neighborhood who should read The Fruit-Grower and Farmer. Show your copy of the magazine to your friends and it will be no trouble to secure subscriptions.

We wish to announce that commencing with the edition of October, 1912, a change will be made in the title, and in the future The Fruit-Grower will be known as The Fruit-Grower and Farmer. The staff of The Fruit-Grower and Farmer now includes an expert agricultural editor, who will have complete supervision over this department. In addition to regular agricultural matter, a number of special articles are being prepared, showing how readers in various parts of the country are meeting with great success by specializing on some certain branch of general agriculture in connection with the growing of fruit. Do not fail to send your subscription at once and be sure of getting the great October number. This premium offer holds good only in the United States. Read the terms in connection with each offer.

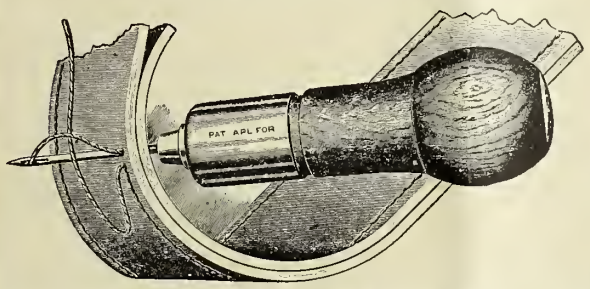
Durham Duplex Safety Razor



We have selected in this premium the best thing on the market in the way of a safety razor. This razor you will note from the illustration herewith, is made on the order of an ordinary razor, with a double-edged blade, the same being protected by a guard as shown in the cut. The razor blade can be readily detached. This is the "Durham Demonstrator" razor, and the blade and fixture is practically the same as the razor of the same make which sells for $5.00. This razor is used in exactly the same manner as the regular type of razor. If you will try this great razor, you are sure to be pleased with the wonderful ease, quickness and comfort with which you can shave yourself. The razor will be mailed prepaid, packed in a neat box, with thorough details in regard to its use. This razor will be sent free if you remit either $1.00 for a year's subscription, $1.50 two years, or $2.00 for three years; or if you will send us one new subscription at our regular rate, which is $1.00, it will be sent to you.

THE FRUIT-GROWER AND FARMER, ST. JOSEPH, MISSOURI

Speedy Sewing Awl



You should have one of these speedy sewing awls. After using it you will wonder how you ever got along without it. This is the very latest invention in an awl of this nature. With it you can mend harness, shoes, tents, awnings, belts, carpets and suitcases or any heavy material. It is provided with a set of diamond-pointed, grooved needles, including a special needle for tapping shoes.

The awl has a tension which enables you to tighten the stitch and it can be used with or without the bobbin, which saves refilling when you have a lot of work to do. No wrench or screw-driver is required to remove the bobbin or tighten the needle. It is convenient to carry, always ready to mend a rip or tear. This awl will be sent free, prepaid, if you will send either $1.00 for a year's subscription, $1.50 for two years, $2.00 for three years, or will be sent you free if you will send us one new subscription at our regular rate, which is $1.00.

THE FRUIT-GROWER AND FARMER, ST. JOSEPH, MISSOURI

Special Renewal Offer

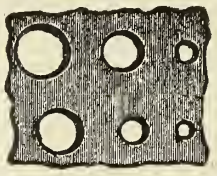
To any Fruit-Grower and Farmer reader who will send in remittance of $1.00 for a year's renewal during the next thirty days, we will send Successful Farming for two years without extra charge. Successful Farming is published once a month at Des Moines, Iowa. This offer holds good for only thirty days, unless otherwise announced. Take advantage of it now.

THE FRUIT-GROWER AND FARMER, ST. JOSEPH, MISSOURI

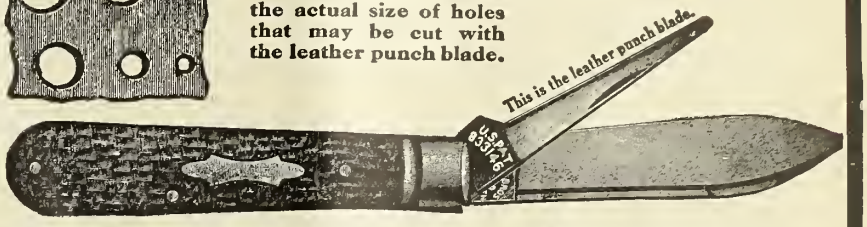
Write Today for Special Terms and Cash Commissions for Securing New Subscribers.

Farmer's Wonder Knife

The illustration shows slightly reduced size of the knife. Besides the large blade, which is two and three-fourths inches long, this knife has a smaller punch and reamer blade two and one-eighth inches long, and cuts holes exactly as shown in illustration. Both blades are of the finest tempered tool steel,



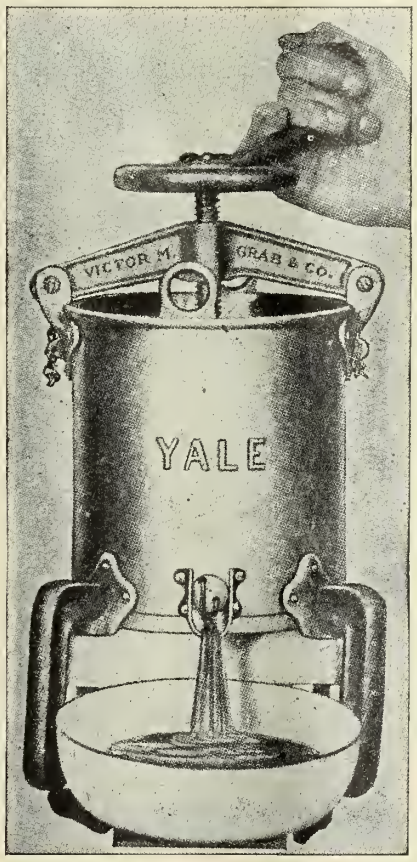
This illustration shows the actual size of holes that may be cut with the leather punch blade.



finely ground and polished. You have paid $1.00 or $1.50 for a knife not as good as this. This wonder knife is built for practical use, not filled with nic-nacs, as is the case with most combination knives. Special care is taken to make the knife sufficiently strong for use of farmers, fruit growers and stockmen. It is no more clumsy or awkward to carry in the pocket than an ordinary three-bladed knife. With this knife you can make a round hole of any size in the thickest leather more easily and more quickly than with a belt punch.

This knife will be sent you free if you will remit us $1.00 for one year's subscription or $1.50 for two years, $2.00 for three years, or if you will send us one new subscription at our regular rate, which is $1.00.

The Fruit-Grower and Farmer,
St. Joseph, Missouri



A Beautiful Fountain Pen

Everyone needs a Fountain Pen. We are going to give away hundreds of them within the next few weeks and we want every reader to be sure and get one. The Fountain Pen is extra large size, made of hard rubber has a highly polished barrel with screw section, new style cap, filled No. 6 14-karat gold-plated velvet point. You will have use for it many times during every day, and it is the most convenient thing you can carry. Each pen is packed in a separate box complete with filler and is ready for instant use.

It will be sent free, prepaid, if you will remit $1.00 for one year's subscription, $1.50 for two years, $2.00 for three years, or if you will send us one new subscriber with the remittance of $1.00, it will be sent free.

The Fruit-Grower and Farmer,
St. Joseph, Missouri

Yale Fruit Press

This Fruit Press is the best thing of the kind on the market, and we are offering the four-quart size, which sells at $4.00. You should have one of these presses for making jams, jellies, grape juice, cider, wines, ices, pressing fruit and vegetables, meats, etc. It is so simple that a child may operate it. By means of a crank handle attachment, you can easily place the contents of press under 2,000 pounds pressure.

This will be sent direct to you by freight if you will send us four new subscriptions at our regular rate of $1.00 each.

THE FRUIT-GROWER AND FARMER, ST. JOSEPH, MISSOURI

Field Meetings for New Jersey Fruit Growers.

The summer meeting of the New Jersey Horticultural Society was held in two orchards, the morning meeting, with luncheon, being held at Hope Farm, owned by H. W. Collingwood, editor of The Rural New Yorker, and the afternoon meeting in the orchard of Tice Brothers, about two miles away. This outdoor meeting was so successful that it is said that the society will always hold its summer meetings in the orchards and fields hereafter.

Mr. Collingwood is testing the sod-mulch plan of handling an orchard on some cheap hillside land in Bergen County, and the visitors were much interested in the results of his work. There was a great difference of opinion as to the practicability of the sod-mulch plan. Some persons believed it was all right, under Mr. Collingwood's conditions, but others insisted that it could not be made to return greatest profits, notwithstanding the cost of growing a four-year tree, including the first cost of the tree, was given as 60 cents each.

At the Tice orchard exactly the opposite plan is followed, for every foot of ground is cultivated. All fruit trees are headed high, with rows far apart, and vegetables of various kinds are grown as inter-crops. This year the fruit crops are short, but the soil is producing fine crops of vegetables for market. This intensive cultivation calls for liberal fertilizing, of course.

B. H. ALBEE.

New Jersey.

A Remarkable Book.

The Hoosier Stove Company, of Marion, Indiana has just published a catalog that is so chuck full of interesting matter, from cover to cover, that everybody who sees it finds something worthy of more than passing notice. The Hoosier foundries are the largest and best equipped foundries in the United States devoted exclusively to the manufacture of household cooking and heating stoves. Hoosier stoves and ranges are shipped to every corner of the world.

A significant fact in connection with the history of this remarkable business is that every Hoosier stove and range that has ever been shipped from their factories has been sold subject to thirty days free trial with a money-back guarantee. Though their products have been consigned to every section of the country and to points outside the boundaries of the United States, they have never had a dispute with any of their thousands of customers. Hoosier quality is the backbone of Hoosier advertising.

The Hoosier Book will be sent free on request to any address in the world. Address Hoosier Stove Co., 260 State St., Marion, Ind.—Adv.

Aids Growers to Sell Crops.

The Missouri State Board of Horticulture expects to continue the work begun last year of helping apple growers to find buyers for their crop. Many Missouri growers were materially benefited through the efforts of the board last year, although the work was taken up quite late in the season. It is the purpose of the board through its secretary to keep a list of all growers who desire assistance, and to try to induce buyers to go into those districts where apples are to be had.

Any grower in Missouri who desires this aid has only to write to the Secretary State Board of Horticulture, at Columbia, stating quality and number of barrels or acres he has for sale, and everything possible will be done to find a buyer for the crop. Those having small orchards are particularly urged to take advantage of this opportunity, as the only expense to them will be the cost of writing to the Secretary's office.

Get your neighbors to subscribe.

Overland 1913

$985

Overland 1913

Completely Equipped F. O. B. Toledo

This Completely Equipped, Powerful, 30-Horsepower, 5-Passenger Touring Car

Here Are a Few of the Big Features:

Self Starter
30 Horsepower
5 Passenger Touring Car
110-inch Wheel Base
Timken Bearings
Center Control
$50 Remy Magneto
$50 Warner Speedometer
$50 Mohair Top and Boot
$25 Clear Vision Wind-Shield
$25 Prestolite Tank

THERE never has been such an astonishing automobile value offered to the American farmer. Study the specifications—the detailed values. See the unusually complete equipment—everything possible and practical for an automobile. Remember the thorough and fine Overland construction and you'll get a good idea of this exceptional worth. $985 for this complete, big, powerful car. No extras; nothing additional to buy but gasoline. Ready for service the minute you get it. This car, at this price, smashes all previous records. It even totally eclipses our 1912 values, which a year ago baffled the world. 40,000 Overlands will be made in 1913. This enormous jump in production makes possible this new car at this new price. As our production goes up, prices come down, as has been shown in each preceding year.

In this age of rapid progress it is sometimes difficult to grasp the full significance of an important, progressive manufacturing step, such as this car exemplifies. But when you sum up the extraordinary cold dollar for dollar value which this car offers, as compared to any and all competing motor car values, the giant economical manufacturing strength of the huge Overland plants is realized and recognized. It only proves the ability of this most powerful and efficient automobile factory.

Here we can but call your attention to the bare facts. This is the car—a big, powerful, beautiful, spacious, comfortable, self-starting, thirty horsepower, five-passenger touring car—fully equipped—all ready for night or day, rain or shine, service. Made of the best materials on the market, by the most skilled men known to the trade, and in the most efficient automobile shops in America. And the price is but $985.

We can make the positive statement, without any kind of a condition, that this is the automobile industry's record value.

This car can now be seen in any city in America. Over 2000 Overland dealers are waiting to give you your demonstration. Look up the one in your vicinity.

Write us at once for full information and a 1913 catalogue. Address Dept. FF. 39.

The Willys-Overland Company, Toledo, Ohio

Detailed Specifications—Model 69T

MOTOR—Four-cylinder, cast separately. Bore, 4 in. Stroke, 4½ in. Horsepower, 30.

IGNITION—Remy Model R. D. Battery and Magneto—two sources of current.

COOLING—Water cooled. Thermo-Sypnon Cellular Radiator.

OILING—Splash system for crank and cam shaft bearings. Cylinder and timing gears oiled with Kinwood force feed oiler.

CAM SHAFT—Carbon steel drop forged, three bearings.

CRANK SHAFT—Carbon steel drop forged, five bearings.

CONNECTING ROD—Carbon steel drop forged.

MAGNETO SHAFT—Drop forging.

PUSH ROD—Crescent drill rod steel.

CARBURETOR—Model L Schebler.

CENTER CONTROL.

FRAME—Channel section—cold rolled steel.

SPRINGS—Front semi-elliptic.

TRANSMISSION—Selective. Three speeds forward and reverse. Annular bearings.

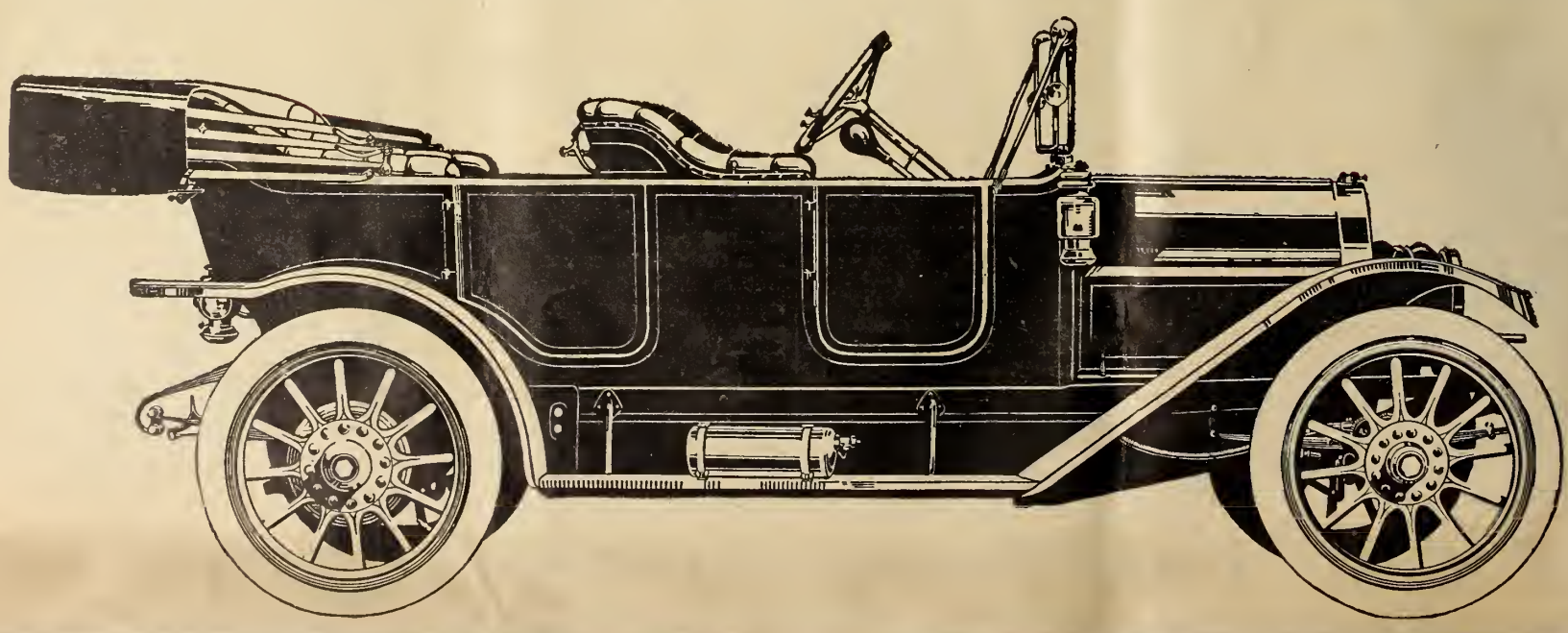
FRONT AXLE—Drop forged.

TIRES—32x3½ Q. D.

FINISH—All bright parts nickel plated, with black trim.

BODY—Overland blue; wheels gray.

EQUIPMENT—Mohair top and boot; Warner Speedometer; Wind shield; Prestolite tank; Self-starter; five black and nickel lamps; tire irons; robe rail; foot rest; tool kit and jack.



VOLUME 23 OCTOBER, 1912 NUMBER 10

The Fruit Grower and Farmer

The National Farm Magazine ST. JOSEPH, MO.

LIBRARY UNIVERSITY OF ILLINOIS URBANA ILL.

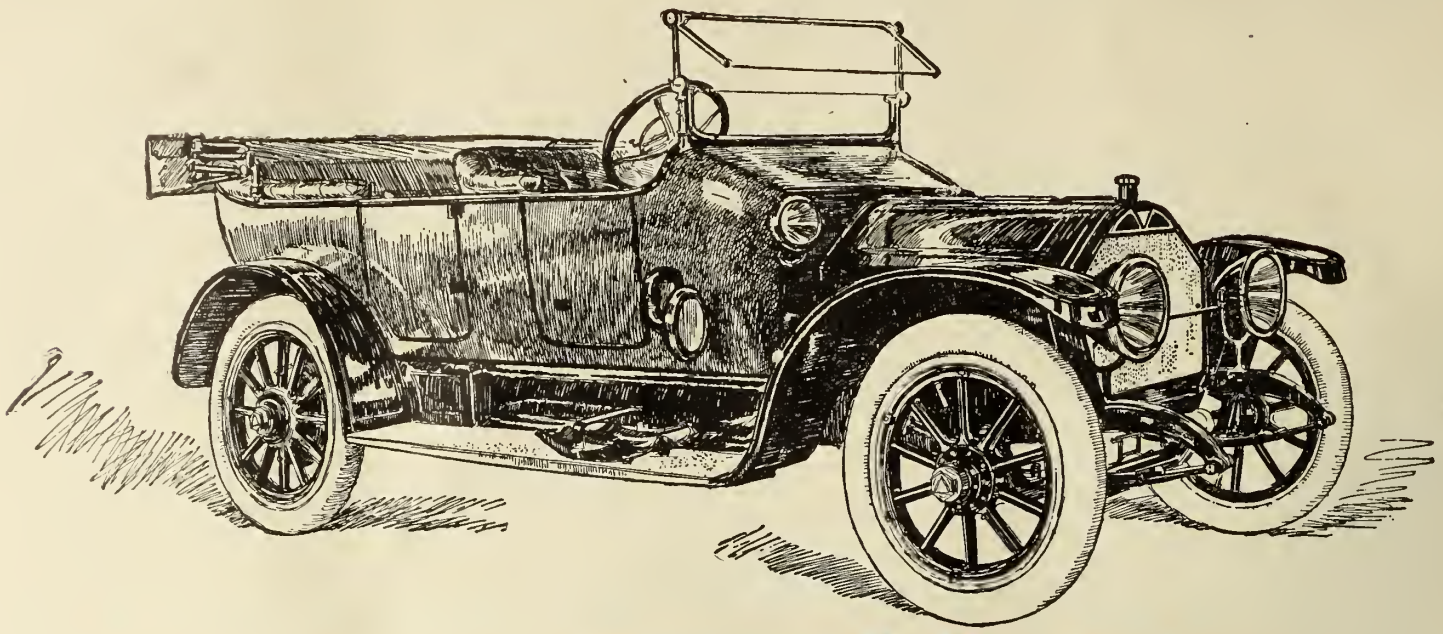
Trade Mark, Bro. Jonathan

Title Registered in U. S. Patent Office. Copyrighted, 1912, by The Fruit-Grower, St. Joseph, Mo.

Ten Cents a Copy
One Dollar a Year

New HUDSON "37"

Furnished Complete—No Extras to Buy



Not Even Howard E. Coffin Could Build Such a Car As This

Everyone knows that Howard E. Coffin is the Master Automobile Designer of America. He has built more successful four-cylinder cars than has any other man.

But, working alone, he is not capable of building an automobile equal to the New HUDSON "37."

A New Idea

For more than two years Mr. Coffin has been organizing this staff of engineers. There are 48 now. They have been gathered from all the automobile building nations—from France, Germany, England, Belgium and Austria. They came from 97 different factories. Combined they have had a hand in building more than 200,000 cars.

It is carrying out the idea of team work which is the foundation upon which all successful concerns are now built.

Experts specially fitted to do certain kinds of work combined their knowledge. Therefore the HUDSON "37" represents more than that which any one man could do. Even Mr. Coffin, with his wide knowledge and recognized ability in creating new ideas, would fall short in an endeavor to build a car equal to the HUDSON "37."

Automobiles have heretofore been designed usually by one man, just as Mr. Coffin, in all his previous cars has depended principally upon his own ability.

Into the cars of any one man is combined the experience and ability of the individual. There also is incorporated into such cars all the errors and hobbies, some of them impracticable, that any individual is very apt to overlook.

Are Mistakes Probable Under Such Conditions?

We fortify ourselves against error by focusing upon every detail the combined skill and experience of as many experts as we can obtain.

We do not limit ourselves. Whenever a man was found who can do work better than any one else and we have need for such work, that man was induced to join this organization.

That is why there are 48 engineers in this company—the largest number employed by any automobile manufacturer in the industry, and that is why HUDSON cars go out without mistakes. That is why there has been no error in judgment. Experience is not bought at the expense of the buyer after the car is in his hands. It is paid for out of the combined experience of the men who build the car. We pay it in salaries and not in replacements. Yet many of these men are substantially interested in the Hudson Motor Car Company.

The Hudson Motor Car Company is not owned by individuals who do not contribute to the success of the business. With the exception of one holder of a small amount of stock, everyone interested in this Company is actively engaged in its operation. Consequently no earnings must be made for brains that are not responsible for those earnings.

There is no large overhead—no water. That accounts, in addition to the value of brains in the engineering—in addition to the elimination of error, for the fact that in the HUDSON '37" is given a quality not obtainable in any other car and never possible under any other conditions.

Electric Self-Cranking—Electrically Lighted

Some Will Advise You to Wait

Some may say to you "The HUDSON '37' is a new car. Wait and see what it does during its first year. Get some older car—one that has been developed slowly, that has been improved year after year but which is a radical change from the leading engineering practices."

That was sound advice when no builder had had experience. It is sound advice as applied to any car built by any one man. It does not apply to the HUDSON "37" which is the result of the experience of these 48 men gained in 97 factories in building over 200,000 cars.

What These 48 Men Have Done

The HUDSON "37" is electrically self-cranking and electrically lighted. It is fully equipped; has 12-inch upholstery, top, rain vision windshield, a motor which develops 37-43 horsepower, speedometer, clock, 36x4 inch wheels, 118-inch wheel base, tools and other equipment.

Therefore it has the best quality we know how to produce. Every detail of luxury is developed to the highest degree. The car is entirely operated from the driver's seat. Lights are controlled from the dash. All oiling places are conveniently located.

The price of either the Five-Passenger Touring Car, the Torpedo or Roadster is $1,875, f. o. b. Detroit.

See the Triangle on the Radiator

HUDSON MOTOR CAR COMPANY

7512 Jefferson Avenue, Detroit, Michigan

No. 166

After 60,000 Cars

By R. E. Olds, Designer

I have built to date over 60,000 cars.

For 25 years I have watched their performance. I have found out and corrected a myriad shortcomings. I've acquired a world of caution.

Some say I'm "old-maidish"—too careful, too slow. But I call these things standards. I've made them my code.

My Latest Extreme—Big Tires

The new Reo the Fifth—out Oct. 1—is equipped with 34x4-inch tires.

That is 22 per cent greater tire capacity than I ever have used on a car of this size. Yet this car was always much over-tired, compared with usual standards.

These oversize tires add 30 per cent to my tire cost. But they add 65 per cent to the average tire mileage. They should save you in tire waste some hundreds of dollars during the life of the car.

Remember this fact when you come to compare cars. The tires on Reo the Fifth are now 34x4.

Make Some Other Comparisons

In judging cars, in these days of close prices, it is very important to make other comparisons.

There are dollars saved sometimes which cost buyers ten dollars. What you want is final economy.

Watch points like these:

Reo the Fifth has **190 drop forgings.** All makers use some of them to get lightness and strength. But Reo the Fifth has 190. And its racy lines, its lightness and strength are due largely to those costly forgings.

My springs are **two inches wide.** Each spring has **seven leaves.** The front springs are 38 inches long—the rear are 46.

I use **fifteen roller bearings**—11 of the Timken, 4 of the Hyatt High Duty.

Every important bearing has **bronze bushings**—even the smallest of them.

For safety's sake I use **14-inch brake drums.** I use a centrifugal pump.

I use a $75 magneto, to insure a hot spark when the car runs slowly. You can start on this magneto.

My carburetor is **double heated**—with hot air and hot water. So poor gasoline can't give trouble.

For big margin of safety, every driving part in this car is built for **45-horsepower requirements.**

No Chances

I take no chances on any part of this car, for chances sometimes cost dearly.

Each lot of steel is **analyzed twice.** Gears are tested in a crushing machine, to stand 75,000 pounds.

Each engine gets **five tests**—about ten hours each. It is run for 28 hours in the chassis.

I limit my output to an easy capacity of 50 cars a day. So the cars are built slowly and carefully—no man is ever rushed.

Parts are ground over and over. Our factory system insures a thousand inspections.

Petty Savings

I abhor petty savings. I could save, perhaps, $50 to $75 per car in the finish and upholstering if I cared to skimp.

But I put on this car a special body which costs more than wood or metal. I save by this 50 pounds in weight, and the body takes a wondrous finish.

I give 17 coats to each body. The fenders, radiator, hood, etc., have two coats of rubber enamel baked on.

The upholstering is deep, and of genuine leather. It is filled with the best curled hair. The backs as well as the seats are filled with springs, to give you the utmost comfort.

Every part shows the final touch. Even the engine is nickel-trimmed. I believe that folks like these perfections.

Center Control

Reo the Fifth has my center control—a single light handle, out of the way, which does all the gear shifting by moving **three inches** in each of four directions.

Both brakes are operated by foot pedals. So there are no levers to clog the front doors.

The driver sits on the left side, as in electrics, close to the cars he passes. Yet the gear-shifting lever is at his right hand. Note how many great cars are following me in this. The old way of driving will be soon out of date.

Do These Precautions Pay

The result of all this is that Reo the Fifth sells on a mighty small margin. I am keeping the price under $1,100, with all the new features, including these big tires.

Our profit per car is now a very small item, despite the fact that we make every part ourselves.

Yet there are cars which, at passing glance, seem to undersell this car.

I have told you the facts, so you may judge for yourself if these are things which you care to go without. Would you wish me to save you a little on price by trebling your cost of upkeep?

I am sure you'll say no. I am also sure that the time is coming when most cars must be built like this. Men won't have them otherwise.

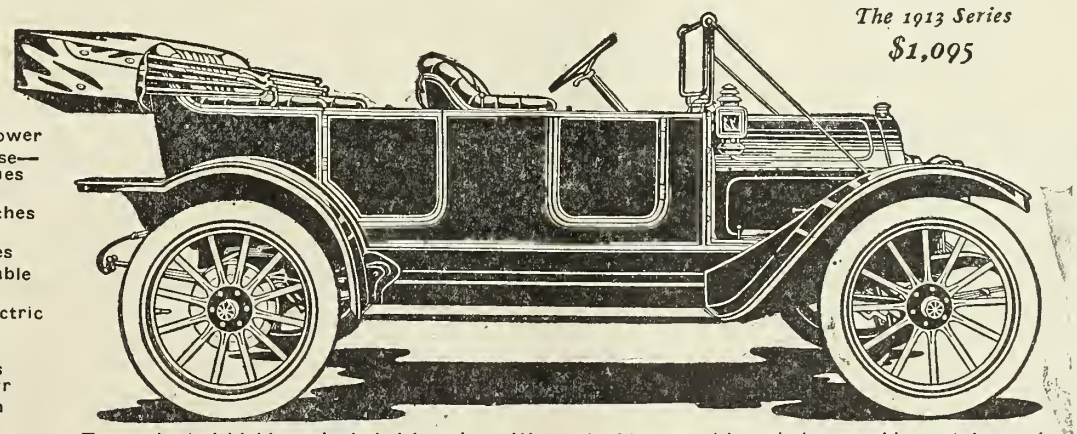
Here's the greatest value any man can give you in a car. If you want such value I want your trade. And you'll be very glad, in years to come, that you picked a car like this.

In 1,000 Towns

A thousand dealers in a thousand towns now offer this new type of Reo the Fifth.

Our 1913 catalog pictures all the details, and shows three styles of bodies. Write us for it now.

Reo the Fifth
The 1913 Series
$1,095



30-35 Horsepower
Wheel Base—112 inches
Tires—34x4 inches
Wheels—34 inches
Demountable Rims
Three Electric Lights
Speed—45 Miles per Hour
Made with 2 and 5 Passenger Bodies

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip cover, windshield, gas tank for headlights, speedometer and self-starter—all for $100 extra.

R. M. Owen & Co. General Sales Agents for Reo Motor Car Co., Lansing, Michigan

Canadian Factory, St. Catharines, Ont.

(107)

Stark Delicious By The Car-load

Bring $7.00 Per Box

Sell at Retail for $13.00 Per Bushel in Chicago

Read this startling statement from the Western News of Hamilton, Mont. In the Bitter Root Valley, as in all Apple Sections, this wondrous apple is the orchard sensation. Its marvelous beauty and its unrivaled quality insure for it always a price far in advance of any other apple:

"J. F. Sullivan, produce man for the Valley Mercantile Company, left Tuesday for Chicago with a car-load of Delicious apples which are sold at $7.00 per box. They belong to Sullivan & Brooks and are bringing $13.00 per box at retail in Chicago."

From the Western News, Hamilton, Mont., Jan. 10, 1912.

Now, Mr. Orchard Planter, let's reason together for just a minute. Stark Delicious will do for you just what it did for the man who grew the apples in above shipment. It has every good point that an orchardist wants in an apple: Absolutely best quality, no superior as a shipper, and with proper care will keep till apples come again; strong, vigorous, healthy in the orchard, as hardy as an oak, bears young and every year. In every orchard section from the Pacific to the Atlantic and from the Great Lakes to the Gulf it is fruiting perfectly. By all means YOU should plant it. Get your share of Stark Delicious profits.

Why We Use Trade-marks

We have trade marked Delicious and other valuable Stark Bro's sorts. We do this not only for our protection, but for yours as well. While these trade-marks do not cost you one cent at tree-buying time—for Stark Delicious costs you no more than Jonathan, Grimes, Stayman and other sorts—they are a guaranty to you of genuineness. Look out for bogus trees of Delicious; some will doubtless be offered. Don't you make the mistake of buying something somebody tells you is the same thing. Your land is too valuable, your time is too precious to take these big risks. Come to headquarters—Louisiana, Mo., for trees of the genuine Stark Delicious.

Fruiting from Massachusetts to Oregon

You will recall that April storm two years ago—a blinding sleet storm followed by a regular winter freeze that not only destroyed fruit buds and foliage but killed many trees outright. Delicious came through this uninjured. Last winter great damage was done to fruit trees of all kinds in this section, some of the kinds we had supposed to be entirely hardy being destroyed. The thermometer went down to 40 degrees below zero. Delicious was not injured in the least. A late bloomer here—a decided advantage. We have seen it fruiting from Massachusetts to Oregon, and it is a top-notcher in every case.—Thos. F. Rigg, Horticulturist, Hardin Co., Iowa.

55 Degrees Below Zero—No Injury

I like Delicious better than any other apple I ever ate. Not only is it fine in fruit but tree is hardy and so healthy. Last winter was the coldest winter I remember. Just think of it, 55 degrees below zero! I lost nearly all of my trees, but Delicious came through all right. Even McIntosh Red is dead.—R. J. Wiggins, Elmside, Quebec.

Three Varieties That Are Winners

For fancy high quality for southern West Virginia, the three most valuable sorts are Delicious, Grimes Golden and Stayman. None better than Delicious, taken every way. Tree bending with fruit; deep, bright red; uniform, good size; does not drop from tree.—C. S. Scott, Monroe Co., West Va.

Does Well in All Apple Sections

Delicious full this year. Finest quality known; beautiful, hangs on during dry weather. Long keeper, best commercial variety, stands handling well. Tree strong grower, annual bearer, does well in all apple growing sections.—John Cottle, Washington Co., Ohio.

A Certain Future in the Shenandoah Valley

Delicious has a certain future in the Shenandoah Valley of Virginia. In our orchards they show size, shape and color equal to the western exhibits that I have seen at apple shows. We like the way the Delicious tree grows—upright and with strong, stubby fruit wood.—H. M. Magie, Augusta Co., Va.

President Dalton Visits Delicious Orchard

I consider Delicious the grandest apple on my place. One of the finest growing trees, and always has a crop if there is half a chance to bave a crop. Col. Richard Dalton, president of the Mo. State Board of Horticulture, visited my place last week to see Delicious in fruit; he was delighted with the beauty of the tree and the splendid crop of large apples.—C. M. Fette, Marion Co., Mo.

Pennsylvania Delicious Keep Till April

Delicious is all you claim for it, a great acquisition for the eastern grower. Witb me it keeps easily until April.—R. M. Adams, Lancaster Co., Pa.

We have just issued an eight-page Folder that will interest you. It tells what growers in all parts of the country think of Stark Delicious. If you expect to plant a single tree this season you should read the opinions of these men. Just say on a postal card: "SEND ME ONE OF YOUR STARK DELICIOUS FOLDERS." The very first mail will bring it to you.

Stark Bro's N. & O. Co.

LOUISIANA, MO., U. S. A. BOX 200

(Established 1816)

WM. G. CAMPBELL
General Manager
JAMES M. IRVINE
Managing Editor
ERNEST H. FAVOR
Horticultural Editor
FLOYD B. NICHOLS
Agricultural Editor

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri

The Fruit-Grower and Farmer

"THE NATIONAL FARM MAGAZINE"

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Subscription $1.00 a Year

ADVERTISING RATE: 50 Cents Agate Line; $7.00 Inch

Volume 23 | St. Joseph, Missouri, October, 1912 | Number 10

Selling the Produce At a Profit

Kansas Growers Organize and Solve a Difficult Marketing Problem

Seven years ago a group of farmers near a little town on the eastern border of Kansas became discouraged over the returns they were receiving for their produce. They were berry growers and produced quantities of luscious strawberries, raspberries and grapes. But their profits from the selling methods they had been using had dwindled until there was nothing left. It was a region where the soil was deep and fertile, where the fruits produced in luxuriant quantity, and where the beauty of the green, rolling hills overlooking the mighty Missouri River added a charm that is unsurpassed.

This group of farmers, twelve in number, heard of the successes which were being made by co-operative marketing organizations and conceived the idea that a similar organization would solve their own marketing problems and make it possible for them to get some of those elusive profits which had been passing them by. With this idea in mind they organized under the name of the Wathena Fruit Growers' Association. Seven years have passed since then. The business done by the association in its first year was small, but satisfactory. In 1911 more than one hundred thousand dollars' worth of berries were handled and the business this year gives promise of amounting to more than $150,000. The membership has increased to 150, and about two-thirds of the berries produced in the territory surrounding Wathena are handled by the association.

These berries are packed in crates holding twenty-four quart boxes. Grapes are packed in seven and eight pound baskets, and peaches in baskets holding one-third of a bushel. Apples are shipped in barrels, and every package, no matter what kind, carries the label of the Wathena Fruit Growers' Association, on which is stamped the name of the grower. This enables the consumer of the fruit to know who grew and who handled the fruit, and makes it easy to fix the blame for improper packing.

The growers deliver the fruit to the station at Wathena, where it is examined by the association's inspector. The company has nothing to do with the produce until it is delivered ready for shipment. There is but one grade of every kind of fruit. This is one of the weak points of this association, as this system does not encourage the production of better fruit by placing a premium upon it. There is only one standard, and the fruit must come up to that. If it exceeds that standard ever so much, there is no extra profit for the grower. Members of the association realize this fault, and a change will undoubtedly be made, so as to grade the berries on the quality basis, as this plan has been found by other associations to be the most satisfactory.

W. R. Martin, general manager of the association, in speaking of this system, says: "Grading the berries according to quality would undoubtedly encourage our growers to produce better fruit, but we think the expense of grading would be considerable, and while we would get a higher price for our best grade than we now get, we would also receive lower prices for the poorer grades. As it is, we have set our standard high and do not allow any fruit to pass which is not strictly high class. I do not believe we would get any greater returns the first few years, if we graded on a quality basis, but we would encourage our growers to produce better fruit, and in that way it would probably pay in the long run."

Most of the orders on which the fruit of the association is sold are received without much expense. The company is well known and has such a good reputation among the fruit buyers of the country that usually there is no trouble in disposing of all its produce at the best prices. Very little is done now to announce the fruit that is for sale. This year one member of the association spent about a week visiting some of the larger city markets, and in addition the association sent letters to many of the large buyers of the country telling the size of the various crops to be moved, and this ended the advertising campaign. All of the fruit is sold on track at Wathena, and the buyer pays the freight. However, the association always agrees to deliver the fruit in good condition, and pays for all losses in transit.

Wathena has good shipping facilities, as two railroads, the Grand Island and the Rock Island, pass the warehouse of the association. Much of the fruit is shipped by express, and two men from the central offices of the express companies are at the town during the fruit shipping season to see that the berries are handled well and that all shipments are made promptly. The principal markets for the association are to the west and north. Much of the fruit goes to St. Paul and Minneapolis and other cities in that section, while there are many shipments made to Colorado when the markets are good. St. Joseph, but five miles away, and other Missouri River cities consume a large part of the fruit produced by the Wathena growers.

After the fruit has been passed by the inspector, it is entered on the books of the association to the credit of the member, who can get his money at any time. For the small fruits, the growers are paid about twenty-five cents a crate less than the selling price, and the prices on all of the other fruits are reduced in about the same proportion. This margin is used to pay the expenses of the office help, the losses on fruit damaged in shipment, and any other expenses the company has. At the end of the season the money that remains is divided among the growers in proportion to the amount of fruit they have sold to the association.

About $26,000 was received for the strawberry crop this year. The crop was rather short. An average of about $1.25 a 24-quart crate was paid to the growers, while the average selling price was about $1.50 a crate on board the cars at Wathena.

The crop of raspberries was good

(Continued on page 36.)

INTENSIVE FARMING IS THE COMMON PRACTICE ON THESE ROLLING HILLS.

Showing Long Islanders How to Farm

How an Eastern Railroad is Encouraging Better Farming At the Nation's Front Door

By James M. Irbine, Managing Editor

At various times articles have appeared in The Fruit Grower signed by H. B. Fullerton, Medford, L. I. Mr. Fullerton has charge of an experiment station, established by the Long Island railroad, toward the Eastern end of Long Island, and is demonstrating what can be done there on land which, a few years ago, was considered worth but little.

The work of the Long Island railroad is similar to that which bas been done by a number of Western railroads, and which has lately been taken up by some of the Eastern roads. The company has no land to sell, but in order to encourage better culture of the soil, it has established these experiment stations to show just what can be done. The New York Central Lines have established several of these "demonstration farms" in New York State, and tbe Long Island road has two along its lines, which extend the full length of Long Island.

It seems strange that any kind of land within two hours' ride of New York could be bought for $2 to $5 per acre, but until recently there was a lot of land down on Long Island which could be bought at this price. Much of it was originally covered with pine timber, tbe larger trees having been removed. The soil isn't strong, it must be admitted, and one might be justified in passing it by. If one wants to grow corn or other general farm crops, there need be no time wasted on this sandy soil down on Long Island. But tbe crops which are produced show that vegetables and fruits can be profitably grown there, and Mr. Fullerton's purpose is to demonstrate this fact.

The soil is sandy-loam, but those who know something of geology say that it is not beach sand, but, instead, is of glacial origin. It is easy to work and responds readily to proper treatment; it needs both nitrogen and humus, so Mr. Fullerton has relied on barnyard manure and leguminous crops to supply this deficiency. It is also advisable to add water at times, and an irrigation system has been installed. A fine flow of pure water is obtained from wells, the water being pure and soft, and Mr. Fullerton uses a kerosene engine to fill an elevated tank, which supplies the water for the irrigation system. The Skinner system is used, but instead of having the lines of pipes elevated so that one can use a horse in cultivating under them, these rows of pipes are near the ground, and cultivation is only one way, and that is parallel with the lines of pipes. Mr. Fullerton finds this a very satisfactory way to water strawberries and shallow-rooted vegetables of all kinds, such as lettuce, radishes, etc. The worst drawback to the land is the lack of drainage. At Mr. Fullerton's place the soil is very flat and drainage is of necessity very poor.

In establishing tbis station it was the purpose of tbe Long Island railroad to test all kinds of truck crops to see just what can be produced. In this respect the station has been a success, for Mr. Fullerton has not only tested various crops, but has successfully marketed the same. At the time of our visit be was sending to the city the "home hampers," whicb have been described in The Fruit-Grower several times. These are simply packages of vegetables which are shipped by express direct to tbe homes of consumers who are willing to pay a fancy price for vegetables wbich are known to be strictly fresh.

The style of hamper used this season is somewhat different from those of other years; in fact, it is the six-basket Georgia peach carrier. Tbis is a crate bolding six veneer baskets, the latter holding practically one peck each. Mr. Fullerton showed us a number of these hampers packed for shipment. One basket was filled with peas, anotber with beans, one with rhubarb, one witb bead lettuce, one with radishes and young carrots combined with some parsley and onions for soups, and the last basket beld two quart boxes of strawberries, the boxes being placed in the half-peck basket so that they were firmly held. Over each basket was placed a sheet of green waxed paper, excluding dust and part of the light, giving the crate an attractive appearance.

This package was shipped by express direct to the home of a city purchaser, who paid $1.50 for it, delivered. Deducting express charges, this bamper netted tbe sbipper somewhat more than $1. The consumer has no voice as to what his hamper shall contain; he simply pays his money and takes the vegetables that are seasonable. Mr. Fullerton says that at first customers wanted to specify what their hampers should contain, but that where every bamper had to be packed with different vegetables there were too many chances of making mistakes in shipping them, so that all hampers sent out each day are alike.

This plan wouldn't work at all in many places; there would be too few peas, for instance, for a good-sized family, but it must be remembered that families in New York are standardized; in certain sets of society where such packages of vegetables are likely to be sold, there is seldom more than one child, and more often not any, so that the quantity of each kind of vegetables is likely ample. Of course, the contents of the hamper vary with the season, and a little later sweet corn and tomatoes will replace rhubarb, peas, etc.

Mr. Fullerton says that these hampers have become very popular, and he already bas orders and cash to pay for more than can be supplied this season, even though some of tbe neighbors are supplying part of tbe produce needed.

Mr. Fullerton is growing all kinds of vegetables and small fruits, as well as testing a number of varieties of graps, peaches, pears, plums and apples. He plants one-year apple trees exclusively, and trains the trees to the open-center form. He has been very successful growing grapes, and delieves this fruit will be a money-maker.

We were interested in a small patch of alfalfa which is doing well. At the time of our visit, June 20, it had been cut the first time, the crop being at the rate of three tons per acre for the one cutting. This field was planted in the spring of 1911, and the best stand was secured where the soil was inoculated with soil from another field, in which alfalfa had been successfully grown. Mr. Fullerton believes that where fields can be inoculated with alfalfa soil this crop is a money-maker, for the bay finds ready sale at fancy prices. If alfalfa can be generally grown, as he believes, a great field should be opened up for dairying, for at present nearly all the milk and butter used on Long Island comes from the mainland, and in some cases the milk is kept in New York several hours before being sent over to Long Island.

We asked Mr. Fullerton if he had any trouble in curing alfalfa hay so near the seacoast, where the humidity is frequently very great, and be said he had not, for he has a plan wbich permits the hay curing very largely in the stack. This consists of a platform about fourteen inches from the ground, covered with wire netting with a quarter-inch mesb. This keeps the hays from the ground, and at the same time allows the air to circulate freely. The stack is built around a chimneylike affair consisting of a skeleton frame perhaps a foot square and as long as the stack is high; over this framework the wire netting is tacked, and the hay is piled around it to the top. The platform keeps the hay from the ground, permitting air to enter from below, and it passes out through the center of tbe stack by means of this center-draugbt cbimney. Alfalfa can be cut today, raked into windrows in the afternoon and stacked tomorrow where this plan is used, and Mr. Fullerton has bad no trouble from the hay heating or from improper curing. A canvas cover protects the top of the stack from the weather, as well as the sides of the stack. Mr. Fullerton believes this plan is practicable on a large scale, and that it will help to solve the problem of curing alfalfa hay where there is danger of rain if it is left in the field after cutting too long.

The purpose of the experiment station of the Long Island railroad is being accomplished. Many persons visit the station to see what can be done, and some of them are taking some of the land and making it produce good crops. There are many parts of Long Island, of course, where trucking has always been an important industry, and Mr. Fullerton hopes that the right metbods will make what has long been a barren wilderness a veritable garden spot. He certainly has much ground for encouragement in the results already obtained. J. M. I.

A Delaware Tomato Canning Factory

More Than One Thousand Acres Needed to Supply the Produce for Catsup and Cans

By Floyd B. Nichols, Agricultural Editor

Seven thousand bushels of tomatoes a day were used this year by the canning plant of Stetson & Ellis, at Camden, Del., under the management of R. C. Barnard. More than four hundred men, women and children were employed in the preparation, canning and catsup departments, and some of the output is exported to countries of the Far East. Tbe plant is a model of cleanliness and nothing is wasted.

Tomatoes constitute the principal crop used by this cannery, and the bulk of the crop is grown under contracts which are usually made and signed in March. The factory supplies the seed of the varieties Stone and Paragon, at $3 a pound. More than one thousand acres were contracted for this year, and considerable quantities were bought in the open market. The prices paid this year were $10.00 a ton for August delivery, and $9.00 a ton for September. For those tomatoes bought on the open market a price of 22 cents a bushel basket was paid this year, and the baskets, by tbe way, did not hold quite a bushel.

When the tomatoes are delivered to the factory, they first are washed and scalded by machinery. They then are placed in 16-quart buckets on a "merry-go-round," which is a circular, revolving table. It has room for 150 persons around it. Most of the peeling is done by women and girls, who are paid five cents a bucket. After a bucketful is peeled, the foreman puts is on a moving belt and punches the card of the worker. Many of the expert peelers make $1.75 or more a day.

The belt carries the peeled tomatoes around to the filler, where they are placed in cans by machinery. Two women inspect them as tbey come from the machine and fill any which were not full. The cans then pass through the exhausting macbine to remove the air in the tomatoes. The top is then brushed off clean, and caps soldered on by machinery. An Ayrs capping machine is used, in which gas produces the heat. The tip hole—the opening in the cap through which the air escapes—is then closed by machinery, and the cans are ready for the processing kettles.

Up to 1910, No. 10 or gallon cans were the only ones this company packed. In that year, the factory began packing No. 3 cans. These bold 34 ounces, net. No. 2 cans, whicb hold 19 ounces, net, were packed this year for the first time. There was a strong demand for the smaller sizes, as the gallon cans are large for family use.

Processing.

Gallon cans are boiled in the process kettles for one hour. There are thirty of these kettles, and each bolding 63 gallon cans, immersed in water. After cooking, the cans are taken to the storage room where they are set in rows and left for a week. If, at the end of that time, none of them have swelled, they are labeled and packed, ten in a crate, and are ready for shipment.

The packing process for the smaller cans is about tbe same as for the gallon cans; however, they are cooked for only 35 minutes, and tbey are

packed 24 in a case. Most of the product of this factory is still placed in gallon cans, which are made in a can factory on the grounds. The smaller cans and the cases in which they are packed are bought ready-made from the Sanitary Can Company. The can department of the Stetson & Ellis factory is in operation from January to June. In speaking of the cans, Mr. Barnard, the manager, said: "The reason why we make our own gallon cans is because we cannot buy good cans of that size. We can buy gallon cans for $3.00 a thousand cheaper than we can make them, and we tried to use them for a season, but our percentage of spoiled cans was too high. So we now make our own cans, and the percentage of loss, both i our cans and the smaller sizes which we buy from the Sanitary Can Company, is very low."

The can factory employs a force of seven men during the six months it is in operation. A good canmaker makes four hundred cans in a 10-hour day. Every can carries the mark of the maker, and if the tomatoes spoil, this

Making the Catsup.

Good quality tomatoes are used for this purpose. They first are run through a coring machine, which picks out the cores. This machine has been perfected recently and it does good work. The tomatoes must be placed in a certain position on an endless belt, and the machine does the rest.

After the tomatoes leave the coring machine they are inspected and then go to the washing machine. In this machine, they are washed thoroughly by warm water kept in agitation mostly by air. From here the tomatoes pass through a grinding machine, which reduces them to a pulp, and then they go to large kettles, where they are boiled for twenty minutes. Then the pulp passes through a "preparer," which removes the seeds and skins, and the juice is forced by a rotary pump to the Libby plant.

After it reaches this plant it is cooked again in large kettles and all onions, spices and other ingredients found in catsup are placed in it. Then it passes through another "preparer," which removes all coarse matter. It is then bottled by a machine, which fills fourteen bottles at a time. Most of the catsup is placed in bottles which hold one pound, two and one-half ounces, but some is placed in gallon bottles for the hotel and boarding house trade.

After the bottles are filled, they are inspected and refilled if the machine has not done its work properly. The bottles are corked by a machine, a ? pasteurized in a large machine similar to the circular ovens bakers use. Here the catsup is heated to 198 degrees F. for one hour and fifty minutes to kill all germ life. The bottles are removed from the oven, cooled and wiped. The labels are then placed on them and they are crated ready for shipment.

Every effort is made in both the canning and catsup plants to keep everything in a sanitary condition. In the tomato peeling room, for example, everything is carefully swept out at noon, and at night all floors, buckets and machinery are scrubbed carefully. It takes a large amount of steam for a plant like this. The boilers have a capacity of five hundred horse power, 450 of which is used for heating and cooking. An engine of fifty horse power is used to run the machinery. There is an electric generator run by a seven horse power gasoline engine, and which furnishes the power for the electric lights. Of the four hundred or more people who work at the plant, one-third are women and girls. Men are paid 15 cents and hour, and boys and women 10 cents, without board. They work ten hours a day. All work is done by the hour, except in the peeling shed, where the pay is five cents a 16-quart bucket.

About 180 of the hands are Polish. They come from Baltimore and live in small shacks which the company has built for them. These people are good workers. In speaking of them, Mr. Barnard said: "They all want to work in the peeling shed where they are paid by the bucket. Here they can work hard and make money rapidly. About the only time they complain about anything is when we don't give them enough tomatoes.

The plant runs steadily about four weeks a season, and then on part time for several weeks more. As all of the members of the Polish families work in the factory—and the families are large—they save quite a bit of money by the end of the season. Most of the rest of the labor comes from around Camden.

The sales proposition has not been especially hard to solve. The company controls two other plants in Delaware. They have a sales manager in New York City. The product is sold direct to retailers in the cities of the East.

SEVEN THOUSAND BUSHELS OF TOMATOES A DAY ARE CANNED AND MADE INTO CATSUP IN THIS FACTORY.

mark is recorded. Thus the manager has a record of the makers of imperfect cans. If a man has too high a percentage of spoiled cans, he is not employed the next year.

There are practically no waste products in this plant. The peelings, ordinarily considered as a waste, are thrown into a "cyclone" machine, which separates the liquid and finer particles from the coarser. These coarser particles are hauled out on the farms and used as a fertilizer.

The liquid is sold to another company which has a plant on the grounds to care for it. It is pumped to this plant where it goes into large vats, the pulp floats and is eventually drawn through chutes to a hydraulic press. Here it is placed in sacks, pressure is applied and all the water is forced out. The pulp is then packed in barrels and sold, largely in non-tomato producing countries. It is used mostly to make the body for candies. The extensive use of tomato by-products for this purpose is comparatively recent. Much of the product of the Camden plant was shipped to Turkey and to the Far East.

Libby, McNeil and Libby, who are extensive makers of catsup, put up a plant on the grounds this year. The Stetson-Ellison factory has been furnishing them with 2,400 gallons a day of tomato juice. In addition, from 2,000 to 2,500 gallons of juice has been canned in five-gallon cans, which will be used in the catsup factory later.

The Hay Crop.

More attention is being paid to crop rotation every year in the West, and with this has come a desire to grow more grass and legumes. Perhaps you are trying to decide just what crop would do best in your section for pasture or hay.

The most important thing in selecting a hay crop is to get a crop that will grow well under your conditions. If the crop will not produce a good yield of feed it won't be profitable, of course. If you are in the corn belt, the selection of a proper crop is easy. For hay, and for most pasture purposes, the best crop to grow is alfalfa where the crop will make a good growth. If you can't grow alfalfa, try clover and timothy. Now, you can grow clover and timothy almost everywhere in the corn belt, and in many sections out of it, except where the soil is acid. But alfalfa is the crop to grow where it will make a good growth, for it will produce a little more feed of a higher quality than clover.

You think clover will not grow under the conditions on your farm? Well, perhaps it will not, but are you sure it has had a fair chance? In many sections of the West, notably in Kansas and Nebraska, the farmers used to believe the old fairy tale that some man with a queer mentality originated, that clover would not grow in that section. Many of the "old heads" knew, or at least, they said they knew, about many fields on which the clover had been tried, and always failed. However, farmers have tested out this proposition in the last few years, and have found the crop will grow, and there has been a big increase in the acreage of clover in that section.

But what kind of clover should one sow? Under most conditions, common red is the clover that will do best. Mammoth red clover is all right to grow on the poorer soils, and it has the advantage that it ripens more nearly with timothy than does common red clover. But on the richer land, mammoth red clover makes a rank, woody growth, and it will not produce hay of so good a quality as the common red. But no matter where you grow the mammoth red clover, every effect should be made to cut it promptly, for it becomes woody very fast.

Alsike clover will not make hay of so good a quality as the hay from either common red or mammoth red clover, but it will grow where these crops will not. Where the soil is subject to considerable overflow, or where the soil is very wet or contains acid, alsike will produce the best crop. But don't grow alsike on good land, for it will not produce so profitable a crop under these conditions as either mammoth red or common red clover.

The seeds of alsike clover are only about half so large as the seeds of the other clovers, and you will only have to sow half as much seed. In other words, one can get as good a stand by sowing four pounds of alsike clover seed as he can by sowing eight pounds of common red clover.

If you are in a good Kentucky blue grass section and desire to grow a permanent pasture crop, bluegrass is your crop. However, it is considerable trouble to get good seed unless you manage things right. Most of the failures in getting a stand of bluegrass is caused by poor seed. The government standard for the germination of bluegrass is 50 per cent; in other words, if half of the seed will grow under ordinary commercial conditions, the department of agriculture says it is good seed. Now, this poor germination is not caused by immature seed, but because the seed heats and spoils after it is cut. Bluegrass seed is about the easiest thing under the sun to heat. Don't purchase bluegrass seed until you have tested it and have learned how much will grow. If you don't do this, it is more than probable that you will make a failure of getting a stand.

Orchard grass is all right under timber conditions, but it usually does not do well under prairie conditions. The seed of this grass is costly. English bluegrass seed, which really is not bluegrass at all but is meadow fescue, does very well in eastern Kansas and where the conditions are similar. There also are other hay and pasture crops you can sow.

In the selection of the crop to grow for hay or pasture, or both, you should bear this in mind: It is always best to select a legume if you can use the crop, because it will add nitrogen to the soil, while a grass crop will not. Alfalfa is the best legume, with red clover as a very close second.

This is an age when apple grading machines are becoming popular. A machine for wiping and grading apples has just been invented by O. K. Porter, The Dalles, Ore. It is reported that with this machine two men can wipe and grade 2,000 boxes of apples per day

Fruit and Truck Growing in Delaware

The Rebibal of a Declining Industry. Nelw Varieties and Nelw Methods.

By James M. Irbine, Managing Editor

A few years ago, in an Eastern city, the writer met a banker of Wilmington, Del., who told an interesting story concerning the revival of the apple industry in little Delaware. This gentleman was in the business of lending money, and naturally kept in touch with land value and the earning capacity of farm lands. He said that time was when the apple and peach industry in Delaware was a very important one; a farm which contained a good orchard was considered good security for a heavy loan, and much money was loaned on this basis.

Finally peach yellows struck the peach orchards, and insects and diseases and short crops struck the apples, and the whole fruit industry seemed going to the bad. Just about that time, he said, a few orchardists began to market the fruit from trees planted a few years ago, of a variety introduced from the West; one man, having quite an extensive planting of this new variety, sold his apples for nine dollars a barrel, and then interest in apple growing was revived.

This new variety was the Stayman Winesap, originated by Dr. Stayman of Leavenworth, Kansas. It is one of the sad things connected with horticulture that Dr. Stayman tried hard to get his friends and neighbors to plant his variety, and that he died without seeing any considerable number of trees planted near home. But "a prophet is not without honor save in his own country," and Dr. Stayman's new apple, which he called Stayman Winesap, was extensively planted in the state of Washington—and, as explained to us by the banker, it practically saved the apple industry of Delaware, and it has also been extensively planted in Maryland, West Virginia and Virginia. When the growers began to make money from Stayman Winesap, they also gave their other varieties better attention and care, and now the industry is in a flourishing condition.

Recently we went down into "little Delaware" to see some of these orchards and to renew acquaintance with some members of The Fruit-Grower Family.

Delaware and Maryland, or at least that part of Maryland which is on the peninsula, comprise a great trucking district. The climate is very mild, crops are early, and with direct communication with New York, Philadelphia, Baltimore and Washington, it is not to be wondered that truck crops of all kinds are grown and usually bring good returns. There are several towns down the peninsula from which trainloads of strawberries are shipped daily during the season; at other places early potatoes, and later in the season, sweet potatoes are extensively grown; canteloupes are another very important crop. But our story was to tell of the apple industry, for we were a little late for the height of the strawberry and truck season.

Unfortunately, rain fell almost continuously on the day of our visit, in the vicinity of Wyoming and Woodside, and not as many orchards were visited as would otherwise have been. We are indebted to Mr. W. M. Dickson for piloting us around between showers.

The soil in the section visited contains considerable sand, and has a clay subsoil; this soil warms up quickly in spring, responds readily to good treatment, and the growers generally are progressive. It may be, as stated by our banker friend, that the Stayman Winesap gave new hope to the apple-growers, but when they began to properly care for their trees they also included the old Winesap, and these two varieties comprise the greater part of the planting, except that summer apples are now being extensively grown, and have been found very profitable.

Most of the growers have old Winesap, Stayman Winesap and a collection of summer varieties, Williams' Red and Fourth of July being perhaps two of the most popular and profitable. York Imperial is grown to some extent, and so is Rome Beauty, but the Winesaps seem to be the money-makers. The old Winesap has the fault here, as it has elsewhere in the humid districts, of being very subject to scab, but the growers fight it by proper spraying. This season, frequent rains interfered with spraying at the right time, and there is some complaint of scab, but generally the fruit is clean and sound.

Many of the growers use lime-sulphur and arsenate of lead as a combined fungicide and insecticide, but lately the use of atomic sulphur has become quite common, and this new fungicide has given remarkable results. Atomic sulphur is made by the Thomsen Chemical Company, of Baltimore, and has produced remarkable results as a fungicide, not only in controlling apple scab, but in preventing brown rot of peaches and blight on potatoes. It is used without any lime whatever, the sulphur being ground so fine that it readily mixes with water. It does not burn foliage, and Mr. Berckmans, of Georgia, recently told us that it had controlled brown rot on peaches in their orchards without the slightest trace of injury.

Stayman Winesap seems not so subject to scab as old Winesap, and this variety is being extensively planted, and the apples have established themselves in every market where they have been sold. Mr. Dickson is planting a number of early apples, such as Early Ripe, Yellow Transparent, Liveland Raspberry, Fourth of July, Williams' Red, etc. The summer apples are usually packed in what is known as Delaware hampers, holding somewhat less than a bushel, and the fruit finds ready sale to buyers who are willing to buy on track. Mr. F. C. Bancroft has planted some King David, and is pleased with this variety so far. Five-year trees bore two boxes of beautiful apples per tree.

Practically all the orchardists in the section visited practice clean cultivation until mid-summer and then plant a cover crop, crimson clover being the favorite crop, unless trees are making too much wood growth, in which case rye or some other nonleguminous crop is planted, to be turned under the following spring. The sandy soil needs nitrogen and vegetable matter, and this system of culture maintains soil fertility.

Few of the growers are engaged solely in fruit culture. Most of them grow some sort of crop for the canner, such as tomatoes, peas, etc., or they grow truck crops to be shipped North, as potatoes and canteloupes, or perhaps they are interested in general agriculture. At the time of our visit Mr. Dickson said he was intending to work about half his farm in fruits and the other half in agricultural crops; his wheat fields looked very fine and seemed as though they would yield as least twenty-five bushels per acre. He had a good field of potatoes, absolutely free from blight and injury by potato beetles, and can-

(Continued on page 39.)

YOUNG PEACH ORCHARD OF W. M. DICKSON, WOODSIDE, DEL.

Potatoes grown between the rows pay well. This field of potatoes had been sprayed with a combination of atomic sulphur and arsenite of zinc, and foliage was perfect, not a trace of blight or insect injury being visible.

A Seed-Growing Possibility

There is a big opportunity before the farmers in the southeastern part of Kansas, and in many other places for that matter, to produce a good, pure, high-yielding strain of soft wheat, for sale as seed. There is a very little bit of pure, soft wheat on the market today. In fact, the milling department of the Kansas Experiment Station never yet has found a field of pure, soft wheat in Kansas, and the members of the department inspect many of the best fields every year.

Most of the wheat in that section is badly mixed with from one to a dozen types of soft wheat, or of the hard, bearded types. As the result, the wheat is not of the highest class, and it does not make the best flour. The millers of this country are demanding that wheat shall be uniform, for they can't make the best flour from wheat that is not uniform. And it is right and proper they should demand uniform wheat, and pay a higher price for it than they do for wheat that is not so good.

In Kansas, hard winter wheat is grown much more than soft wheat, and the experiment stations of the state have done more work in improving this type than they have with soft wheat. Any farmer in the state can get pure, hard wheat, if he desires, but that is not true of soft wheat. Now there is a part of Kansas—the southeastern section—where the rainfall is greater than it is out in the big grain belt, that soft wheat can be grown better than hard wheat.

Until the last few years, there was not much wheat grown in that section, but now more attention is paid to crop rotation, and wheat is one of the crops that has been included in most of the rotations. This has produced quite a demand for good, soft wheat, and the demand has not been supplied.

There is big money in growing good, seed wheat, and there is a good market. You had just as well be getting $1.50 or $2 a bushel for wheat, if you will produce the required quality. The way to do it is this: This summer you should get the best seed wheat you can. The best way to do this is to write to your agricultural college, tell them just what you want, and get their advice on the proposition. Usually they can tell you where some good seed may be obtained. Of course, you will plant this seed on good ground and you will do your part in preparing the seedbed. Then, next year, go through the field and cut out all of the foreign types, and repeat this performance for several years. If you do this, a pure wheat may be obtained, in time. And a pure, high-yielding wheat sells for good money these days.

If there is a mixture of hard wheat with the soft wheat, the percentage will increase. The reason is this: Most of the hard wheat types are somewhat hardier than soft wheat, and they will stand the hard, unfavorable winters much better. Therefore, when a hard winter comes, the hard wheat lives through the winter better than the soft variety, and the percentage of the hard plants increase, because the number of the soft wheat plants have been reduced.

The demand for good, soft wheat will increase in the future, because more attention is being paid to crop rotation in the soft wheat districts. Wheat is a good nurse crop for clover, and there will be an increasing acreage sown just for this purpose. The man who can supply some of this demand will make a profit worth while.

National Apple Day is the third Tuesday in October. It is only one of three hundred and sixty-five other apple days, when you should eat apples, talk apples and do everything you can to get others to do likewise.

The Awakening in The Blue Ridge

Appalachian Farmers Realizing the Possibilities in Fruit Culture.

By J. O. Lewis, Tennessee

Startling, indeed, are some of the results obtained in recent years in horticulture and pomology in the great Appalachian Mountain section. It seems as if old Rip Van Winkle of the Appalachians has at last awoke. Not for twenty years has he slept on his rights, but for twice that length of time.

However, only during the past eight or ten years have the people of this section been made to realize the vast potentialities possessed by these rugged old hills, which the people have been wont to look at as mere mountains with no other mission than to form a rugged outline against the blue sky which they pierce, for fruit growing. So sharp has been the awakening that everyone has become interested, and the result has been that during the past five or six years thousands of orchards have been planted over, apples produced in this section have been sent to the far Western apple shows and have come away with the blue ribbons. Actually won on size and quality.

Even the old seedlings which have long been grown in this section, produce a flavor and acid excelling in quality most any other section. But with the advent of the new varieties, the fine commercial sorts, now growing in this region, imbibing the elements of soil so necessary to high quality and flavor, it is not going to be long before we lead the world in apple production, and of a quality that will command the highest prices.

Another thing of paramount importance is the fact that the crop rarely ever fails. Not in years has there been a season in which we have not had plenty of apples. We never have to resort to irrigation, the rains always being abundant; and where we lack in sunshine to give the color, we make up in texture and flavor. These latter elements are unquestionably due to the fact that our soil is largely impregnated with minerals such as iron, manganese and limestone, which give flavor and acidity.

BRANCH OF ALTON PEACH, GROWN BY G. T. GILES.

Not only do we grow apples to perfection, but peaches, plums, grapes and berries. These latter fruits likewise possess flavor not surpassed anywhere.

One of the oldest of these new orchards, now producing, is owned by Mr. Ralph Young at Minneapolis, N. C. Mr. Young's orchard covers several acres of mountainside in the very heart of the Blue Ridge, at an altitude of more than 3,500 feet. His orchard has been divided into several small tracts, planted on various slopes facing almost every direction of the compass. This was done to determine which exposure would prove the best. The North slope, according to Mr. Young's experiment, has unquestionably proven the ideal.

Practically all of the twenty-five hundred and more trees were purchased from the Stark Nurseries, and some of the first lot of King David sold by the nurseries were purchased by Mr. Young. No apple in this orchard, according to Mr. Young, equals it. It has proven its worth in the highest degree. This year is practically the first in which they have borne. Of this variety he will have only a few bushels. However, there are over 750 King David trees in the orchard, planted on a North slope, and are the thriftiest in the orchard. By the side of them are growing many Delicious, which are proving adaptable to this section. Likewise Black Bens, Stayman's Winesap, Jonathans, etc. Within the next three or four years Mr. Young will undoubtedly be shipping many fine varieties to the leading markets by the carload.

Moreover, peaches are proving capable of producing most excellent quality and size in this high altitude, and some very fine specimens have been raised this year. The trouble with peach growing in such high altitudes is that it is only once in two or three years that they bear to do any good. Grapes produce abundantly, with fine, large clusters of the most luscious fruit.

While spraying is a condition precedent to the production of the best fruit, yet it must be said that it does not require near as much spray material, nor to be sprayed near so often, as it does in other sections or in lower altitudes.

The Clinchfield road has taken up orchard development, and to aid in this work has had planted over 100 acres in apples on the crest of the Blue Ridge, near Altopas, N. C. Among the principal orchardists in this immediate section, growing apples, are: T. V. McCown, R. M. Martin, T. W. Newman, Ralph Young, Professor Hough, E. L. Anderson; and those growing peaches on a commercial scale are: J. H. Smalling, W. V. DeVault, J. T. Giles and Davis & Vaught. There can be no question but what these rugged, half-naked, old hills will soon be made to bloom and burgeon with magnificent fruits, producing untold wealth.

J. O. LEWIS.

Select Seed Corn Early

Seed corn must be selected in the fall in order to get the best stand the following spring. Most of the serious seed corn problem that exists in the country every year is caused by waiting until the last moment to select seed corn. In spite of all the agitation for better corn in the last few years, many farmers still select their seed corn in the spring, about fifteen minutes before time to start the planter. You never can get the best stand in that way, and a poor stand means lost profits.

The best way to select the seed corn is by field selection, a few weeks before you begin shucking. The reason is this: At that time the corn is mature, and if it is shucked and put in the drying racks it will have more time to get dried out than if it is not selected until shucking time. It will dry on the racks much faster than it will in the field. It is important to get the corn dried out early, for many of the poor stands every spring are caused by the freezing of the seed in the winter, and freezing will not hurt dry corn so badly.

If you do not desire to select seed corn in the field, or if you neglect to do so, it must, by all means, be selected when you gather the corn if you wish to be certain of getting a stand next spring. Have a box placed on the wagon box, and when you find a desirable ear throw it in the box and save it for seed. Don't be afraid of selecting too much seed. You ought to test every ear, next spring, before you plan it. There will be poor ears, not matter how carefully the seed is handled. And even if you have more good corn than you need, you can make a profitable sale of it to some man who has no good corn.

What rules should govern the selection of seed corn? Well, the principal one should be the rule of common sense. Find what the ideal ear of the variety you are growing is like, and then select the ears that come the closest to this ideal. Then, of course, consider the stalk on which the ears are growing. If the ear is so low or so high that it is hard to shuck, or if the stalk has any other undesirable characteristics, you don't want to increase the number of such stalks in the corn you are growing. Don't take ears from undesirable stalks.

One of the best places to store seed corn is in the attic over the kitchen, where the temperature probably will not go very low in the winter. Of course, it is essential that the corn be placed where the rats and mice will not damage it. And it should be stored in racks, so there will be a free circulation of air around it, and so it will have an opportunity to get rid of extra moisture.

Consider this seed corn proposition carefully. The stands of corn on the farms of the country could be of the 95 and 98 per cent kind, for there is no reason why they should not be if the seed corn is handled properly and tested so the poor ears may be discarded. If the stands were better, there would be much more profit in corn growing than there is at present, with many of the fields having one-fifth of the hills missing. You can't make nearly so much profit from a field of that kind as you could if the stand was what it might be.

Apple Show Promotes Home Orchards.

At a recent meeting of the Indiana Apple Show Commission it was decided to offer premiums for the best exhibits made from bona-fide home orchards. There are numerous home orchards in Indiana and some means should be taken of preserving them. E. R. Smith, president of the Apple Show Commission, says: "Too many of our modern apple shows cater solely to the large commercial grower. It is true that the future of the apple, as a money crop, depends on the commercial grower, still, the farmer should plan to raise at least enough fruit for home consumption. The farm orchard should be small. The varieties should be such that their range of ripening will extend over the entire season. Above all it should be cared for. The fruit for the family should be as perfect as that for the market. It is to encourage the general care of the farm orchards that the Apple Show Commission has appropriated $150.00 to be used for suitable premiums for fruit from real home orchards. The prizes are: First $75.00, second $50.00, and third $25.00. We want every home orchardist in Indiana to be represented at the 1912 show. The style of exhibit is optional with the grower. The only restriction is that the fruit shall have been grown in an orchard of less than one hundred trees located in Indiana, for this show is an Indiana show."

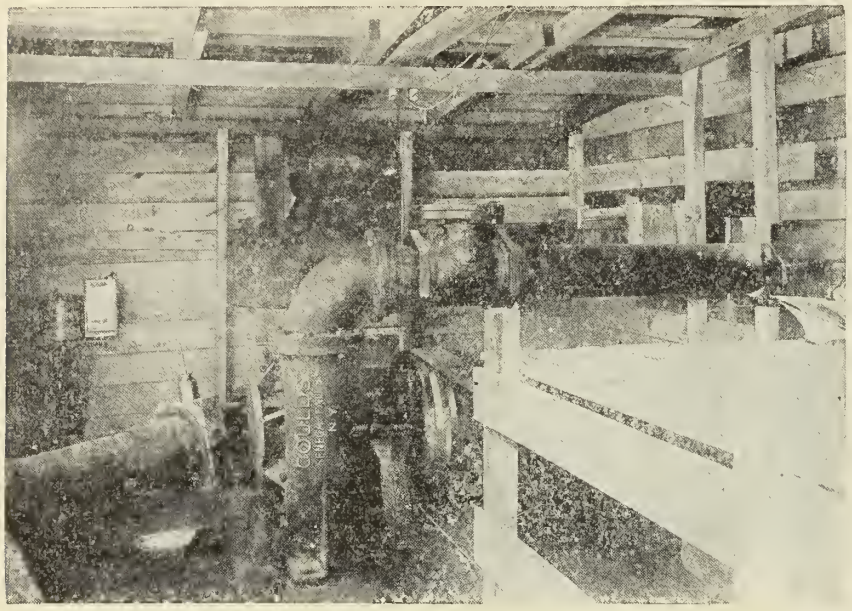
Farm Journal says: "When packing apples to send away this fall be sure and not cheat the cider mill." Yes, and make the cider into vinegar. It is easily made, it brings a good price, and the demand has never been supplied.

This is the beginning of the season for baked apples. Eat one every day. Encourage your friends to do likewise. Encourage everybody to eat more apples.

Making Garden Spots of Swamp Lands

How Soil from Surrounding Hills is Transported to the Swamps Quickly and Inexpensively by the use of Centrifugal Pumps.

Much has been written about reclaiming arid lands by irrigation; and by this means vast areas of unproductive soil have been transformed into farms of great productivity. Where mountain streams, which can be used for the distribution of the water supply by gravity, are not available it has been necessary to pump the water to the irrigated sections. The gas engine and centrifugal pumps used for this service have made it possible to change thousands of acres of desert into orchards and farms which are now adding enormously to the rural wealth of the country. The greater part of this work has been done in the west where arid conditions prevail.



This shows the centrifugal pump at the foot of the hill, forcing 2,000 gallons of water a minute to the top of the hill.

Although it is not so generally known, the eastern sections of this country also contain large areas of waste land which can be made even more productive than this western soil. Here, however, the prevailing condition is just the opposite of that in the west. The waste lands in the east and central sections consist principally of swamp lands. As the level of a greater number of these swamps is as low as that of the rivers of the sections in which they lie, ditch drainage is impossible. Here again the centrifugal pump has made reclamation possible, and it is an interesting evidence of the growing appreciation of land values that work is now being aggressively started to reclaim these lands.

The centrifugal pump is used in such operations in preference to other types because of its ability to handle large volumes of water and particularly that containing solid particles, soil, sand, etc. It is the simplest type of pump, consisting of a circular casing in which there is a rotating vane. There are no sliding contacts or valves to become worn or clogged.

One of the best examples of swamp reclamation is now being completed in the vicinity of Rochester, N. Y. This swamp is located at the upper end of a lake and is surrounded by hills containing a sandy clay soil. The proposition of the company undertaking the work has been to separate the swamp from the deeper portions of the lake by throwing a dike across at a section where the water stands at a depth of about ten feet. This dike is a little less than a quarter of a mile long and was built about 80 feet wide, the intention being to lay it out in building lots for the gaardeners and truck farmers who will occupy the land.

The water above the dike or building lot section, will be pumped out by a centrifugal pump driven by an electric motor. By regulating the pumping, any desired amount of moisture can be kept in the soil, so this section will not be dependent on the rainfall. With the fertile soil of these swamp lands and absolute control over the moisture, the ideal conditions of truck farming and gardening will be obtained in this section.

In the reclamation of this swamp the hardest part of the work has naturally consisted in the construction of the building section which separate the lake from the reclaimed land. It is interesting to note that here again the centrifugal pump has demonstrated its general utility. By using two of these pumps the hill used for constructing the dike has been literally pumped into the swamp and it has been done in an incredibly short time at a very low cost.

The method of doing the work was as follows: At the foot of the hill was installed a centrifugal pump made by The Goulds Mfg. Company of Seneca Falls, N. Y., which discharges an 8-inch stream and has a capacity of 2,000 gallons per minute.

The pump drew water from the swamp and forced it to the top of a 75-foot hill through a 900-foot pipe line. Near the top of this pipe a part of the water was diverted by a small centrifugal pump which raised the pressure. This water was conducted through two sections of hose, the nozzles of which were directed into the soil. This water and that flowing from the large pipe, flowed back into a flume, carrying the loose soil with it. This flume led back to the dike in the swamp where the soil was deposited. At the dike end of the flume the fluid contained 30 per cent solids; and the dike, nearly a quarter of a mile long by 80 feet wide and 10 feet high in the deepest part of the swamp, was made in a little over two weeks. The entire cost, including labor and the power used, amounted to but 5 cents per cubic yard.

All the pumps were electric driven and power was furnished by the railway and lighting company which furnishes current for power and lighting purposes in the city of Rochester.

The success of this work leads to the conclusion that it will be taken up in other sections. The work is simple and requires but a small investment for equipment, making it possible for individuals to carry on similar work wherever they have swamp land which could be made valuable by drainage.

A view of the cutting operation. The high pressure of the stream makes it necessary to hold the nozzle with a rope fastened to a tree.

Charm of a Distant Market

One of the worst sins of the American people is the moving of the things they raise around over the country too much. Many times there is no reason at all for moving so much of the produce, both animals and crops, to the great central markets.

Take, for example, the matter of buying and selling livestock: Many stockmen seem to think the only place they can sell their animals is in the great, central markets, and no matter what the size, condition or market price of the animals, they are "fired in" when the owner gets ready to sell, and after the freight charges are paid, he finds, or he would find if he calculated the proposition, that, in most cases, he could have made a greater profit if the stockers and most of the feeders had been sold at home. Of course, the animals intended for slaughter should be sent to the central markets, but there is no excuse for the great number of stockers and feeders that are shipped in.

An amusing incident took place in central Missouri, two years ago, that illustrates this point. One stockman had two carloads of feeders that his neighbor desired to buy. The neighbor offered as high a price as the market in Kansas City justified, but the owner of the cattle was afflicted with the germ which so many men have which leads them to accept a much lower price in a central market than they would from a neighbor, and he refused to sell. The next week, he shipped the cattle to Kansas City. His neighbor heard that the cattle were shipped, and he got on a passenger train, beat the animals to the market, and posted his commission company. The commission company bought the animals when they came, and the stockman reshipped them back to the same town, and drove them out to his pasture, which adjoined the one in which they had been pastured all summer. And then they did not cost him so much as he had offered the former owner. The freight to and from Kansas City, the commission charges and all of the other expense connected with the wholt proposition was "deadhead" expense. It also might be called "bonehead" expense.

And while this is an extreme case, there is almost an unlimited number like it every year. Stockmen should make every effort to deal at home in the purchase of cattle.

H. J. Waters, president of the Kansas State Agricultural College, found a condition just as bad in the marketing of corn in Central Kansas last year. There was one county on the uplands of that section in which the corn crop was almost a failure, and the farmers were shipping in many carloads of corn from Kansas City. Twenty miles away, in a section along a river, there had been a good crop of corn raised, and the farmers were shipping out corn. Where was it going? To Kansas City. In other words, the farmers were paying freight on that corn for 200 miles to the central market, all of the expenses on that market and then the freight for 200 miles back again. All the charges that were needed to be was the freight for twenty miles from one county to another. And you couldn't count all of the similar cases on an adding machine.

What is the remedy for this condition? Well, the first thing is for all farmers to get over the idea that it pays to go through the formality of selling either crops or stock on some terminal market, for in many cases they can get better prices at home. Make every effort to use up the raw material at home, and sell only the finished product. Usually, of course, the finished product must go to the central market.

But how can we learn of the bargains that may be found in the country near home? The most practicable way is by the organization of farmers' unions, and other similar co-operative organizations, that will keep in touch with the things grown in your section. That is one of the profitable fields for the farmers' unions, and they already are getting good results, in many cases. But what shall we do if we do not have a farmers' union? Advertise what you have for sale in that section. Publicity does not cost much, for you will not need much space for that sort of advertising, and you will find that a little money spent for advertising is much cheaper than spending it on long freight hauls.

Study this transportation problem. There is no doubt that many millions of dollars are paid out for freight charges in this country every year that might have been saved, if the material had been handled properly. That is where much of our high cost of living comes in. Every man should make an effort to market all of his material with as little overhead expense as possible.

Insecticide Plants Operated At Baltimore, Md.; Syracuse, N. Y.; St. Louis, Mo.; Fort Valley, Ga. Increased demand for "orchard brand" materials has made it necessary to erect two new plants this year—at St. Louis, Mo., and Fort Valley, Ga.

YOU CANNOT PRODUCE GOOD FRUIT WITHOUT GOOD SPRAYING MATERIALS

Orchard Brand Spray Materials are manufactured at strategic distributing points in fruit producing territory. This means best service, highest quality, prompt deliveries, economy in transportation.

Scientific and Practical Advice Offered Growers by the Thomsen Chemical Company Special Service

To enable our customers to grow more and better fruit is the keynote of the work of a Special Service Department maintained by the Thomsen Chemical Co., manufacturers of "Orchard Brand" spray materials. Prof. W. M. Scott, known throughout the United States as one of the leading scientific and practical fruit experts, who was Pathologist for eight years in the United States Department of Agriculture in charge of the orchard spraying demonstrations carried on by the Government, is at the head of the Service Department.

Our success in the insecticide business depends upon your success in producing good fruit. In order to insure your success, all those connected with the Insecticide and Special Service Departments of the Thomsen Chemical Co. have been selected because of their knowledge of fruit growing. They are all perfectly familiar with the problems of the orchard and farm. They understand thoroughly our materials and can give you proper directions for orchard operations. They are not office theorists, but practical horticulturists.

We manufacture a complete line of insecticides and fungicides with a valid reason and use for each separate article. We have thoroughly tested all of the materials at our own expense—it has never been our policy to determine the quality of our material at the expense of the fruit growers. We give fruit growers specific instructions based on definite knowledge.

Why It is Best to Spray With "Orchard Brand" Products

The Thomsen Chemical Co. has been engaged in the manufacture of spray materials for the past twelve years. It has spent **thousands of dollars** in study and experimenting in the orchard to determine the quality of material required and the manner and dates of treatment necessary to produce satisfactory results. In buying "Orchard Brand" spray materials therefore, you obtain the benefit of this knowledge in the quality of the material in the definiteness of the directions for treatment and **above all,** in the specific instructions for operating **individual orchards** furnished by the Special Service Department under the farm census plan.

The materials are packed in convenient size containers so that you can purchase much or little. Their **chemical quality** is of the **highest.** The mechanical condition is uniform and they are made at concentrated strengths so that water can be added to prepare them for actual spraying. No intricate directions for preparing them are necessary and where used in accordance with directions they will kill the bugs and prevent fungous diseases from developing.

You Get The Right Advice Just When You Need It

The Service Department is at **your** command. The way to obtain the **full** advantages it can give is to adopt our **farm census** plan. The extent and nature of injury from insects and fungous diseases varies in different localities. Different varieties of fruit vary in their susceptibility to fungous diseases. The **farm census plan** enables our Service Department to give you specific directions for treating **your particular orchard.** This plan is practically equivalent to a personal visit to your orchard by one of the best experts in the country. Neither the National or State Departments are capable of rendering you as **complete** a service as is here offered. The information available in our Service Department under the farm census plan involves pruning, fertilizing, cultivating and cover crops, as well as spraying, and **reaches you in detailed form just when you need it.**

This service is **permanent** and thoroughly abreast of the times and all the latest discoveries and developments in orchard management. In all cases where our customers are in doubt and unable to identify their troubles, specimens may be sent in to the Research Department for proper identification and directions for treatment.

THOMSEN CHEMICAL COMPANY Winder Street Baltimore, Md.

"ORCHARD BRAND" SPRAYING MATERIALS

SOLUBLE OIL—For bad cases of scale incrustation on apple trees, and for general use on shade trees and ornamental shrubbery.

LIME-SULPHUR SOLUTION—Scale remedy and fungicide for use on all fruit trees in dormant period and for use on some fruits in growing period.

ARSENATE OF LEAD—STANDARD—Paste, for killing chewing insects.

ARSENATE OF LEAD, TRI-PLUMBIC—Paste especially designed for killing curculio on peaches.

ARSENATE OF LEAD—Powder, for dusting on plants.

ATOMIC SULPHUR—The great fungicide for use on peach trees to control brown rot, and on apple trees to control leaf spots and cedar rust.

ATOMIC SULPHUR, COMBINED WITH ARSENATE OF LEAD—Fungicide and insecticide.

BORDEAUX MIXTURE—PASTE—Fungicide for use on plants.

BORDEAUX MIXTURE—Powder, fungicide for dusting on plants.

BORDEAUX ARSENATE OF LEAD MIXTURE—Paste, fungicide and insecticide.

ARSENITE OF ZINC—Paste, poison for spraying potatoes to kill bugs.

ARSENITE OF ZINC—Powder, poison for dusting potatoes to kill bugs.

ARSENITE OF ZINC COMBINED WITH ATOMIC SULPHUR—Poison and fungicide to control potato bugs and early blight.

ARSENITE OF ZINC COMBINED WITH BORDEAUX MIXTURE—Poison and fungicide to control potato bugs and late blight.

Write for Form A.

FILL THIS OUT AND MAIL IT TO US. We will then know just what information you need.

Date.....

THOMSEN CHEMICAL CO., Winder St., Baltimore, Md.

Gentlemen: I am interested in the production of fruit and have

	Variety.	Number of Trees.	Age of Trees.
Plum			
Peach			
Pear			
Apple			

Potatoes.....Acres Asparagus.....Acres

.....Acres .....Acres

I desire to participate in the benefits of your Special Service Department and would like a Farm Census Blank, FORM A, which is to be sent to me FREE and with no obligation on my part to purchase anything.

Name.....

Write name and address plainly. Address.....

About the English Walnut

For many years the English walnut has been cultivated with more than ordinary success in California, but only very recently has a sufficiently hardy variety been found to withstand the severe winters of the northern, eastern and southeastern states. The circumstances pertaining to the discovery of an unusually hardy variety, the Pomeroy English walnut, may be related as follows:

The late Norman Pomeroy of Lockport, N. Y., while attending the Centennial exposition in Philadelphia in 1876, noticed a species of tree totally new to him. On investigation, he found it to be an English walnut tree of surprising beauty. It was the fall of the year and the ground underneath the tree was covered with nuts. These proved to be equal, if not superior, to the taste, to any of the imported varieties with which Mr. Pomeroy was familiar.

Being thoroughly versed in arbor culture, Mr. Pomeroy propagated young trees from this acclimated variety, feeling certain that from these he would ultimately obtain an English walnut of superior hardiness, capable of resisting the rigors of almost any climate.

He planted these young trees about his residence in Niagara County, N. Y., in the spring of 1877 and they grew steadily, making surprising growths each year until now they stand fully 50 feet high, with a spread to their branches of 40 to 45 feet, and yielding nuts of the finest quality and in great abundance. During the thirty-five years' of growth where the temperature has frequently descended far below zero, they have had not a single setback, maturing even earlier than the black walnut or the oak. Realizing the value of his father's discovery, Mr. E. C. Pomeroy, a few years ago, set out several orchards of the variety which had thriven so well, and all these trees are now in a fine state of healthy growth, and are known by nut growers all over the country.

It is only a few years ago that the cultivation of the English walnuts for the market started in California, and today they are shipped from that state in car and train loads. To show, however, that the supply does not begin to meet the demand in this country, it may be stated that the United States consumes more than 50,000,000 pounds of English walnuts a year, and that about 27,000,000 pounds of these have to be imported. And when it is known that the price is steadily advancing, it will very readily be seen that the possibilities of commercial success are unusually great.

As to planting and cultivating, English walnut trees seem to require no particular soil, but should not be set out where it is low and wet. The trees should be planted 40 to 50 feet apart each way. A cultivated crop, such as corn or potatoes, with small fruit trees for fillers, can be made to yield an income for the brief period, comparatively, before the walnuts begin to bear. The pruning should be done between fall and spring, only such branches as would interfere with cultivation being removed.

In planting on the lawn the ground about the base of the tree should be kept spaded for three feet in circumference, and after the first year some well-rotted manure should be worked into the soil around the tree. No cultivating should be done after the first of August, as it would encourage further growth, and from then until winter the annual growth of wood is ripening and hardening.

In the English walnut at its best, the male and female blossoms mature at the same time, insuring perfect fertilization. Under favorable circumstances, the trees will bear nuts three to five years from transplanting and increase in yield yearly. As a food nuts are becoming less a luxury and more a staple article of diet. Their value is being recognized and they are being used more and more as a substitute for meat, one pound of walnut meat being said to equal eight pounds of steak, in nutriment.

In transplantation, most growers have found that two to four-year-old trees are most readily transplanted. At this age most of their growth has been in roots, and removal causes them to throw out additional roots, and thus give increased vigor to the tree. Then again, the smaller the tree, the more safely may it be packed and shipped to its destination.

A California grower of English walnuts who recently visited an orchard in western New York declared the specimens which he saw there to be "the very finest I have ever seen. You have a better flavored nut and you have proved beyond a doubt that the variety is thrifty and hardy." This same grower said that his few acres of young California trees gave him in 1911 a crop which he sold for $10,000.

ENGLISH WALNUT TREES OVER SIXTY FEET HIGH AND THIRTY-FOUR YEARS OLD.

CAREFUL DOCTOR
Prescribed Change of Food Instead of Drugs.

It takes considerable courage for a doctor to deliberately prescribe only food for a despairing patient, instead of resorting to the usual list of medicines.

There are some truly scientific physicians among the present generation who recognize and treat conditions as they are and should be treated, regardless of the value to their pockets. Here's an instance:

"Four years ago I was taken with severe gastritis and nothing would stay on my stomach, so that I was on the verge of starvation.

"I heard of a doctor who had a summer cottage near me—a specialist from N. Y.—and as a last hope, sent for him.

"After he examined me carefully he advised me to try a small quantity of Grape-Nuts at first, then as my stomach became stronger to eat more.

"I kept at it and gradually got so I could eat and digest three teaspoonfuls. Then I began to have color in my face, memory became clear, where before everything seemed a blank. My limbs got stronger and I could walk. So I steadily recovered.

"Now after a year on Grape-Nuts I weigh 153 lbs. My people were surprised at the way I grew fleshy and strong on this food." Name given by Postum Co., Battle Creek, Mich. Read the little book, "The Road to Wellville," in pkgs.

"There's a reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

The Vineyards Orchards and Farms of the Northwest

NORTHERN PACIFIC YELLOWSTONE PARK LINE

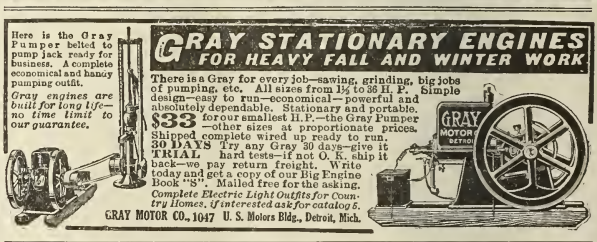
Offer unequalled opportunities to make money in intensive farming, alfalfa, grain and fruit growing, vegetable raising, dairying, poultry, hog and cattle raising. Lucrative and healthful employment outdoors in a glorious climate. The fruit lands of the Northwest grow prize-winning fruits and berries. The grain fields of the Northwest yield bountifully of the best grades of product. The vegetables of the Northwest bring top prices.

¶ The Northern Pacific Railway extends into or through Minnesota, Wisconsin, North Dakota, Montana, Idaho, Washington, Oregon: the "PROSPERITY STATES OF AMERICA." New, rich territory being opened up by recent extensions and by lines now building. Excellent chances for the Homeseeker, Business Man and Investor!

¶ You ought to learn more about the Northwest and its possibilities. You ought to SEE it. Write today for information, free booklets and full particulars about low round-trip Homeseeker Fares. Long limits, liberal stop-privileges. Say what state interests you most.

L. J. BRICKER, General Immigration Agent,
66 Northern Pacific Bldg., St. Paul, Minn.

Northern Pacific Ry



Fall Bulbs

Tulips, Hyacinths, Narcissus, Crocus, Chinese Sacred Lilies.
Catalogue FREE.
Chesmore's Seed Store
407 Felix ST. JOSEPH, MO.

THE CEDERBORG
Frost Alarm

was the first successful frost alarm sold in U. S. It is the only absolutely reliable and guaranteed orchard alarm on the market. We want agents in every fruit growing locality. CEDERBORG ENGINEERING CO., Clayton Block, Denver, Col.

In writing please mention The Fruit-Grower and Farmer.

SALEM NURSERY COMPANY SALEM, OREGON
If you want the best results plant the best stock. This is the kind we grow. AGENTS WANTED.
EASY TO SELL OUR TREES

Renew your subscription today.

Apples in North Carolina

A Fine Apple Region Largely Undeveloped. Ideal Climate and Great Possibilities For Fruit-Growers

There is probably no branch of agriculture that has developed in the past twenty years so strikingly as has the fruit industry. It has grown in a quarter of a century from a more or less general and relatively unimportant line of agriculture to a highly specialized line of great importance. Owing to the great range of climatic and soil conditions in the State of North Carolina, unlimited opportunities are here presented for the successful and profitable cultivation of most of the fruits of the temperate zone.

The leading orchard fruit in North Carolina is the apple. While this fruit can be grown at least for home use in every section of the State, the production of apples for commercial purposes is largely confined to the elevated sections just east of the Blue Ridge and in the mountain country beyond. This wonderful region of valley, plateau and mountain side is one of the finest apple regions in the United States and is as yet largely undeveloped. Here a rich soil, combined with high elevation, affords ideal conditions for commercial apple culture. It is in this section where altitude guarantees a cool climate that the apple grows and thrives and produces even better than it does in the renowned apple region of the North. Healthy old trees are growing in many parts which have been bearing heavily for upwards of a century. On the mountain sides in many places are found the thermal zones that are rarely visited by frost that total failures of fruit are practically unknown. Here too the clear air and abundant sunlight put the rich colors on the outside of the fruit and the fine flavors within. The late T. K. Bruner of the State Department of Agriculture, in his valuable work on "North Carolina and Its Resources" gives the following note on mountain apple trees.

"The size to which apple trees attain in the mountains of North Carolina is a source of wonder to those who have become accustomed to the trees in the North. In one orchard in Haywood County was measured a tree that had a girth of eleven feet and nine inches, and in the same orchard, which had never been cultivated, there were a hundred other trees that were full three feet in diameter of trunk and all in the most luxurious health. All that is needed here is a population of fruit growers who understand the culture and handling of winter apples. Apples of the northern varieties grow in Watauga County are hardly recognizable because of their greater size and beauty."

The rainfall is heavy in summer, giving a rapid growth and making the fruit of large size. The fall weather is dry, cool and bright, thus giving the most favorable conditions for fruit harvesting and marketing. It is not generally known to apple growers that a mountain region in the South by virtue of its altitude affords the same cool climatic conditions that a northern region gives, and has the advantage of more sunlight and a longer growing season.

While the apple industry in this State has by no means reached its highest point of development, there are at present more than 2,000 orchards containing approximately 1,000,000 trees. These orchards range in size from 500 to 30,000 trees, many of them yielding their owners a very profitable income. The South affords ample markets at good prices for all the apples grown. All that is necessary to make the apple business a paying one in western North Carolina is to give the orchards the cultivation and care necessary to produce clean fruit.

S. B. SHAW.
State Department of Agriculture.

RIGHT HOME

Doctor Recommends Postum From Personal Test.

No one is better able to realize the injurious action of caffeine—the drug in coffee—on the heart, than the doctor. Tea is just as harmful as coffee because it, too, contains the drug caffeine.

When the doctor himself has been relieved by simply leaving off coffee and using Postum, he can refer with full conviction to his own case.

A Mo. physician prescribes Postum for many of his patients because he was benefited by it. He says:

"I wish to add my testimony in regard to that excellent preparation—Postum. I have had functional or nervous heart trouble for over 15 years, and a part of the time was unable to attend to my business.

"I was a moderate user of coffee and did not think drinking it hurt me. But on stopping it and using Postum instead, my heart has got all right, and I ascribe it to the change from coffee to Postum.

"I am prescribing it now in cases of sickness, especially when coffee does not agree, or affects the heart, nerves or stomach.

"When made right it has a much better flavour than coffee, and is a vital sustainer of the system. I shall continue to recommend it to our people, and I have my own case to refer to." Name given by Postum Co., Battle Creek, Mich. Read the little book, "The Road to Wellville," in pkgs. "There's a reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

New Man on Staff.

Mr. C. R. Greisen has recently been added to the staff of The Fruit-Grower and Farmer as Traveling Advertising Manager. Mr. Greisen was connected with the Hood River Apple Grower's Union from 1902 to 1904, and with the Hood River Fruit-Grower's Union from 1902 to 1907.

C. R. GREISEN

He was Assistant Editor of "Better Fruit" from its beginning in 1906 until recently. Last year Mr. Greisen was Superintendent of Exhibits of the California Apple Show at Watsonville, and for the past few months, with headquarters at Portland, Ore., was manager of the Better Spray Co., a branch of the California Spray Company.

Rubbish, weeds, dead limbs, loose scales of bark, all harbor many insects over winter. Clean up the orchard just as soon as the fruit is off. Plow the ground in the fall and let it lay rough all winter. This will destroy the parents of innumerable bugs you would have to fight next year.

VIRGINIA AND NORTH CAROLINA APPLE ORCHARDS

DO YOU KNOW THAT

In Virginia and North Carolina on the slopes of the Blue Ridge Mountains and in the adjacent valleys, apples are grown that are unsurpassed in flavor by any in the world? These two states offer to the orchardist the following advantages: Productive soil, an abundance of fine cold water with living springs and ever-flowing streams, mild climate, good roads, excellent schools and social advantages with quick, cheap transportation to the largest Eastern markets.

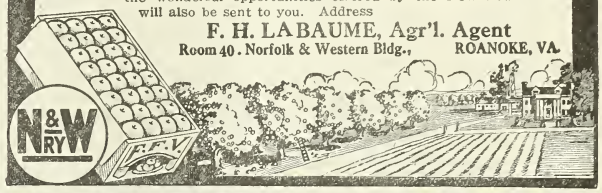
GO SOUTH, YOUNG MAN

It's a country of opportunity and good lands for fruit raising farms and grazing can be obtained at prices ranging from $10.00 and up per acre, with best markets for your produce right at hand. 30,000,000 people within a 300-mile radius and 10c per box pays the freight within this area.

LARGE TRACTS OF FRUIT LANDS up to 5,000 acres, close to railroad stations with every advantage for commercial orcharding are being offered now at $10.00 per acre, and small tracts of ten acres and up in attractive colonies are being offered for $35.00 per acre on long time and easy payments.

NOW, WHILE YOU THINK OF IT, write for a copy of the latest issue of our beautiful magazine, "The Southern Homeseeker," or better still, send us the name of a friend who might be interested, and we will send you a year's subscription free. Other interesting literature, maps, low excursion rates and book telling all about these low priced lands and the wonderful opportunities offered by the New South will will also be sent to you. Address

F. H. LABAUME, Agr'l. Agent
Room 40. Norfolk & Western Bldg., ROANOKE, VA.



You Are Invited to Send Stories to Be Used in the Winter Numbers of The Fruit-Grower and Farmer

Your story will be carefully read, and given proper consideration as to suitability and timeliness.

Tell of your personal experiences in farming; your crops, your soil, your system of management, your implements, your profits, your selling plan, schemes, ideas. In other words tell how you farm. Address your story to

THE EDITORS
The Fruit-Grower and Farmer, ST. JOSEPH, MO.

YOU OWE THIS TO YOUR WIFE

—don't let her carry water from the pump. Have running water—hot and cold—in the kitchen, bathroom and laundry. Plenty of water all the time—just when you want it. All the comfort and convenience of a city home at a small outlay by installing a

Missouri Air Pressure Water System

on your farm or country home. In addition to the personal convenience it affords, it also provides your property with fire protection. A simple turn of the faucet gives you a steady stream of water—right where you want it. The fire in the kitchen range keeps a plentiful supply of hot running water without incurring extra expense.

Complete Water Systems as low as $37.80, simple plans and instructions sent with each system. **You can install it yourself.**

Buy from the Manufacturer Direct and save from 33⅓ to 50 per cent. We make and carry every item known to the plumbing goods business. No matter what it is—we have it.

FREE Send today for our Mammoth Catalog containing hundreds of bargains in plumbing materials.

MISSOURI WATER & STEAM SUPPLY CO. 1125 Sixth St. St. Joseph, Mo.

The Fruit-Grower and Farmer

"The National Farm Magazine" St. Joseph, Missouri

Trade-Mark "Brother Jonathan" and Title Registered in U. S. Patent Office. Copyright, by The Fruit-Grower and Farmer, St. Joseph, Mo.

Address all communications and make remittances payable to The Fruit-Grower, and Farmer, Eighth and Charles Streets, St. Joseph, Mo.

WM. G. CAMPBELL, General Manager E. H. FAVOR, Horticultural Editor
JAMES M. IRVINE, Managing Editor F. B. NICHOLS, Agricultural Editor
C. R. GREISEN, Traveling Advertising Manager

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....I. C. BILLINGSLEA...First Nat'l Bank Bldg.
New York Office.....A. H. BILLINGSLEA..... No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS..821 New York Life Bldg.
St. Louis Office.....A. L. McNEY.....Third Nat'l Bank Bldg.
Minneapolis Office.....ROY. R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents a Agate Line. $7.00 an Inch. Fourteen lines to an inch.
Special Rates—Quarter Page, $78.75; Half Page, $147.00; Full Page, $280.00.
No advertising in class generally termed "objectionable" accepted under any conditions. Editions mailed first day of month. Forms close 20th of preceding month, i. e., January forms close December 20th, etc.

The Fruit-Grower and Farmer will place you in touch with over One Hundred Thousand of Most Prosperous Farmers in America

SUBSCRIPTION RATES—One Dollar a Year; Three Years, $2; Five Years, $3; Ten Years, $5—In Advance.
Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list. Write for Special Terms and Cash Commissions to Agents.

Remit Coin, Currency, Postoffice Money Order. Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 OCTOBER, 1912 Number 10

How to Market the Fruit.

It is easy enough to grow fruit, but it is a different problem altogether when it comes to selling the crop. Selling the fruit on the tree is one way, selling through the commission man is another, selling through the association is still another, but there are an exceedingly few growers who sell direct to the consumer. Yet this latter method is one which is gaining in popularity, and one which is undoubtedly bound to be more extensively practiced in the years to come than it has been in the past.

This method of marketing is being experimented with to quite a large extent by several growers and firms in the boxed apple districts of the west. who are selling direct to the consumer through their own agents in the eastern cities. A large number of growers in the eastern states have regular customers in their nearby cities for all of their produce, and they not only get two and three times the price of their crop that they would get if sold to dealers, but in addition they enable the consumer to get the produce at a lower figure then when buying on the open markets.

The public markets of the big cities offer one of the avenues for the local grower, but there are possibilities for growers, grocerymen, individuals in several lines of business to serve as agents or representatives for distant growers and market the produce direct to the consumer. This suggests a letter which we received a short time ago from a subscriber in Pennsylvania Mr. F. H. Eckles, 442 Fifth Avenue., Pittsburg, in which he says: "I have in mind selling western boxed apples direct to consumer. I feel that if they could be bought at a reasonable price per box, the people of this vicinity would consume a great many more than they now do at the prices asked by the retail dealers. We have just concluded our seasons work on our farm, one of the finest fruit and truck farms in this part of the country, and want something to tide us over the winter months. We have our own auto truck, and would sell the apples at the growers price plus a nominal charge for delivery."

There are unlimited possibilities in marketing fruit in this way. Its success is unquestioned when handled in the proper manner. Its failure is certain when dishonesty creeps in. It is a method which is discouraged by the regular dealers, who frequently spare no efforts to make the burden unbearable for both the grower and the agent. It is a method which requires the strongest co-operation on the part of all parties concerned.

Helping to Find a Market.

The isolated fruit-grower, the general farmer who has a small orchard, frequently experiences difficulties in finding a market for his fruit. This is particularly true in years when the locality has a heavy crop. In the present season such fruit growers as these, in Missouri and Kansas have been particularly hard pressed to find a buyer for their crops, as the buyers have not been scouring the country as closely as in most years.

To aid these growers in getting in touch with a market for their crops, the Missouri State Board of Horticulture and the Extention Department of the Kansas Agricultural College have devoted their efforts in aiding this class of growers. This resolves itself really into selling the fruit by mail. It is not always possible for the buyers to come in person and see the fruit in any particular orchard. Neither can they make a definite offer without seeing the fruit, or at least a representative sample.

In each of these states the growers who request it are being furnished with a list of buyers who have shown a desire to get in touch with them, and buyers are being supplied with the names of growers who have apples to sell. This course, is as far as the Board or College can go. It is then up to the growers and buyers to get together and agree on prices. This plan has proven a success, and in the absence of the much needed co-operative marketing association in the fruit producing communities of these states, has worked very satisfactorily to both buyer and producer. Without doubt it will be extended to a united effort in the establishment of several marketing associations during the coming year.

Marketing Organizations Needed.

Half the failures to make fruit growing profitable come from improper and careless picking, grading and packing. The other half comes from a lack of knowledge of where and how to sell. A few days ago I visited a nearby orchard covering twenty-five acres. The trees were large and heavily loaded. They had been sprayed four times with lime-sulphur and arsenate of lead. The fruit was as near perfection in every respect as it was possible to produce. The orchard was in the hands of a good grower.

This gentleman showed me through his orchard with considerable pride, and conducted me to some of his trees which were his particular joy. We admired the beauty of the colors, the magnificence of the fruit and the heavy crop. I was told the history of the orchard, and its great fruitfulness. I was rejoicing with the proud grower until he told me the price at which the fruit has been sold. He was to receive sixteen hundred dollars for the crop. This was less than one dollar per tree, and less than thirty cents a bushel for the apples.

He said the buyer told him of the heavy crop all over the country, and of the difficulty or impossibility of being able to dispose of fruit at any price. He had not read the crop reports in The Fruit-Grower, as he was not a subscriber, and he relied wholly on the honesty of the man who bought his fruit. The buyer, like all of his kind, saw the grower was an "easy mark" and won. He got the apples for a song, and will double his money several times off of this one orchard. Yet this grower is not the only one who has been fleeced in this way this year, and will be fleeced every year. But they demonstrate one thing that is badly needed in all parts of the country, and that is better facilities for enabling the producers to sell their crops.

Wherever we go we are confronted by this same problem, and the solution lies only in co-operation. In each community the growers must get together for mutual benefit in selling their crops. Organizations of this sort have so well demonstrated their success that there is no getting away from them.

Why don't you organize an association in your community now? If you don't know how, write to us and we will help you.

Fosters the Old Varieties.

Styles in apples change. The varieties sold on the fruit stands today do not look at all familiar to a member of the older generation. To them Stayman, Grimes and Delicious mean nothing more than mere names. They do not bring back fond recollections of that old tree out behind the barn. They are newcomers and are forcing old favorites into the background.

At the Indiana Apple Show this fall an opportunity will be given to the older generations to renew acquaintances with old-time favorites, and to familiarize the younger generation with the varieties which placed Indiana and other eastern states on the horticultural map. The premium list of the apple show contains the names of many old, and almost forgotten varieties, which still flourish but which have passed their prime as commercial sorts. Many of these are still valuable, but each year witnesses the introduction of newer kinds which are better from a commercial standpoint than many of the older sorts.

It is well to retain many of the good, old varieties, and to extend their commercial planting, but in this age of commercialism, when the producer must cater to the whims and fancies of the consumer, those varieties pay best which can be most easily grown, which have the most attractive appearance and which sell the best.

To Improve Missouri's Hen.

Poultry raising is a great industry in Missouri. The Missouri Hen produces double the value of the Missouri wheat crop each year. She produces ten million dollars more each year than the Missouri beef steer, one-half as much wealth each year as the Missouri corn crop, and ten times the value of the fruit crop. She produces sixteen million dollars more each than all the lead, zinc, iron and other minerals of the state combined.

To assist the farmers of Missouri to get still greater profits from their poultry operations by co-operation and better methods, a free lecture course on poultry is going to be had at several points in Missouri this fall and winter. D. M. Green, president of the United Publishing Co., of Waterville, N. Y., has made a donation of $250, the State Poultry Board will add perhaps as much as $1,000 more to defray the expenses of the lectures. Mr. T. E. Quisenberry, Secy. Mountain Grove, Mo., is now arranging with several noted poultry experts in Missouri and other states to deliver these lectures, which in most cases will be illustrated with lantern slides.

The only condition or requirement for a community to avail themselves of one of these lecture courses is that they are to be well advertised, and that the city or community must send an invitation to the Poultry Board signed by at least 100 persons who signify their intention of attending all of the lectures, the course being known as the Poultry Husbandry Lecture Course, and held under the auspices of the State Poultry Board.

Two Noted Men Dead.

Professor John Craig, professor of horticulture in Cornell University and editor of The National Nurseryman, died August 10. He had been editor of that publication since 1904. No man has done more for the nursery interests than he. Professor Craig was born at Lakefield, Quebec, April 27, 1864. He was educated at the Iowa State College, receiving the degree of B. S. with the class of 1888.

The New York Fruit Growers' Association, on learning of his death, adopted the following resolution: "The members of the New York State Fruit Growers' Association have learned with the deepest regret of the death of John Craig, professor of horticulture at the New York State College of Agriculture at Cornell University. In the death of Professor Craig, the fruit-growers of New York, as well as Cornell University, have lost an inspiring teacher, a thorough and accurate investigator and valued friend.

"The following members of the Society were appointed to put on record and to express to Mrs. Craig and the other members of the family, in behalf of the members of the Association, an appreciation of his life and services, and their sympathy in this hour of bereavement. Signed: C. S. Wilson, S. D. Wadhams and Edw. Van Alstyne, Committee."

The nursery and fruit interests of the country have suffered a loss that will be felt keenly. Professor Craig was an intelligent leader, who was ever directing the way to better things.

Charles S. Yates, business manager of The National Nurseryman, died Sept. 4, of acute indigestion. He was sixty-five years old. He is survived by a widow, and an adopted son.

He was born in Canada, August 11, 1849. He was in the mining business in the West for several years, but he returned East, and entered the nursery business at Waltham, Mass.

He began a nursery business at Rochester, N. Y., in 1885. He has been connected with the business, both as a publisher and owner ever since.

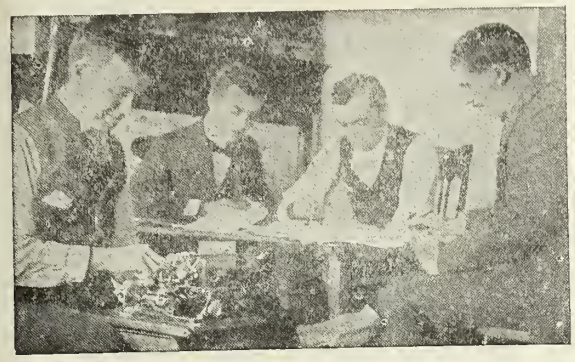
Mr. Yates was treasurer of the American Association of Nurserymen at the time of his death. Charles J. Maloy has been selected to fill the unexpired term. Mr. Yates ever has been an efficient worker for the best interests of the nursery business. The industry has lost a loyal and efficient worker in his death.

If your subscription has expired renew today. Don't miss a copy.

ENTERING A NEW ERA

The Small Beginning of The Western Fruit-Grower. Its Development Into the Greatest Farm Paper in the World, The Fruit-Grower and Farmer. The Men Who Have Fostered the Business; the Present Plant and Staff

This is an age of improvement. He who stands still, decays. The methods of farming are making greater strides than ever before in the history of the world, but we are only entering the threshold of the possibilities. The future is pregnant with opportunities for him who will but reach out and take hold of the new methods, new ideas, varieties and crops. There have been wonderful developments in methods of combatting plant and animal diseases; in transportation facilities; the application of power machinery, and in the dissemination of information through the agricultural colleges and the farm papers.

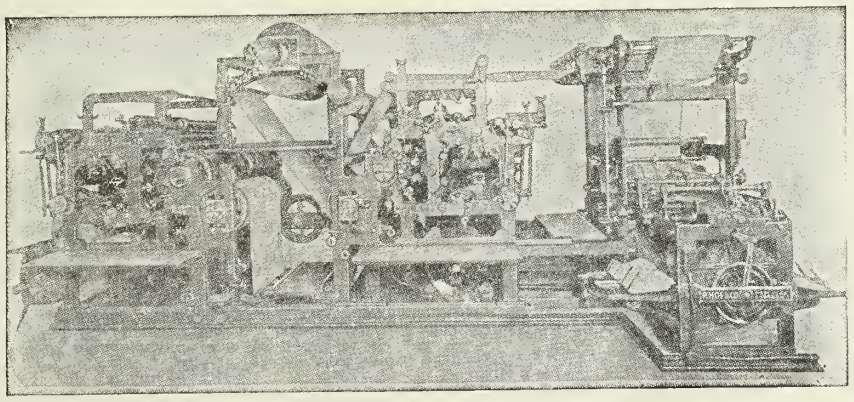


THE FIRST BUSINESS OFFICE.
Seated From Left to Right are James M. Irvine, F. L. Campbell, W. G. Campbell and W. W. Anderson.

In keeping with the advancement of agricultural progress, this publication, with this issue, enters a new era, with the adoption of a new policy, new size of page, and a new name, The Fruit-Grower and Farmer. In addition to making a feature of horticulture, it will contain articles discussing general agricultural subjects, and particularly those branches which can best be combined with fruit-growing.

These changes mark such an advancement that it may be interesting to our newer readers to tell something of the history of The Fruit-Grower and to trace the condition which have led to the adoption of the new name and policy.

The first issue of The Fruit-Grower appeared January 1, 1897. At that time the planting of fruit trees in the Middle West was quite general. Indeed, it may be said that a regular boom in tree-planting was on. Bearing orchards had been bringing wonderful returns for those days, and general agricultural crops were in some cases, selling at less than the cost of production. Everybody was talking fruit culture, and there was a demand for a publication dealing with that subject.



THE NEW HOE ROTARY MAGAZINE PRESS ON WHICH THE FRUIT-GROWER AND FARMER IS PRINTED.

Four young men who were then employed on a St. Joseph daily newspaper decided to start a fruit paper to meet this demand. The paper was called The Western Fruit-Grower. The young men were employed during the day, and all of the work of publishing the new paper was done at night. All editorial copy was prepared at home. All business letters were written there. The type was set by them after their day's work on the daily paper was done, and the small edition was printed by a local job printer.

The four men who started The Western Fruit-Grower under such difficulties were W. G. Campbell, F. L. Campbell, James M. Irvine, and W. W. Anderson. The first three are still actively connected with the paper and Mr. Anderson's place in the company is now held by W. P. Tracy, so that during the sixteen years of its existence the paper has remained under the same management.

For almost two years The Western Fruit-Grower was published under the difficulties which had handicapped it from the start, all work being done at night. One by one these men resigned their positions on the daily paper to devote his entire time to The Western Fruit-Grower, and instead of working only at night on it, the owners worked day and night.

It would be a long story to tell of the enlargement of the printing establishment. One new press after another was added. Additional equipment was purchased every year, and five years ago a building was erected for the exclusive use of The Fruit-Grower and the printing business which had grown up with the publication. At first this building seemed entirely too large, but now it is crowded throughout with modern machinery. The building and plant afford us a publication home to be proud of, where only a few years ago the company did not own a piece of machinery or a single font of type.

Instead of being printed on flat-bed presses, eight pages at a time, at the rate of about 1,200 sheets per hour, this issue of The Fruit-Grower and Farmer is printed on our new Hoe Rotary Magazine press, thirty-two pages at a time, at the rate of 5,000 per hour. The improvement in methods of printing our paper illustrates, better than anything else perhaps, the great growth which it has made, and is a forecast of future development.

The first edition of The Western Fruit-Grower consisted of 2,000 copies, all of which were mailed out as samples. Subscriptions came in slowly at first, but there was a regular increase in circulation until today The Fruit-Grower is recognized as America's leading fruit and farm paper—"The National Farm Magazine."

During the years of development of The Fruit-Grower, there has been a rapid, but gradual evolution in horticultural practices. When this paper was started but little was known on the subject of spraying. Paris green was the standard insecticide for all eating insects, and but few enthusiasts hoped to save more than about 60 per cent of an apple crop from the codling moth by spraying with this poison. San Jose scale was scarcely known at that time, bordeaux mixture had scarcely been heard tell of, lime-sulphur had not been invented, and kerosene emulsion was the only remedy for sucking insects.

The orchards which were planted about the time The Western Fruit-Grower was started encountered enemies that the orchard owners had not considered. It soon became apparent that apples and other fruits would not, of themselves, grow to perfection, even in the most favored localities. Men planted orchards with the idea that they would only need harvest the fruit in the fall, and that it would sell at high prices. When they finally learned that they would have to fight for their fruit crops, they prepared themselves for the fight that is continually before them, and are changing their methods and practice from year to year as new conditions arise.

Fruit-growing is now getting down to a business basis. Men are coming to realize that fruit culture pays big returns in some seasons, and that it can be profitably undertaken under right conditions. They know that fruit trees and plants require care and attention, just as does corn, wheat or a herd of fine cattle. Those who would succeed also realize that fruit crops are more or less uncertain; that sometimes weather conditions are most unfavorable and light crops are grown.

They have also found that one who grows fruit exclusively is likely to have a very one-sided business; some years there will be a feast, other years a famine; and that with little or no live stock on a fruit farm, there must be some provision for restoring fertility to the soil from outside sources. This means the purchase of expensive fertilizers, and this is a severe drain on one's finances in years of short crops.

Animal husbandry, dairying and poultry culture have always been popular with fruit growers, and even more attention is now being given to such combinations than in the past. Fruit-growers are not giving less time to orcharding, but along with the improvements in their horticultural practices they are bettering their general farm methods. In addition to fruit, they are growing such other crops as will interfere least with their specialty. Some are making a business of fruit-growing and dairying, some are growing potatoes and other vegetables with their fruit crops. Others are raising poultry. Still others add live stock or grain, but always selecting a crop which will interfere least with their horticultural activities.

These men are perhaps our highest type of farmers. Indeed, the census report shows that they are, and some time ago Cornell Experiment Station, Ithaca, N. Y., issued a bulletin showing that the farmers of this class are unquestionably the leaders in the Empire State. A farmer of this kind may not keep a great deal of live stock, but it is of the highest type. He may not have a large acreage planted to corn or alfalfa, but it is made to produce the maximum crops. He may not have so many fowls as farmers of some other class, but he keeps thoroughbreds, and his financial returns are better.

This type of farmer believes in keeping pure-bred live stock, using the best seeds obtainable, and the most approved machinery, for he must make his soil produce to the limit. He is a leader in his community, a supporter of schools and churches, an advocate of good roads, and in every other way he is a good citizen.

Now, this is our appreciation of the kind of farmers who make up our list of subscribers. In our desire to render the greatest help to them, the policy of our paper has been changed. The big feature of the paper will be fruit-growing, as heretofore, but in addition there will be articles of general farm interest, and the name henceforth will be The Fruit-Grower and Farmer, as an evidence of the wider field. Mr. James M. Irvine, one of the founders of the paper, will have general supervision of the editorial matter, as Managing Editor. Associated with him will be two farm experts. These are E. H. Favor and Floyd B. Nichols. Mr. Favor is a practical orchardist and is a graduate of the University of Missouri, and was formerly connected in an official capacity with the Horticultural Department of the Missouri Experiment Station. Later he was with the Utah Agricultural College, and is now the Horticultural Editor of The Fruit-Grower and Farmer.

Mr. Nichols, a practical farmer and a graduate of the Kansas Agricultural College, is the Agricultural Editor. Each of these men is an expert in his line, and is ready at any and all times to consult or correspond with any reader regarding any phase of farming.

Our old friends, and new, will get from this retrospect and forecast, an idea of the growth and greatness of this publication and an appreciation of its plans for the future. We know the paper will be more helpful to its readers than ever before. Those who have watched over its affairs from the beginning, are still in charge, and will see to it that the highest possible standard is always maintained. We hope to have the continued co-operation of our readers in this work, fully realizing the important part they have played in bringing The Fruit-Grower and Farmer to its present high standard.

THE PUBLISHERS.

THE PRESENT HOME OF THE FRUIT-GROWER AND FARMER.

How Do You Handle Fruit?

A Subscriber Tells of the Method Used in His Locality and Wants to Know How It Can Be Improved

Will you please be kind enough to inform me, either directly or through the columns of The Fruit-Grower, as to the different plans or methods employed in different sections of the country in picking and handling apples prior to packing; also as to handling and storing the apples after packing but before shipment to the trade or to cold storage warehouses.

I will give you a brief description of the methods prevailing in this section, and will greatly appreciate it if you will point out the faults or disadvantages in these methods as compared with the methods employed elsewhere.

As yet, box packing is scarcely known here, most of the best apples being packed in barrels, and the rest being sold in bulk, either to local dealers, or to dealers who come here during the harvest season and buy apples and ship them in bulk to cheap markets, where they are sold by the peck or bushel, often right out of the car to the consumer, but sometimes to local merchants who resell them.

Probably the most common plan is to pack the apples in the orchard, under the trees, the empty barrels, press, etc., and the packing table when there is one, being moved about from place to place in the orchard. The apples are generally picked in half bushel baskets and carried by the pickers direct to the "packing ground," and poured out on the packing table. The picker then returns with his empty basket to the trees. Part of the pickers work from the ground, others from step ladders, others from pole ladders or extension ladders, and still others climb the trees, for "high-headed" trees are the rule.

After being poured on the packing table the apples are spread out and sorted, the culls being thrown into barrels placed for this purpose, and the good apples being run through a cloth shute into the packing barrels. Two grades of barreled apples are the rule, No. 1 and No. 2; but some growers pack only one grade, and others pack as many as three or sometimes four different grades or sizes. But most growers confine themselves to two grades.

Standards of course vary, but with the more careful growers a No. 1 apple is 2½ inches or more in diameter, of reasonably good shape and color for the variety, sound and free from worm holes, scab, scale, punctures, or other material defects. Only moderate care is used with reference to slight bruises, picking with stems attached, etc. A No. 2 apple is between 2 1-4 and 2½ inches in diameter and presumably about as good in other respects as a No. 1, though some growers are a little less rigid in regard 2's than 1's, and some growers put into the No. 2 barrel apples that are large enough for No. 1 but not quite up to their idea as to No. 1 grade. As stated above, these ideas vary considerably, one man's No. 2's being often better than another man's No. 1's.

The standards are being gradually raised, and reasonably careful barrel packing is becoming more and more common, and as will be explained below, we expect to make an enormous stride forward this year.

The packing table commonly used is oblong in shape, and large enough to hold from 2 to 5 bushels of apples. From 2 to 6 men work at the table, each throwing out such culls as he sees, and gradually pushing the sound apples toward the lower end, where the packer stands. When the table is provided with two shutes, one for No. 1's and the other for No. 2's, the packer and one or two of his helpers put the 2's over into their shute, and allow the 1's to move on to the No. 1 shute. The shute in question is made of canvas or other strong material, an ordinary tow sack open at both ends being often used. The upper end is tacked to the table so the apples can be easily pushed into it, and the lower end is gathered up and held in the packer's hand till full, when it is lowered into the barrel and released, the apples being allowed to roll into the barrel. While one barrel is being packed, another is being faced by a man who makes this his job, and still another man removes the packed barrels, heads them up and brands them.

The packed barrels are generally hauled direct from the packing grounds to the railroad, though some growers haul them first to a shed or barn and leave them there till ready to ship. A few growers have cellars or frost proof buildings in which to hold their apples till sold; but most growers sell or ship very soon after gathering.

The culls and the best windfalls and drops are usually hauled in open barrels to the station and sold to buyers who load them in bulk in freight cars and ship them to low priced markets, where they are peddled out by the peck or bushel. At present we have no canning factories, evaporators or cider mills to consume the lower grades of fruit; but there is an excellent opening for such a plant, and we hope some one will realize this opening and put up a plant of this kind at an early date. We are in correspondence with several parties on this subject at the present time.

Last year, instead of packing my apples in the open, I tried the plan of hauling them in the picking baskets to a packing shed in the orchard where the packing crew was located. I tried to provide enough baskets for each picker to be able to set down his basket as soon as full and pick up an empty basket, and thus to keep right on picking without appreciable delay. The spring wagon then drove through the orchard, laying out the empty baskets and picking up the filled ones and hauling them to the packing shed. While this plan had many advantages, I found it considerably slower and more expensive than the plan of packing under the trees. In view of this fact, I was left in doubt as to which of the two plans was preferable.

It would be very interesting and profitable to your readers for you to describe in detail the methods of picking, handling, packing, etc., in vogue in other sections of the country, with an expression from some one competent to judge as to the relative advantages and disadvantages of the various plans. Where central packing houses are used, how large a territory can such a plant serve? In other words, how far is it economically practicable for a grower to haul his fruit before it is packed? Is the fruit sorted in the orchard or at the packing house? How is it hauled, in baskets, lug boxes or loose?

North Carolina. R. P. JOHNSTON.

There are some questions contained in the above letter which we want to hear from all our readers about. How do you handle your apples prior to packing? You fruit men, who have had long experience in handling fruit in the orchards, please tell us, for the benefit of this subscriber, how you handle your fruit. Let us have many replies to these questions. They are of vital importance. The best of the replies will be published in these columns, so that all may have the benefit.

H. J. Weber & Sons Nursery Co., Western Distributing Agents, Nursery Missouri.

$975 F. O. B. Detroit

Long-stroke motor, 3¼x5½ inches
Enclosed valves
Three bearing crank shaft
Unit power plant
Multiple disc clutch
Three speeds forward
Sliding gears
Full floating axle
Central control
Zenith carburetor
Bosch magneto
106-inch wheelbase
32x3½-inch tires
Quick detachable rims
Mohair top with envelope
Jiffy curtains
Windshield
Rear shock absorber
Prest-O-Lite tank
Gas headlights
Tools—horn
Trimmings black and nickel
Standard color, black
Magneto and camshaft driven by silent Coventry chain

Send for the book which shows why we believe the Hupmobile is the best car in its class in the world.

When you have read the book, we believe you will agree with us that 1913 has produced no car more meritorious.

You know, of course, that two cars sold at the same price can be far apart in real value.

And you are aware that the difference in value arises from what is in the car; not what is on it.

In the matter of men, machinery, material, and manufacturing methods we claim kinship for this car with the very best.

In the matter of watchful workmanship; and processes calculated to produce precision we claim first honors in the Hupmobile class.

We believe the Hupmobile to be a car of longer life and less friction; a car of fewer repairs; a car of greater care in small details; a car of greater efficiency and greater value.

We have pictured in booklet form a volume of evidence which we believe establishes our case; and we want you to see and read it.

We also want you to see and ride in the car—**samples are now in the hands of Hupmobile dealers.**

Hupp Motor Car Company, 1210 Milwaukee Ave., **Detroit, Mich.**

"Packed Full of Painting Facts"

That is the way some one has described our booklet "Handy Book on Painting," which we send to any farmer requesting it.

Dutch Boy Painter
Pure White Lead

and pure linseed oil make the most serviceable paint you can buy for any use. This book tells just how to mix and apply them. Tells how to determine the quantity of paint you will need for your house, the number of coats to apply and how to get the colors you want, etc. You hire a good painter for important jobs, but every house owner should know these paint facts for himself. It is knowledge that will mean money in your pocket and a better job of painting.

Send a Postal for the Book
Ask for Farm Painting Helps No. 275

If there are children in your home or your neighbor's, ask also for the Dutch Boy Painter's Book for the Children.

NATIONAL LEAD COMPANY

New York Boston Buffalo Chicago
Cincinnati Cleveland St. Louis San Francisco
(Philadelphia, John T. Lewis & Bros. Co.)
(Pittsburgh, National Lead & Oil Co.)

The Spokane Apple Show

The Fifth National Show Will Be Held November 11th to 17th

The importance of the fifth National Apple show to be held in Spokane, November 11 to 17, is recognized by the United States Department of Agriculture, which will send its expert in fruit identification and standardization to participate in the judging

Officials of three large railroads are taking great interest in the show, backing up their moral support with liberal cash contributions to the premium lists. H. C. Sampson, vice-president and general manager of the apple show, has received telegrams from Louis W Hill, chairman of the Great Northern railway board of directors, announcing a contribution of $1,000; from Howard Elliott, president Northern Pacific, $1,000; from J. D. Farrell, president, and J. P. O'Brien and Robert E. Strahorn, vice-presidents of the Harriman lines in the Northwest, $1,000. He received word from James J. Hill, former president of the Great Northern, that Mr. Hill will pay $1,000 for the best 100 boxes of apples exhibited at the show. Mr. Hill will send a representative here to select the apples.

Prizes aggregating more than $15,000 will be awarded by the fifth National Apple show, November 11 to 17, inclusive. "The scope of the apple show broadens each year," said Vice-President and General Manager H. C. Sampson. "From 250 exhibitors in 1908 it grew to 416 in 1909, to 600 in 1910, and to 712 in 1911, from 28 states and two foreign countries. This year we will exceed 900.

"Last year the Canadian, Japanese and Australian governments sent official representatives to study our methods of packing, spraying, sprays used, etc. Buyers, growers, scientists and delegates from all parts of the civilized world will be present in 1912. "The acreage planted to apples in this country is enormous. Within the next two years the carloads of apples shipped from this territory will exceed the carloads of wheat from this, the greatest of wheat-producing sections. Our apple competitions range from the carload lot of 630 bushels down to a single apple, with prices for commercial, fancy and unique displays. All of our contests are wide open to the world. Our judges are men of international reputation, who score carefully and closely on color, flavor, condition and pack. The exhibitors are those who are most scientific and most progressive and who use the best methods in cultivation, pruning, spraying and packing."

Professor W. S. Thornber, director and chief horticulturist of the Lewiston-Clarkston School of Horticulture, expresses the belief that "the National Apple shows of Spokane have done more for the apple industry than all other factors taken together." Professor Thornber, in a letter to General Manager H. C. Sampson of the apple show, made the following suggestions:

First: That men who are thoroughly familiar with the varieties of the Pacific Northwest should be the judges, particularly of the plates, and that great care should be exercised in seeing that a prize winner is true to name and type.

Second: That the factor of varieties from particular districts be emphasized, probably by offering premiums for a collection of the five best commercial apples of any district, to be exhibited as plates.

Third: That practical, simple lectures (illustrated, if possible) be given each afternoon of the show by successful men and college men from Pacific Northwest institutions.

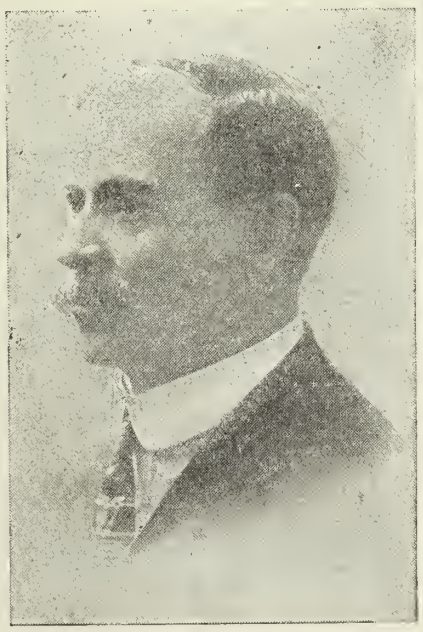
Fourth: That there should be a boys' and girls' judging contest, the entrants to be instructed previously in methods of judging.

Fifth: That the boys and girls should be taught to pack apples in an artistic and practical manner, in order that more uniformity in regular commercial packs be attained as these young people go into orcharding as a business.

Professor Thornber urges also that quality be made the prime object of the show rather than bigness.

Lake Appointed Secretary Pomological Society.

Mr. L. A. Goodman, president, American Pomological Society, announces the appointment of Professor E. R. Lake of Oregon to fill out the unexpired term as secretary of



PROF. E. R. LAKE

the late Professor John Craig, of Cornell, whose death occurred recently. Professor Lake is a valued assistant to the U. S. Pomologist and is at present engaged in special investigations for the U. S. Department of Agriculture, with residence at 3333 Twentieth St., Washington, D. C. He was educated in Michigan, and has spent twenty years in horticultural and pomological work on the Pacific Coast, and is well known as a writer and lecturer upon horticultural and pomological subjects. He is also the recognized authority upon Persian walnuts in the United States, and an expert in pomological nomenclature.

Because a man grows good fruit is no indication that he is selling that fruit for what it is really worth. It is one thing to grow the fruit, and another thing to sell it. Co-operative marketing associations solve the marketing problem, and enable the grower to get full value.

Tomatoes can be kept for several weeks after frosty nights have come by packing the fruit in the cork dust in which the imported grapes are received. The redwood sawdust in which California grape growers are beginning to pack grapes might answer just as well. Try a little of it this fall.

Many times a dollar's worth in a year's subscription to The Fruit-Grower and Farmer.

Post Toasties

—the most winning cereal

That has yet appeared on the American Breakfast table,

Golden-brown, crisp bits of Indian corn,

Perfectly cooked and toasted, ready to serve direct

From the package with cream.

Not yet approached in

Tempting flavour and

Appetizing nourishment;

One doesn't forget the "toastie" flavour—

"The Memory Lingers"

Sold by grocers in 10 and 15c packages.

Made by Pure Food Factories
Postum Cereal Company, Ltd.
Battle Creek, Mich.

Otwell's Tree Paint

(PATENTED)

For Winter Use

IF YOU ever had any experience with rabbits, field mice or other winter tree pests, you don't need any warning, but if you haven't, look out! One rabbit can do more damage in a single night than the cost of protecting your entire orchard.

Those who have tried to protect their trees with corn stalks, old rags, newspapers, screens, manufactured devices, axle grease, etc., know how unsatisfactory they are—taking a lot of time to apply, and often doing more damage than they prevent.

The safe, sure and reliable method of protecting your trees during the winter is by applying OTWELL'S WINTER TREE PAINT.

It has proved itself in thousands of orchards throughout the country—has been the old standby of orchardists for many years.

It contains no oil or grease—nothing to harm any tree. It is simply a powder which you mix with water and apply with an ordinary clean paint brush. A boy can paint one tree per minute—a large orchard in a day or two.

Here are two letters taken at random from among hundreds received from satisfied users of Otwell's Winter Tree Paint. Names furnished on request:

"I painted about 4,000 trees last fall, and I found the bark fine and smooth up as high as I painted—nothing disturbed the tree."

"Your paint used on about 300 of my young apple trees last fall, not only kept the rabbits from gnawing, but also kept the borers away, and I have noticed no bad effects from the use of it."

OTWELL'S WINTER TREE PAINT besides giving your trees absolute protection against rabbits, benefits them in other ways also. It makes the bark grow smooth, instead of rough and scaly.

It is a partial protection against cold and sudden changes of weather. Thousands of trees have been saved by it.

It destroys the eggs of tree enemies—borers, lice, etc.

In the spring it is carried to the roots by the showers of rain and acts as a powerful fertilizer.

Put it on just before it freezes in the fall. It may save you hundreds of dollars.

Price $1.50 per gallon size, or 80c per half gallon size. One gallon will cover 300 trees of average size. Are your trees worth half a cent each?

If you can't get Otwell's Tree Paint from your dealer, write for free literature to the nearest distributor, if there is one in your vicinity in the following list. If not, write us direct.

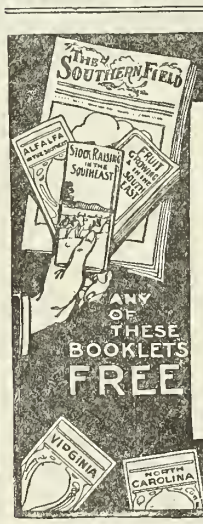
W. P. FULLER & CO.: San Francisco, Sacramento, Los Angeles, San Diego, Pasadena, Oakland and Stockton in California; Portland, Oregon; Seattle, Tacoma and Spokane in Washington; Boise, Idaho.

Missoula Mercantile Co., Missoula, Mont.
Kalispel Mercantile Co., Kalispel, Mont.
Parchen Drug Co., Helena, Mont.
Bennett Glass & Paint Co., Salt Lake City, Utah.
Ogden Paint, Oil & Glass Co., Ogden, Utah.
McMurtry Mfg. Co., Denver, Colo.
Pimbley Paint & Glass Co., St. Joseph, Mo.
Brown Camp Hardware Co., Des Moines, Ia.

Patents controlled and paint manufactured exclusively by

MINNESOTA LINSEED OIL PAINT CO.
1101 Third Street S. Minneapolis, Minn.

Cheap Profitable Farm Lands



For Stock, Poultry and Hog raising, Dairying, Fruit growing, Truck Crops, Alfalfa yields and General Farming, the SOUTHEASTERN STATES present soil, climatic and market conditions unsurpassed by any other region.

Farm land values are most tempting. Undeveloped tracts sell from $6 an acre up; improved properties range from $20 to $50 per acre.

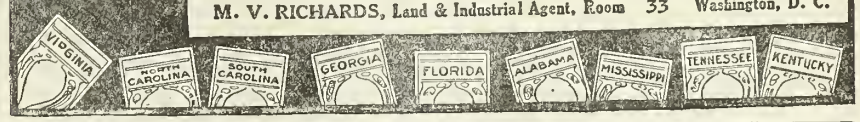
THE SOUTHERN RAILWAY

Mobile & Ohio Railroad or Georgia Southern & Florida Railway

will help you find a desirable farm location where two and three crops grow annually. Alfalfa produces 4 to 6 tons, Corn yields 60 to 100 bu., Truck crops make $100 to $400, Apple Orchards $100 to $500 per acre, and Beef and Pork are produced at 3 to 4 cts. per lb.

Let us know in what state and branch of farming you are interested. Information given and free publications furnished on application

M. V. RICHARDS, Land & Industrial Agent, Room 33 Washington, D. C.



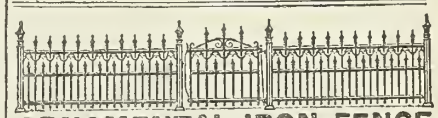
MEN WANTED IN AUTO BUSINESS

Big demand for trained men. Earn from $75.00 to $150.00 per month. Learn all about automobiles in six weeks by

THE "SWEENEY SYSTEM"

of practical experience. In our machine shop, garage and on the road you learn by actual experience how to repair, drive, demonstrate and sell automobiles. Send for free catalog explaining The "Sweeney System" and showing views of the largest and best equipped auto school in the world. Write today. Now.

SWEENEY AUTO SCHOOL,
1506 Woodland Kansas City Mo.



ORNAMENTAL IRON FENCE

Strong, durable and cheaper than wood. Hundreds of patterns for lawns, churches, cemeteries, public grounds, etc. Write for free catalogue and special offer.

WARD FENCE CO., Box 631 DECATUR, IND.

Need of Central Association

By George O. Greene, Kansas Agricultural College

The Sulzer Apple package and Grade law which recently passed congress is only a step in the right direction. It still leaves too much in the hands of the apple dealer. He still seems to have the right to say whether or not the fruit is "standard grade," thus holding the lower-price whip over the producer even after a contract is signed and the apples delivered.

It is now up to the producer to pack under the directions of some central selling agency and sell his fruit f. o. b.

The law says what a standard apple barrel shall be and says that a grower of packer may brand his apples "Ben Davis Standard Grade.. Minimum size 2½ inches" or, "2 inches, or whatever the size may be," "Grown and packed by John Jones, Appleville, Kansas." It also provides a penalty for John Jones if his apples do not measure 90 per cent of 2½, 2¼ or 2 inches minimum size if they are so branded.

The law should have also named standard apple boxes of different capacities and should have placed inspection in federal hands, making the penalty more than $1.00 for each wrongly marked package. Canada has a law which says what first grade apples shall be and places inspection in Dominion officers' hands. Violation of their law means confiscation.

Under present market and crop conditions, growers will have to sort and grade with the greatest care, brand packages exactly as they are and then sell f. o. b. This makes fake inspection at the other end impossible. Selling f o. b. subject to inspection is not f. o. b. at all.

In some sections of the west the growers pack under the inspection of a Central Association, and market through the Association. While this method would be hard to work out in widly scattered orchards of the Middle Western States; it is an effort in the proper direction. The work being done by the Extension Department of the Kansas Agricultural College shows what might be done with a central marketing place, with more authority as to inspection, and to force packers to load properly and immediately when sales are made.

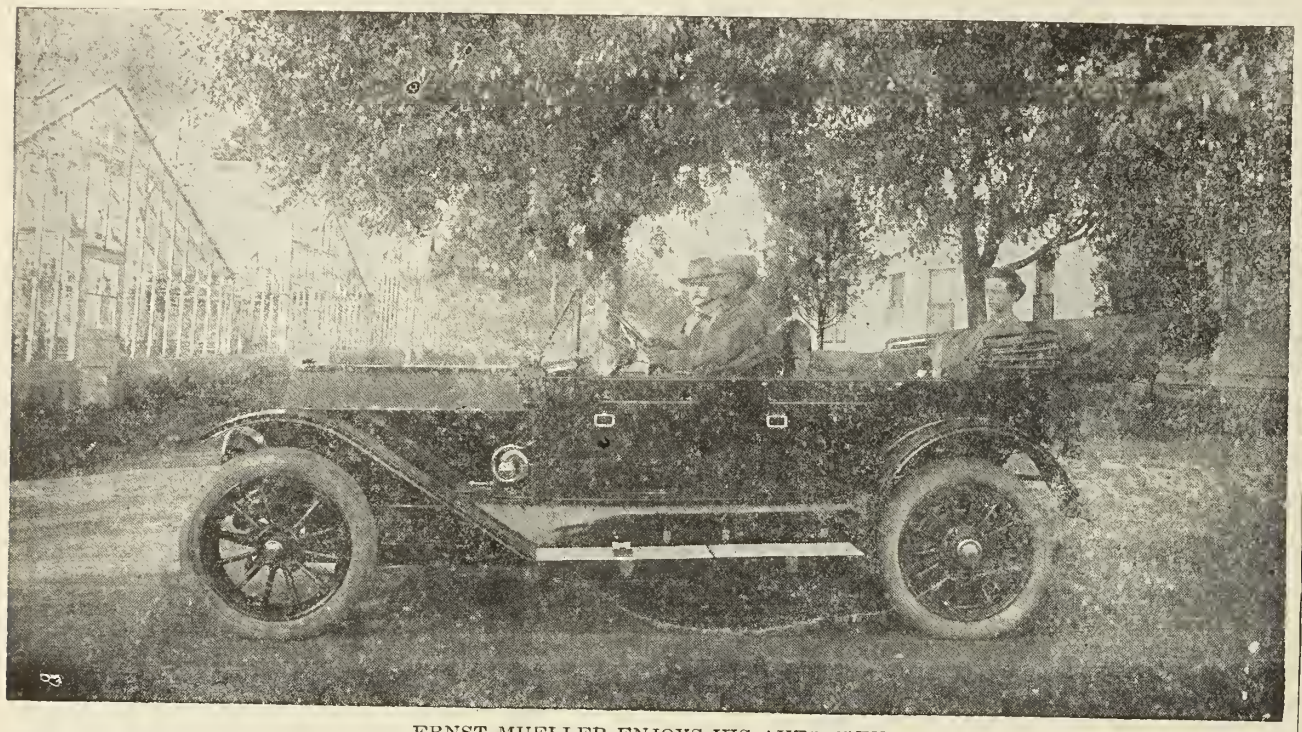
There seems to be good reason for Kansas Growers forming a Central Association of some sort with local auxiliary Associations. While there will be many breakers ahead for such an Association, out of the effort will grow a knowledge of the market, its conditions and demands. The sooner rotten, blotchy and wormy apples cannot be shipped as eating apples, the better for both grower and consumer.

The Sulzer law has started things; The Pure Food Commission can do a good many things that the rules of the game won't call a foul. Some times in the near future the Grower will receive part of the profit on No. 1 fruit which he has been throwing away because of his ignorance of the demands of the ultimate customer and of the methods for reaching that same consumer.

The fact that the grower of good fruits is ignorant of the matter of exploiting his finished products is not surprising. He has never before seen any special need of hiring an advertising specialist to sell his specially Colbred and extra size Ben Davis Apples or Kieffer Pears. Under present day conditions, advertising by special methods of packing, by packages and by labels to catch the eye of the consumer is as essential as high culture is to the growing of perfect fruit.

Rural Advertising and rural publicity will soon be required subjects in all Land Grant Colleges. The Grower of 3½ inch Ben Davis Apples must know how to exploit his product if he receives any attention at all. The fruits are good to look upon but looking won't buy spraying materials nor pay for tires for the Automobiles.

Systematic packing, according to geometry, uniform fruit, and uniform and persistant publicity are essentials to success in selling the highest grade of fruit products.



ERNST MUELLER ENJOYS HIS AUTOMOBILE.

A Prosperous Vegetable Grower.

Ernst Mueller, a vegetable grower near St. Joseph, Mo., and an old subscriber to The Fruit-Grower and Farmer, has one of the largest ranges of greenhouses in northwestern Missouri, devoted exclusively to the production of vegetables during the winter months. In these houses he produces great crops of lettuce, radishes, cauliflower, cucumbers and tomatoes. In a dark cellar he forces a great quantity of rhubarb for the early spring trade. His greenhouses, as well as the fields in which he grows crops during the summer months, are all provided with the Skinner system of irrigation, in which the water is distributed through small nozzles from overhead pipes.

Mr. Mueller is an automobile enthusiast, and for the past two seasons has won the first price in the automobile flower parade, held in St. Joseph. He has two cars, one a four-cylinder and the other a six-cylinder, silent Knight, Stoddard-Dayton. The accompanying illustration shows Mr. Mueller sitting at the wheel in his six-cylinder $5,000 car. Seated beside him is Mr. Carl Sonderegger of the German Nurseries, Beatrice, Neb., and Mrs. Mueller in the tonneau. A portion of Mr. Mueller's range of greenhouses is shown at the left of the picture, and his residence at the right.

Wanted–a Special Representative

in every fruit growing *and* farming locality

The Fruit-Grower and Farmer,—"The National Farm Magazine," requires the services of a "Special Representative" in every fruit-growing and farming locality. The appointee may be either a man or a woman,—one who is acquainted with the people and familiar with conditions in their territory is desired.

There are many families living within a few miles of your home, who are interested in fruit-growing and farming, who are not now subscribers to The Fruit-Grower and Farmer. These people should be called upon, with a view to getting them to subscribe. A personal representation by a local man or woman will secure their subscriptions.

A liberal commission with additional bonuses will be paid for every new and renewed subscription secured and collected for, and sent in to this office. When one works systematically, a good volume of business can be obtained and good money can be earned.

There is no expense connected with the work. If you are interested in your neighbor's welfare, as well as that of yourself and The Fruit-Grower and Farmer, and can take up this work, let us hear from you. If you are not, and know of someone whom you believe might be,—or someone in need of immediate work,—tell them about this offer,—it may be the beginning of a good start for them.

Address or Apply, Circulation Department

The Fruit-Grower & Farmer
St. Joseph, Missouri

Plant Oregon Grown Trees

Produced by One of the Oldest, Largest and Best Equipped Nurseries in the Northwest

SEND YOUR NAME for "*Miller's Guide*" and Full Particulars for Cash Discount and Prepaid Freight Offer.

TRUE TO NAME—Healthy, Well Rooted, BEAR YOUNG—Leading Varieties in APPLE, PEAR, PEACH, PLUM, PRUNE, CHERRY—Full Line of SHADE and ORNAMENTAL TREES, VINES and SHRUBS

A. MILLER & SONS
Incorporated Founded 1878

MILTON NURSERY CO., Milton, Ore.

We will mail you a copy of

THE COUNTRY GENTLEMAN

(The Oldest Agricultural Journal in the World)

every week from now until February 1, 1913
For 25 Cents—half price

THE oldest agricultural journal in the world changed hands a year ago. It had been issued for 80 years; yet in this last year 60,000 more farmers than ever before have begun to buy it. We offer it to you on trial for four months for 25 cents—half price.

THE COUNTRY GENTLEMAN is a national weekly devoted to agriculture as a great business industry. It is the answer to a demand. In England "the country gentleman" is a man of means, with estates cultivated by others. In America today "the country gentleman" is the business farmer. Here the efficient owners of farms do not differ socially or intellectually from the heads of factories or commercial houses. They are business men.

And these are days of rapid changes—in cultivation, in marketing, in farm management, in government agricultural policies, in rural life. Many a farmer gets little more than 30 cents out of every dollar he ought to have. The middleman gets a lot of it. More goes because of wrongful taxation, too great overhead expense, and failure of the farm to yield all it would.

To help our readers solve scores of problems, both national and local, we spare no expense. We get and print up-to-the-minute and down-to-the-ground information and advice. Our experts are men in the field, the dairy, the orchard. They write sound common-sense, and they write it clearly. To give you their practical experience we spend $75,000 a year. We believe you want the benefit of all this. You can try it for seventeen weeks for only 25 cents. This is solely a trial offer—it never will be repeated.

Four Regular Weekly Departments, Alone Worth the Subscription Price

Women's Cares, Comforts, Clothes and Cooking

Our departments for women appeal directly to the woman in the country. They include four regular features, all ably written: (1) Practical Talks by a country woman of experience on problems of the hired man and hired girl, training of children, pin-money, etc. (The Country Gentlewoman); (2) Foods and Cooking, country dishes, pleasing new recipes from East and West—preserving and canning; (3) The Rural Home—its furnishings and decorations; (4) Sewing—how to make clothes stylish yet practical—embroidery, laces and knitting ideas.

$1106.85 From a One-Acre Garden

A net income of $1,106.85 in twelve months from a little one-acre home garden was the achievement of one man, who tells us how he did it. There is always definite and helpful information on gardening in our Home-Acre Department. The Country Gentleman will aid the man who is trying to get his living from a little land—or the man who raises a few delicacies—or the city man who has not yet given his whole time to farming—as well as the big commercial gardener.

How Are Crops and What Are They Worth?

What crop to grow? When to sell it? These questions determine profits on most farms. The Country Gentleman employs a national expert on crop reports to write a weekly department on The Crops and the Markets, giving the changes in prices and the market demands. Also there are special articles telling how to put each crop on the market in prime condition so as to get the maximum price. No farmer who reads this department regularly, and supplements it with a local newspaper, can be ignorant of when and how to market his crop to get the greatest returns.

What Is Your Congressman Doing?

The Presidential campaign, the State campaigns, involve today many issues of direct personal importance to farmers. You want a way to follow easily and accurately what the politicians are doing. That is what the Weekly Congressional Calendar in The Country Gentleman is for. It does it successfully, always with an eye for the agricultural interests. By it you can check up the votes of your own representatives in congress and legislature on things that mean dollars and cents to you.

Here Are Five Important Special Series That Will Appear During These Four Months

A Master Farmer and His Fifty Farms

In the Genesee Valley, New York, one man owns some fifty farms—over 10,000 acres in all. They are rented—many of them have been for a century. The rental is $2 to $4 an acre, according to the crop. Much of this land fifteen years ago returned only seventy-five cents an acre—some of it, nothing at all. Now it is all on a paying basis. How this master farmer manages this enormous estate, and aids fifty tenants in making a profit, is told in one article of our series on successful farmers. It's the story, not of a fad, but of a money-maker. So with all this series. The articles deal with big and little farms in various parts of the country.

Wiped Out By Fire

In New York State alone there were 5,800 farm fires last year. They caused a loss of $1,500,000. Most of them could have been prevented. Lightning caused 1,800—many of these were preventable. We shall print a series of articles on fire prevention and protection covering (1) What farm fire losses represent and how they threaten the average farmer; (2) How to guard against fire; (3) How to put it out if it starts—up-to-date home fire-fighting apparatus; (4) The best kinds of insurance on buildings, crops and livestock impartially compared: (5) Actual facts about farmers' mutual insurance companies that have worked. These articles will show you in a practical way how to strengthen your protection against the possible loss of your property or profits.

What Can Your Boy Earn?

Six graduuates of different agricultural colleges went back to the farm, as thousands of others are doing. They farmed by the help of what they had been taught in college. Some did brilliantly from the first; others just held their own; all are now what you would call successful. They have consented to write what they did and how they did it. In particular, they will say just how their training panned out when actually put to test. Is your boy going to an agricultural college— Get a line on the possibilities that await him, the salary he may expect to earn, the capital he may need in future.

Good Marketing By Advertising

Six years ago a farm hand in a Western State rented some land and grew a crop of fine seed grain. Last year he sold over 15,000 worth of pure-breed seed grains, and is known as one of the seed experts of the world. Judicious advertising did it.

A student in a leading agricultural college heard a lecture on advertising. He went home and prepared some small ads for produce. In six weeks he sold for nearly $1,000 goods which might otherwise have brought less than $400. The methods of these men and a dozen others will be told in our series on "Farm Advertising." It covers advertising of pure-bred livestock, seed grains, produce, dairy products and fruit. Several stockmen of national tanding will contribute. All details explained.

What Is Your Money Crop?

If your farm were big enough, and the soil, climate and market conditions varied enough for 30 crops, you would like to have 30 experts—one for each. But the cost would be too great. Most successful farming communities center attention upon a single crop adapted to the locality. To diversify or combine crops offers greater returns from year to year, but it is necessary to have one crop that you may promptly convert into cash to meet running expenses.

We are printing a series on "The Money Crop." The articles will be written by 30 experts—on wheat, corn, tobacco, cotton, hay, potatoes, pork, beef, milk, wool and so forth. Each article will show the essentials in business management, soil, climate and capital, and the returns which may be expected. They will include personal experiences.

Besides these, we have frequent practical articles on poultry, livestock, the dairy, farm machinery, road building, the rural school, the church, the grange, farmers' clubs and other aspects of country community life; co-operative marketing; building and furnishing the house; a regular department on the scientific advance of agriculture and new inventions; wholesome fiction of country life, stories and verse; a letter-box and a strong editorial page that stands always for the interests of the farmer.

OFFER Sixty thousand more farmers than a year ago are already buying THE COUNTRY GENTLEMAN at 5 cents a copy, or $1.50 a year, the regular price. If you knew THE COUNTRY GENTLEMAN as they do you would be glad to pay that amount and more for your subscription. You know our other publications, THE SATURDAY EVENING POST and THE LADIES' HOME JOURNAL. We want you to know THE COUNTRY GENTLEMAN. The Curtis Publishing Company never gives premiums, bonuses or clubbing offers. But it is good business for us to get THE COUNTRY GENTLEMAN into your hands. You will judge for yourself. In order to give you a fair chance to see with your own eyes that it is everything we claim, we will send it to your home until February 1, 1913, for 25 cents. This one-half reduction in price is solely a trial offer for new subscribers. It will never be repeated. Fill in and send the coupon opposite (or, if you wish to save the paper in which this is printed, write us a letter, giving clearly your name and address, enclosing 25 cents).

THE CURTIS PUBLISHING COMPANY
PHILADELPHIA, PA.

CUT OUT—MAIL TODAY

The Country Gentleman,

Independence Square, Philadelphia, Pa.

Enclosed please find 25 cents, stamps or coin (Canadian price 40 cents). Please send The Country Gentleman to the address below until February 1st, 1913, beginning with the next issue.

Name .....

Town .....

State .....

Auto Truck Beats Wagon

For Hauling Fruit to Market An Auto Truck Is Equal to Seberal Teams and Wagons

The past month has been unusual for Idaho, as it has been cloudy and damp the greater portion of the time, and was within a few degrees of freezing tw or three times. While the rainfall was not very heavy, the cloudy weather caused things to rot very badly.

The melon crop was nearly a failure as they rotted badly and were flavorless; watermelons were pale in color, and when the weather did clear up, they blighted. But the weather was fine for lettuce, celery aud other green truck. The celery is the best we ever raised. Peaches seemed to do all right, and ripened up just the same.

No one up here has had any experience in packing and shipping peaches, and we are learning a lot. Nobody realized how fast they would come on, or how much help it would take to handle them, except the experienced foreman employed by the association, Mr. Perkins. He told the directors to get more lug boxes on hand and have more experienced packers ready to do the packing, but as the early peaches were handled without any trouble, they thought of good size, except where they were very thick on the trees. But the Crawfords required to be thinned to at least eight inches to produce peaches large enough to make a good pack, and as few of them were properly thinned, the consequence is most of the Crawfords will go to waste.

We learn by experience, and if there is a peach crop next year we will know better how to handle them. The association has sent out over 18,000 so far, aud most of them were sold f. o. b. Lewiston, at forty cents a box. J. E. BUTLER.

AUTO TRUCK, CARRYING 300 BOXES OF PEACHES READY FOR THE CAR. THIS TRUCK MADE EIGHT TRIPS EACH DAY WITH LOADS LIKE THIS.

Auto Tour Feature of N. Y. Meeting

One of the big features of the field meeting of the New York State Fruitgrowers' Association held August 15, was the automobile tour through some of the prominent fruit producing sections of that state. The automobile tour has become an annual event at the summer meeting and demonstrates the popularity of the automobile among the fruit farmers of New York's apple producing districts. In the tour and at the field meeting this year there were fully fifteen hundred people and three hundred automobiles, most of which carried from five to seven passengers. In addition several motor trucks were in service, one of which, a five-ton machine, carried fifty-two passengers. A great many growers came from their homes in distant counties in their machines, and the local committee supplied the remainder needed in making the eighty-mile tour. There were machines from Wayne, Monroe, Oswego, Erie, Niagara, Geneesee, Livingston, Yates and Columbia counties, and at least one machine from Ontario, Canada.

This year's meeting was held at Albion, the county seat of Albion county, and the citizens and chamber of commerce did nobly in caring for the crowd. The chamber of commerce prepared a handsome souvenir containy many views of Albion and vicinity, a neat programme of the concert provided for the entertainment of the fruit growers, together with a very complete road map of the territory covered in the automobile tour.

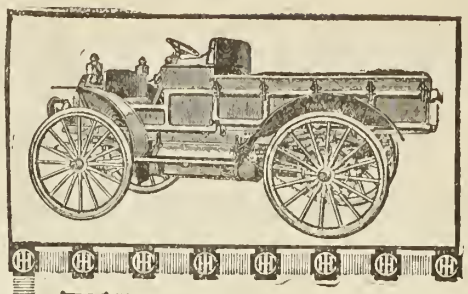
The court house was designed as a place of meeting, but long before the meeting was called to order it was found that more commodious quarters were needed. The meeting then moved over to the Baptist Church, where it filled aisles, gallery and Sunday School room, extended out upon the church lawn and gathered in little groups all about town discussing problems of mutual interest.

The afternoon's programme included the addresses, "The Apple Industry," by Edward Van Alstyne, and "New York's Agricultural Renaissance," by R. R. Riddell, of the State Agricultural Department, followed by a question box. The evening was taken up by a concert in the High School auditorium and was greatly enjoyed by both local and visiting growers.

Early Thursday morning the crowd and automobiles began to gather for what was proved to be the most popular part of the summer meetings. With the routes completely mapped and the farms of especial interest so thoroughly listed, it was a very easy matter for everyone to follow the route from the guides given them.

The points of interest were conspicuously numbered, and each was listed in the guide; some with names of owners only, and others with acres of different fruits, yields, experiments being carried on and other points of interest. For example:

"2. F. W. Mason, 20 acres apples bearing, 5 acres apples not bearing; 3 acres quinces bearing; 5 acres peaches bearing; 6 acres peaches not bearing. Total, 39 acres fruit; 2,200 barrels last season. Expects 1,200 barrels this year. 200 Russetts which



A Good-Looking, Dependable Business Wagon

THERE'S a look of sturdy reliability and independence about an International auto wagon that makes friends for it wherever it goes. The car is just as reliable and dependable as its looks indicate. In endurance contests it equals cars costing three times as much. In economy it stands at the head of its class. In dependability and all round utility, it beats them all.

Every day you run an International auto wagon you will find it more useful to you. With it you can make the trips you used to neglect, because you did not want to take the horses from their work. Perishable products are handled speedily, or taken to the most profitable market. Best of all, the car saves money as well as makes it.

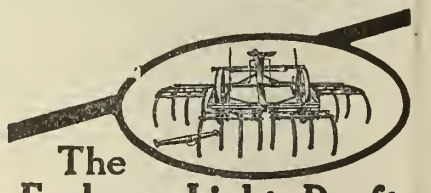
International Auto Wagons

help make farm life pleasant. It is a pleasure to run the car and it is so reliable, so ready to go at any time or for any purpose that it soon becomes indispensable. It can be used in all seasons when the road is passable to horses. The wheels are high enough to give ample road clearance. Solid tires give good traction and eliminate many tire troubles. The engine is simple and powerful. Fuel and oil to run an International auto wagon cost less than the feed for a horse, while the wagon will do from two to four times as much work.

It will pay you in many ways to know all about the International auto wagon. A letter brings full particulars with many interesting facts and figures.

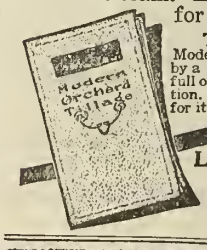
International Harvester Company of America
(Incorporated)
135 Harvester Building Chicago U S A

I H C Service Bureau
The purpose of this Bureau is to furnish, free of charge to all, the best information obtainable on better farming. If you have any worthy questions concerning soils, crops, land drainage, irrigation, fertilizer, etc., make your inquires specific and send them to I H C Service Bureau, Harvester Building, Chicago, U S A



The Forkner Light Draft Harrow

Hangs low and has great extension—you work right up to trees without disturbing boughs or fruit. With it you can cultivate 20 to 30 acres a day with one team. Low-priced, but built for long, hard service.



THIS BOOK FREE
Modern Orchard Tillage, written by a practical orchardist, chock-full of valuable information. Write for it.

Light Draft Harrow Company
607 E. Nevada St., Marshalltown, Iowa

Build with CONCRETE BLOCKS

Make your own blocks and build fireproof, permanent buildings with your own hands, by using the HERCULES JR. CONCRETE BLOCK MACHINE, designed especially for farm use. Requires no experience to operate, saves you money on whatever you build or repair. Write for full information and free booklet. Century Cement Machine Co., 210 Mill St., Rochester, New York.

BETTER FRUIT TREES

Direct from the grower, at half what you would pay an agent. 200,000 Apple trees, 175,000 Peach trees, and Pear, Cherry, Plum, Quince, shade and ornamental trees—all large, thrifty, and with fine roots. All Dansville grown, where San Jose scale has never been found. We Pay the Freight.

Free, illustrated Catalogue gives special introductory bargains, for Fall planting. Write today for Catalogue D

DENTON, WILLIAMS & DENTON, Dansville, New York

bore heavily last season have no apples this year."

This is the way it ran through 125 numbers on the long route covering eighty miles. An entirely different route of 25 miles was also mapped out with 46 numbered points of interest. The numbers covered only a small number of the farms passed, and were intended to call attention to special points of interest. Lunch was taken at Point Breeze on Lake Ontario and stops were made here and there, wherever anyone cared to look things over slowly.

The day was ideal for the trip and many automobiles started out before the time set, some making the route in one direction and some the reverse.

While many orchards in this section get good care in culture, pruning and spraying, there are many that get only half care and for many no care at all. Even with handsome results from proper care right before their eyes, many farmers still neglect their orchards and not a few in this vicinity have made themselves independent by buying these neglected orchards, and by giving them good care reap large profits on their investments. The trip pretty thoroughly covered Orleans County and although there are many well loaded orchards there are many that have but a quarter to half a full crop. Most of the apples are Baldwins this year, and Greenings are very scarce. Fall fruit is also very scarce this season, and this will strengthen the prices for the early winter varieties. Most orchards have suffered from aphis, and in some the injury from this insect is so serious that the percentage of number one fruit will be greatly reduced. Apples are showing good size for the season, but with the shortage of many varieties, and aphis injury, growers are looking for better prices than they dared hope for early in the season. We stopped at one orchard that has had notably thorough spraying for many years but has this year fallen under different management. A large block of young orchard appeared to have been entirely missed in spraying, and although many of the trees were well loaded, hardly a perfect apple could be found.

Pears are a very light crop and a few orchards were probably ruined by fire blight. Quinces and apples also showed dead tips from this cause. Lime-sulphur and arsenate of lead are used almost wholly in this section. Growers are getting interested in farm tractors and motor trucks and on many of these larger orchards, with but slightly rolling land the tractor should prove very serviceable.

Much of the apple crop in this section is picked by hobo help, and some of these wanderers are already arriving. This Lake Ontario fruit belt from ten to fifteen miles from the lake, is one of the surest peach sections in the United States, and even farther inland the crop is fairly sure. Some very handsome peach orchards were found on this trip and most of them were in fine condition. Elberta is the most prominent variety.

Quite a number are commencing to thin their apple crop and the practice seems to be gaining steadily in favor especially in the younger orchards. The larger trees, from 35 to 50 years old that will bear from 15 to 25 barrels of fruit, present quite a difficult problem when it comes to thinning. In new settings the tendency seems to be to set fillers, at least one way. Beans are a very popular crop for the young orchards and are also a general farm crop in this section. One farm we visited had 100 acres of beans. The navy bean is grown in this vicinity. Other sections grow the marrowfat while the red kidney is grown extensively in other localities. Cabbage and tomatoes are also used as young orchard crops while quite a few grow small grains, leaving a strip on each side of the trees for cultivation.

These summer field meetings are very popular and give growers a chance to compare methods and results that they could get in no other way, and to the observant man with an open and receptive mind their value is hard to estimate.

Start the School Promptly.

Let the children start to school promptly this year. There are persons who keep their children at home for a few weeks every year to help with the farm work. As a result, the pupils lose interest in school work, for they start into the term behind the children who have been allowed to begin work at the start of the term, and usually they never catch up. Therefore, they are behind at the end of the year, and too often this fact is not considered when their school work is judged, and they are merely classed with those who are dull. Is that the kind of reputation you desire your children to have?

Now, if the average earning power of an educated man and an uneducated man for a lifetime is estimated, and the difference divided by the extra number of days the educated man was in school, it will be found that every day spent in school has netted the educated man about $10. Do you think your children can make $10 a day working for you at ordinary farm work? If you don't, let them start to school promptly this fall.

At the Kansas Agricultural College experiments have been conducted to find out a way by which the worms can be kept out of sweet corn. The silks of sweet corn ears were kept dusted with equal parts of arsenate of lead and lime. In one plat that was treated in this way only 25 per cent of the ears were wormy. On a tract of the same size, but untreated, 75 per cent of the ears were wormy. The silks were kept covered with a light dusty coat of the poison, and no harm comes from it, as the poison washes off easily.

SONDEREGGER'S TREES and SEEDS THAT GROW

Apple, 7c each. Varieties: Gano, Jonathan, Grimes Golden, Winesap, Stayman's Winesap, McIntosh, Winter Pearmain, Spitzenburg and 20 other varieties.

Plum, 15c each. Native, Japanese and European varieties; also German and Italian Prune.

Cherry, 14c each. Varieties, Early Richmond, English Morello, Wragg, Bing, Lambert and others.

Concord Grapes, $2.50 per 100. Full assortment of other varieties of Grapes.

Black Locust Seedlings, 8-12 inch, $1.60 per 1,000.

True Catalpa Speciosa Seedlings, 8-12 inch, $1.75 per 1,000. Larger sizes at accordingly low prices.

Lowest Prices for High-Class Stock Send for Our Big Catalogue.

German Nurseries & Seed House

CARL SONDEREGGER

Box 500. BEATRICE, NEB.

Good Farm Fruit TREES

OF THE BEST QUALITY THAT CAN BE GROWN

Guaranted true to name. Direct to the fruit grower and planter from the nurseries of Kelley Brothers, Dansville, N. Y. Established in 1887. We have the endorsement of our fellow townsmen in our catalogue, which we believe is the best recommendation any firm can have. It speaks volumes more than we ourselves could say. We have no bargain lots, or prizes to offer. We deal in nothing but good stock. Write us today. It will bring a catalogue to your door.

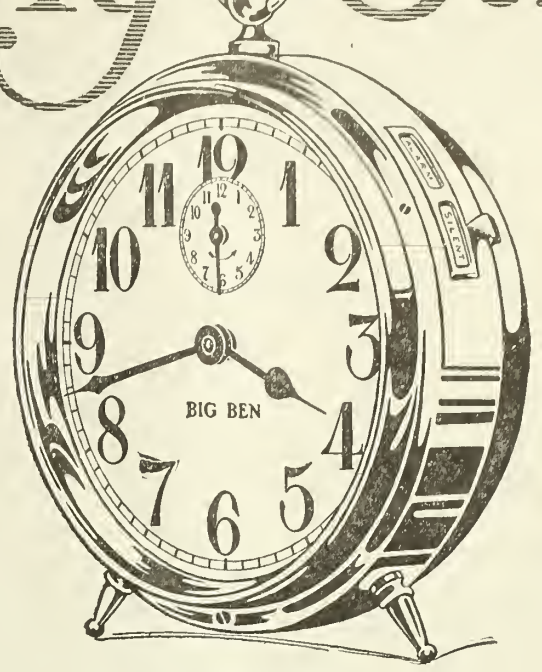
KELLEY BROTHERS, 14 Main St., Dansville, N.Y.

FREE—Arkansas Homesteads under new 3-year law. 500,000 acres now vacant. Our Homesteader's Guidebook tells just how to locate, acquire title, acres vacant by counties and full text of new law. Price 25c. Farm Pub. Co., Little Rock, Ark.

Coyne Brothers Handle All Kinds of Fruit and Produce

160 Water Street, Chicago, Ill.

Big Ben



One Big Ben Runs the Whole Farm on Time

Big Ben is made *big enough* for the whole family to consult about the time. He looms up handsome and impressive across the largest rooms. His broad, smiling face and big, honest hands tell the *right* time plainly. A million families have adopted him. He works for his living—a drop of oil a year is all he asks.

You can buy a clock *to wake you up* for $1 or $1.50, but isn't Big Ben worth a dollar more than that since he wakes you up *on time* and never fails to tell the right time *all day* long as *well as all the night?* You don't have to wonder "if that clock is telling the right time" if the clock is Big Ben. The city man can ask a neighbor or get the right time by picking up the telephone. You must depend upon a clock. Depend upon Big Ben.

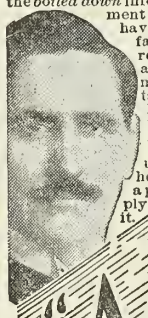
He helps you wind with his big easy-turning keys. He wears an inner jacket of steel, which keeps him strong and makes him last for years. He rings just when you want and either way you want *five straight minutes* or *every other half minute during ten minutes* unless you flag him off. Get him now. And get him *Christmas* for some *friend* or *relative*.

He is sold by jewelers only—the price is $2.50 anywhere.

If you cannot find him at your jeweler's, a money order sent to his designers, *Westclox, La Salle, Illinois*, will bring him to you express charges paid.

(139)

Write Galloway Tonight

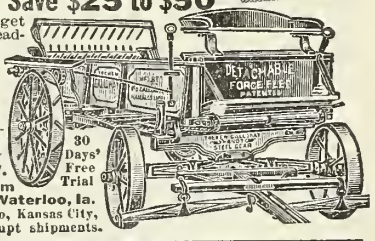


Get *your free* copy of "A Streak of Gold." Write me your name and address *tonight* so I can mail you the greatest *dollar-producing* piece of literature that could ever visit your home. There is a veritable *gold mine—a streak of gold*—on your farm that this book will tell you how to turn into *genuine gold dollars.* It contains the *boiled down* information the great soil experts, experiment stations and thousands of farmers have learned about manure. Plain facts written so that you can readily understand them; tells about the soil—what it is made of—what crops take away from it—how to maintain its fertility—how to care for manure and how to apply it.

"A Streak of Gold"

FREE!

Then there's my big Manure Spreader Catalog and my special offer where you can **Save $25 to $50** and get a Spreader that can't be beat *anywhere at any price.* Learn about Mandt's New Gear—the masterpiece—wonderful detachable force feed. **Spreaders from $39.50 up.** Don't delay—write me a postal or letter **NOW.**



30 Days' Free Trial

Wm. Galloway, Pres., The William Galloway Co., 1038 Galloway Sta., Waterloo, Ia.

We carry stocks of all our machines at Chicago, Kansas City, Council Bluffs and Minneapolis—insuring prompt shipments.

Insect Enemies of the Peach

By F. A. Waugh, Massachusetts Agricultural College

It is often said that the insect enemies of all crops are constantly multiplying in these latter times, and that the modern farmer has a great deal more to contend against than his grandfather used to have. While this view of the case is usually exaggerated, it still has some foundation. At any rate, to grow regular crops of fancy fruit which will grade up to the requirements of the best markets requires constant vigilance. The fruit-grower today must be acquainted with a considerable number of insect enemies, must be able to recognize their work at a distance and must be ready to meet them in an effective manner.

The most serious enemies of the peach are the San Jose scale, the peach borer, the peach lecanium, the plum curculio and the fruit bark beetle. Fortunately there are few orchards where all these insects operate at once, yet the orchards which are free from serious attacks by some of these are even more rare.

San Jose Scale.

Unquestionably the first place amongst injurious fruit insects must be awarded to the San Jose scale. Its geographical range is almost exactly the same as that of the peach tree. Thousands of peach orchards have been killed out entirely by this enemy; others have had their lives seriously threatened; many crops have been ruined; others have been partly damaged, and everywhere the scale is a source of expense and anxiety to the peach-grower.

The scale is most easily seen on the fruit which, when attacked, is marked with small red circles around the scales. The fruit, however, is not attacked until the tree is already pretty well infested. The fruit-grower must learn, therefore, to recognize the presence of the scale on the twigs. Here it may be seen as a rough, grayish, scurfy covering readily recognized after one has become acquainted with it. The San Jose scale need not be mistaken for any other scale insect. It is much smaller than the other kinds commonly seen on fruit trees, being rather smaller than a pin head. It differs also from most other scales in being distinctly circular, whereas most species are oblong or oyster-shaped. It is also black with a dot or pimple in the center, giving it somewhat the appearance of a fungous pustule.

The insects hibernate under these scales and begin their activities about the time the sap starts in the spring. Early in the summer the adult insects emerge and the females produce their young, which resemble small yellowish mites and which move about on the tree looking up new locations and pastures green. As soon as they find suitable territory they settle down and work their beaks into the bark or young fruit and proceed to suck the juices of the tree. They begin at the same time to form waxy coverings which rapidly harden, turn dark colored and constitute the protecting scale over the insects. They are extremely prolific and the progeny of a few scattering San Jose scales will infest a whole orchard within a ear or two.

Fortunately, this insect can be thoroughly held in check by constant and persistent spraying. Experience indicates that the so-called soluble oils and the lime sulphur mixtures are the most effective remedies. Extensive experiments have been made in summer spraying, especially with the lime-sulphur sprays. While a few careful operators have shown excellent results by these methods, it cannot be said that summer spraying has proved a general success against San Jose scale. Present practice puts the chief emphasis on the theory of a thorough spring spraying, which is given about the time the snow goes off the ground and before the buds start into growth. In cases of very severe infestation, it is feasible to spray the orchard heavily late in the fall after the leaves have dropped, and again in the spring in the usual manner.

Orchards which require a systematic San Jose scale campaign should first be thoroughly pruned and scraped. All the old rough bark should be scraped away and if possible burned. The tops of the trees should be shortened and any old broken branches cut out, reducing the area to be sprayed and facilitating the work of the sprayer. Where a regular annual spraying is given, as it must be in the San Jose scale districts, it is highly important to keep the trees pruned in this compact form and to the heads open and clean.

Lime-Sulphur Wash.

This spray solution is used chiefly for killing the San Jose scale, and has been found on the whole the most efficient spray for that purpose. There are several commercial brands of lime-sulphur on the market, which afford a quick and convenient means of preparing the solution, but for those who prefer to make their own, the following recipe may be used:

Fresh stone lime, pounds	16
Water, gallons	40
Flowers of sulphur, or sulphur flour, pounds	15

Flowers of sulphur usually cost a little more than the sulphur flour, but should be preferred when the solution is to be cooked over a fire in the kettle. When the solution can be cooked with live steam, which is the better way, the cheaper grades of sulphur are equally available.

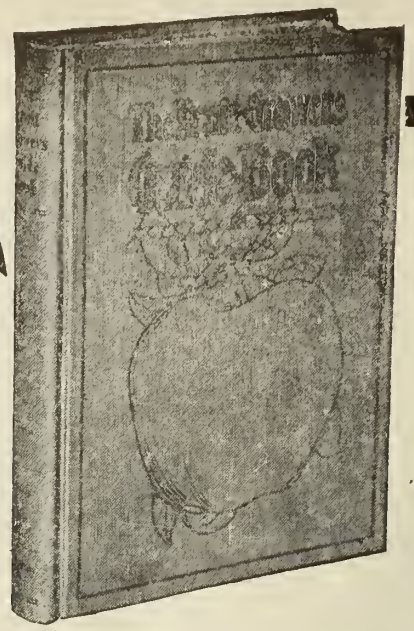
Begin by slaking the lime in a small amount of water in a large iron kettle. When the slaking lime generates a considerable amount of heat, sprinkle the sulphur in gradually, thus utilizing the heat of the lime in cooking the sulphur. At this stage, a fire should be made under the kettle and the solution kept up to the boiling point, adding the water a little at a time. Vigorous boiling should be maintained for about an hour, at the end of which time the solution becomes a dark orange in color and should have very little sediment at the bottom. Whether it shows sediment or not, the solution should be strained through a fine strainer into the spray tank and used while still hot.

Self-Boiled Lime-Sulphur.

Another method of making the lime-sulphur spray produces what is called the self-boiled mixture, which seems to have properties considerably different from the mixture described above. This self-boiled mixture seems to be especially valuable as a fungicide, particularly on the peach. It controls the leaf-curl, the brown rot, the scab, and, when arsenate of lead is added at the spraying, after the blossoming season, the curculio also. The most recent methods of making this mixture, as worked out by Scott and Ayres, of the United States Department of Agriculture, are as follows:

The 8-8-50 formula is recommended. This mixture can best be prepared in rather large quantities—say enough for 200 gallons at a time, making the formula thirty-two pounds of lime and thirty-two pounds of sulphur, to be cooked with eight or ten gallons of water, and then diluted to 200 gallons.

The lime should be placed in a barrel and enough water poured on almost to cover it. As soon as the lime begins to slake the sulphur should be added, after first running it through a sieve to break up the lumps. The mixture should be constantly stirred and more water added as needed to form a thick paste at first, and then gradually a thin paste. The lime will supply enough heat to boil the mixture several minutes. As soon as it is well slaked, water should be added to cool the mixture and prevent further cooking. It is then ready to



This Book Given to You FREE

Write for it Today

The Book for the Beginner and the Orchard Expert

It tells you the great secrets of growing fruit,—just how to make a success of your orchard. It tells how to bud and graft, how to prune, how to fight insects and rots that destroy your crops, how to pack your fruit, and hundreds of other vital, essential, fundamental facts about successful fruit growing

You can make more money from your orchard when you know just what to do when things go wrong. This great book, The Fruit-Growers Guide-Book is the **Rule and Guide to**

SUCCESS

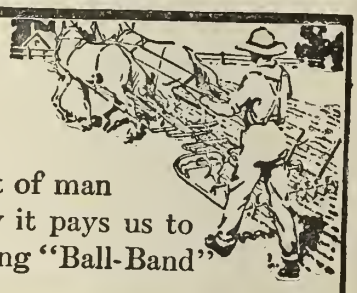
It is given to you absolutely free with a year's subscription to the world's greatest paper, The Fruit-Grower and Farmer. Thousands of copies of this great book have been sold at $1 each.

This is your chance to get it absolutely FREE. Cut out this advertisement, pin a dollar bill to it, sign your name and address, and mail today. The next mail will bring you a copy of this unequalled book and begin your year's subscription to The Fruit-Grower and Farmer.

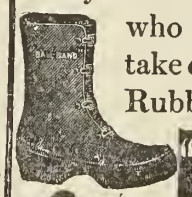
Don't miss this exceptional opportunity. Act at once. Address

The Fruit-Grower and Farmer
ST. JOSEPH, MISSOURI

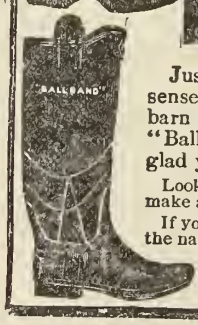
When you "lap your harrow half" you do your work twice as well

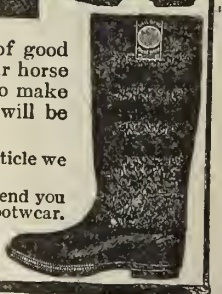


If you do this you are the sort of man who can understand why it pays us to take double pains in making "Ball-Band" Rubber Footwear.



"BALL (Red) BAND"





Just as you know how to put a little bit of good sense here and there—like a wide door in your horse barn to prevent bruising hips—we know how to make "Ball-Band" Boots and Arctics so that you will be glad you bought them.

Look for this Red Ball in buying. It is on every article we make and is the sign of footwear you can trust.

If your dealer can't supply you, write us and we'll send you the name of a nearby dealer who sells "Ball-Band" Footwear.

Mishawaka Woolen Mfg. Co., Mishawaka, Ind.

"The House That Pays Millions for Quality"

HONEST MAN OR WOMAN WANTED

A large, well-known company, about to spend $100,000 on a tremendous advertising campaign, requires the services of a bright man or woman in each town and city. The work is easy, pleasant and highly respectable, and no previous experience is necessary. We will pay a good salary and offer an unusual opportunity for advancement to the person who can furnish good references. In addition to this salary, we offer a Maxwell automobile, a Ford automobile and over $3,000 in prizes to the representatives doing the best work up to December 31. In your letter give age and references. Address Ira B. Robinson, Advertising Manager, 902 Doty Bldg., Boston, Mass.

MEDICINAL ROOTS—Golden seal, Senega, Pink Root, Etc. Easily Grown. Profits large. Send for prices. SELIGMAN PLANT COMPANY, SELIGMAN, MO.

be strained into the spray tank, diluted and applied.

The stage at which cold water should be poured on to stop the cooking varies with different limes. Some limes are so sluggish in slaking that it is difficult to obtain enough heat from them to cook the mixture at all, while other limes become intensely hot on slaking. Care must be taken not to allow the boiling to proceed too far. If the mixture is allowed to remain hot fifteen or twenty minutes after the slaking is completed, the sulphur goes into solution, combining with the lime to form sulphides, which are injurious to peach foliage. It is very important, especially with hot lime, to cool the mixture quickly by adding a few buckets of water as soon as the lumps of lime have slaked down. The intense heat, violent boiling, and constant stirring result in a uniform mixture of finely divided sulphur and lime, with only a very small percentage of the sulphur in solution. The mixture should be strained to take out the coarse particles of lime, but the sulphur should be carefully worked through the strainer.

In using arsenate of lead with this mixture it should be added at the rate of 2 pounds to 50 gallons.

Soluble Oils.

Many orchardists prefer to use the soluble oils. These are now extensively offered in the market, mostly under various trade names. They are products of the kerosene industry, the oil being made up to approximately the same specific gravity as water and in such a manner that it will mix with water readily under favorable conditions. The usual way of applying these oils is to put them into the spray tank with water in the proportion of one gallon of oil to fifteen or sixteen gallons of water. The solution is then stirred vigorously by pumping it back into the barrel. It is then ready for immediate use.

This case of mixing forms a great argument in favor of the soluble oil as compared with the lime-sulphur sprays. Furthermore, it is much less caustic when it strikes the hands and face of the operator, and this is also an important advantage. One of its most serious defects is that it cannot be seen on the tree as the lime-sulphur mixture can, and it is difficult, therefore, to tell when the tree is fully covered.

A very common practice amongst peach-growers, and one which is on the whole to be recommended is the use of soluble oil and lime-sulphur in alternate years. When heavy spraying is to be done in cases of severe and neglected infestation, lime-sulphur should be used in the fall and the soluble oil in the spring.

(To be continued.)

Prominent New Strawberries

By Albert F. Tenney, Massachusetts

Prominent New Strawberries.

Of all seasons I can recall, the present has been the worst with one exception, for strawberries. A combination of droughts, late frosts, etc., in 1911 and 1912 held back my strawberry plants from making runners, froze the blossoms and baked the fruit. I did, however, see enough of certain varieties this year to convince me that there are very valuable varieties not yet universally known. One of these is Abington. Although most of the blossoms were killed this year, enough were left to convince me that Abington will produce the biggest, brightest and smoothest berries of any staminate sort I have ever seen. Abington seems like a staminate Sample, only the berries are larger and better, if any different.

Collossus is another variety that appears to be worthy of trial by those who like Bubach but who cannot coax that variety to make plants fast enough. Thus far I could scarcely tell the difference between these two varieties, except that Collossus is a fine plant maker.

The most promising variety that is strictly new is Heritage. This is a staminate variety and ripens late to very late, some berries lasting to the latter part of July. The berries, when grown under favorable conditions, are apparently very large, though not smooth as Abington. Judging from appearance this year, the plants are extremely large and of that type that usually appears to yield only a very moderate crop, but when the big berries are picked and the season's final account summed up, the Heritage will, I think, hold its place among the best.

Still another variety that is highly spoken of about here is Miss Boston. I am not quite sure I have met this estimable lady as yet, for all the plants of Miss Boston that I have seen thus far are no other than Minute Man. However, as both varieties are pistillate, no wonder they are easily mistaken. I obtained my plants of Miss Boston from a reliable party and am sure it is Minute Man, unless someone else has a different strain than mine. Had the weather been favorable, I should have had a large crop of this variety, I am certain.

Taking into account the drought of last year, the late frost and still worse drought of this year, I think Dunlap produced the best crop of any variety I fruited this year. On another farm I saw berries of the Jessie type, possibly the old Jessie itself, that yielded a fine crop of fruit right in the hottest weather. In fact, this was the best field of strawberries I saw during the season.

I found that a heavy coat of mulch in the form of marsh rick kept my berries bright and fresh, even when the thermometer was daily climbing to over 100 degrees in the shade.

All of my plants this year were on good strong corn land, fairly moist and never before planted to strawberries. The fertilizer used was hen manure, plowed in before the plants were set. Then, as the plants were set, a fertilizer analyzing 6-8-11 was put in the rows. This produced a fair crop of plants, even though the drought in 1911 prevented my setting them until about June 1st. Setting the plants in furrows, the old fashioned way, helped, too, in hastening the plants to earlier running, since they began at once to feed on the fertilizer that was made up of nitrate of soda, bonemeal and sulphate of potash.

ALBERT F. TENNY,
Massachusetts.

Use Better Stallions.

Sixty-one per cent of the stallions in the Middle West are grades, and most of these are scrubs. The proportion will run almost as high in most of the Western states. Such figures do not lend any great encouragement for the immediate future of farm horses.

The only way that grade and scrub stallions will be driven out of the country is by a campaign of education having for its object the education of every owner of mares in regard to the value of a purebred sire. The poor stallions are kept "in our midst" by low service fees. Of course, a scrub stallion that is worth just a few hundred dollars may be kept at a profit on a much smaller fee than a horse worth many times as much. So the owner of the mare will save a few dollars on the service fee, and lose perhaps $75.00 on the value of the colt—only he does not see he will lose many times the difference in the service fee, if he uses a poor animal.

But if a grade horse is smooth and of fairly good quality—and many of them are—why should they not be as good sires as animals of equal quality that are purebred? Well, the reason is they never have the inherited intensification of the characters of a particular breed which enables the purebred to transmit its character to its offspring. You never can be certain of but one thing when you breed to a grade stallion, and that is this: It would pay much better if you had bred the mare to a purebred stallion.

Renew your subscription today.

Your Telephone Horizon

The horizon of vision, the circle which bounds our sight, has not changed.

It is best observed at sea. Though the ships of today are larger than the ships of fifty years ago, you cannot see them until they come up over the edge of the world, fifteen or twenty miles away.

A generation ago the horizon of speech was very limited. When your grandfather was a young man, his voice could be heard on a still day for perhaps a mile. Even though he used a speaking trumpet, he could not be heard nearly so far as he could be seen.

Today all this has been changed. The telephone has vastly extended the horizon of speech.

Talking two thousand miles is an everyday occurrence, while in order to see this distance, you would need to mount your telescope on a platform approximately 560 miles high.

As a man is followed by his shadow, so is he followed by the horizon of telephone communication. When he travels across the continent his telephone horizon travels with him, and wherever he may be he is always at the center of a great circle of telephone neighbors.

What is true of one man is true of the whole public. In order to provide a telephone horizon for each member of the nation, the Bell System has been established.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

Every Bell Telephone is the Center of the System.

Sulphur, Nitrate of Soda

Blue Vitriol

If you make your own Lime and Sulphur Solution, write us for prices on sulphur. We carry large stock in barrels and sacks. Ours is the best and cheapest brand for making solution. Goes into solution readily and stays in solution. We also carry large stock of best Nitrate of Soda in 200-pound sacks, ready for shipment. You can save money and get prompt service by dealing with us.

Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing

Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*

M. BRUNSWICK & CO., Rochester, N. Y.

PEACH *and* APPLE TREES—2c *and* UP

Strawberry Plants, Silver Maples, Plums, Cherry, Pear, etc. Sell direct to planters at wholesale and save 50 per cent. Free catalog.

Tennessee Nursery Co., Box 7, Cleveland, Tenn.

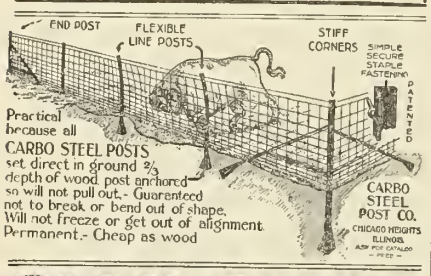
MYERS BUCKET BARREL or POWER
SPRAY PUMPS
FOR FALL SPRAYING

Are you going to Spray This Fall? If so, results are more certain if you use a MYERS OUTFIT—Bucket, Barrel or Power. Up-to-date dealers are glad to supply our Catalog, or we will mail you one direct. Better ask or write for it immediately—it's time to Spray.

F. E. MYERS & BRO.
169 Orange Street, Ashland, Ohio
ASHLAND Pump and Hay Tool Works

In writing please mention The Fruit-Grower and Farmer.

$1 Will Buy $2.50 Worth of Stock
Send for list. NO FINER Trees Grown Anywhere
A Full Line. Salesmen Wanted.
Sunny Slope Nursery, Hannibal, Mo.



FARM FENCE
11½ cts. a rod for a 26 in. high hog fence; 16 1-2c. a rod for 47 inch high stock fence; 23c a rod for a 50-inch heavy poultry fence. Sold direct to the farmer on 30 Days Free Trial. Special barb wire, 80 rod spool, $1.40. Catalog free.
INTERLOCKING FENCE CO.
BOX 50 MORTON, ILLINOIS.

Cheap as Wood.
We manufacture Lawn and Farm Fence. Sell direct shipping to users only, at manufacturers' prices. No agents. Our catalog is Free. Write for it today.
UP-TO-DATE MFG. CO. 976 10th St., Terre Haute, Ind.

HOG FENCE
26 inches high 16 cents a rod
100 other styles of Hog, Farm and Lawn Fencing.
Buy from factory direct and save dealers profit. Large Catalogue FREE.
KITSELMAN BROS.
Box 125 Muncie, Ind.

STRONGEST FENCE MADE
FROM FACTORY DIRECT TO FARM
26-inch Hog Fence,.....13½c.
49-inch Farm Fence,.....22c.
48-inch Poultry Fence.....22c.
80-rod spool Barb Wire, $1.40
Many styles and heights. Our large Free Catalog contains fence information you should have.
COILED SPRING FENCE CO. Box 125 Winchester, Ind.

TIGER-FENCE
Shipped direct from factory to you. No Middle-man's profit to pay. Twenty Years' experience enables us to produce the most Durable, Strongest, Best Galv. Fence made. If not as represented return at our expense. 60-Styles, Diamond and Square Mesh, 11½ to 35c per rod; 80-rod spool Galv. Barb Wire $1.40. Get our FREE CATALOG and prices before placing orders.
Tiger Fence Co. Clarksville, Tenn.

Quicker Ways for Canning

Successful Method for Canning Corn, Beans, Peas and Meat.

By Mrs. G. A. Mitchell, Illinois

I have just finished reading the article in the August number about canning vegetables, and feel as though I should contribute a bit of my experience. I have been very successful and my way is so much quicker than that advocated by the Department of Agriculture; and who needs quicker ways of doing things than the busy housewife?

Here is my method for canning corn: The day before I intend to can, I get the jars ready by putting a little water in the jar, and after adjusting a new, heavy rubber, screw on the top. I then turn the jar upside down and shake vigorously. If no water oozes out, it is all right, but if the ring leaks, discard it. Don't try to doctor the jar by putting on two rubbers or pounding down the lid, as that is unsatisfactory. Without testing the jar in this way there is no possibility of knowing if the jar is perfectly sealed after it is cooked, as there is not then sufficient juice in it to ooze out. If the jar is not tightly sealed the result will be as a former writer said: "the smell is so intense that you never stop to empty the jar."

I do not pull the corn from the stalk until the morning I intend to use it, as it loses its sweetness by lying over night. More than that, it is apt to sour before I can get it ready to boil, especially in such warm weather as usually prevails at corn canning time. I cut and scrape the corn from the cob, raw, and pack it in the jars with a small wooden potato masher or a wooden stick with a square end. The jars are filled about one-fourth full and pressed until the juice comes level with the corn. More corn is then added and pressed until the jar is level full. The corn cannot be kept covered with juice, as it settles back after the pressure is removed. But that does not matter, and neither does a few vacant spaces which may be seen inside the jars that are not filled with juice. It is almost impossible to have the jars filled solidly. When the jars are full, wipe the inside of the neck of the jar so there will be no loose grains of corn to interfere with sealing. Then screw on the lid as tight as possible, using the thumb and front finger. Wrap a cloth or a little coarse twine around each jar to keep the jars from bumping together in the canning boiler. Cover the jars with cold or warm water, bring to a boil and boil for three hours steadily. Remove from the boiler and screw down the top very slowly, as a quick turn sometimes causes the rubber to press from under the lid, since it becomes soft from the long boiling. Sometimes a rubber will wrinkle when the lid is tightened, but that will not matter if it stays under the jar lid all around. If, by chance, a rubber cuts through from a sharp lid, it must be replaced by a new one, but don't under any conditions, remove the lid Just loosen enough to tear ut the old one and work in the new one, doing so as quickly as possible.

Set the jars upside down and leave until the next morning, but no longer, as they should be put in a cool, dark place at once. Be sure not to take hold of the covers when picking them up, as it might cause them to become loose.

I prefer to use one-quart glass jars, and always sterilize the jars and lids by placing them in boiling water for a few minutes before filling the jars.

In addition to corn, I have successfully canned beans and peas in the same way, only I fill the jars with cold water after filling them as tightly as possible with the vegetable. This is necessary to conduct the heat through the mass, as there is no juice to be pressed from such as these. I also add a teaspoon of salt when the jar is about half full of the vegetable.

In late winter, when squash and cabbage have kept about as long as they will, I can enough to last until new ones arrive. I run both through the meat grinder and then pack in jars same as corn. I add water to fill jars of cabbage, but none on squash, as it is better dry. Then proceed the same as before, only do not boil the cabbage more than one hour.

I also can beef by the same method, only boil for four hours instead of three. When the meat is very tough it may be necessary to boil even longer. Cut the meat into pieces small enough to go into the jar and press as solidly as possible, adding a heaping teaspoonful of salt to each jar. Put a piece of tallow on top so the tallow will boil out and form a coating over the meat. Add no water to the meat, and leave about half an inch at the top for swelling. Don't turn the meat jars upside down to cool. The jars will not be quite full when cold, but that will not matter. I have canned as high as forty jars of meat in one winter in this manner, without losing a jar Then the satisfaction of knowing you have a supply of good meat for any emergency on ten minutes' notice is worth many times the trouble, to say nothing of the saving of money in buying beef by the quarter instead of by the pound.

Canning Tomatoes for Market.

Having had two years' experience with a home canner, I decided, early in the spring of 1911 to grow a crop of tomatoes and put them up for market. I ordered a two-thousand capacity canner and five thousand No. 3 packers cans. Near our spring stood a grove of maple, mulberry and locust trees which made a very nice shade to work in. Here I built a 12x16 feet boxed building. When my outfit arrived I set it up in one end of this building, putting my cans in the other end.

I prepared my seed beds by digging a 3x6 foot hole, 16 inches deep, filling in a little straw first, then I put 10 inches of fresh manure on this and three inches of forest soil. I then scattered an 8-3-5 fertilizer over the bed and mixed well with the soil. My seed, the Earliana for first canning and the New Stone for main crop, were sown about March 20th. I made a frame, covered it with cheese cloth and fitted it over the bed on days that were cool, taking it off when the weather was warm. On March 26th, my plants were up. About April 10th I transplanted them in a cold frame. Here I cared for them until May 10th, when I began setting them in the field which I had prepared and laid off in two plots.

Plot No. 1 contaned one acre. The rows were marked off four feet apart and a handful of manure dropped every four feet in the rows. A little soil was pulled over the manure. Plot No. 2 contained one-half acre, and was marked off the same as plot No. 1. Hills were made four feet

A farmer wrote these books!

—a man who knows farming from A to Z. He traveled through thousands of square miles of the *best* sections in Arkansas and Texas, along the Cotton Belt Route; and found out where the *real* farm opportunities were—the kind that *he*, knew *you* would like to hear about.

He doesn't generalize. He comes right down to brass tacks and tells you what Farmer Tull is raising—shows you actual pictures of Farmer Tull's crops, etc.; and tells you what the same kind of land, near Tull's place, would cost you *now*. He got the personal experiences of scores of farmers in this way; and took actual photos of their places. He points out the best sections for wheat growing, for corn, fruit, truck, etc.—in plain words he sifts the whole situation down to a point where you can say to yourself: "*There* is the most likely locality for *my* line of farming—I'll go and investigate." (And with low round trip fares via Cotton Belt Route twice each month your trip will cost mighty little.) Send a postal *today* for

Your free copies

of these books—115 farm pictures and 100 pages of farm facts! I know you'll be glad to get them. Write *now*.

E. W. LaBeaume, Gen'l Pass'r Agent
1450 Pierce Bldg., St. Louis, Mo.

MAKE $150 TO $300 PER MO.
Secure the Agency for the Gloria Lighting Systems, Table Lamps, Self-heating Irons, Bathroom Outfits and Hot Water Heaters. Lighting Systems for homes, stores, churches, that light instantly. Anyone can install and operate in two hours' time. Table Lamps for library or parlor. Self-heating Irons cost less than 1 cent per hour to operate. Saves steps and the over heating of the kitchen. Send for our catalogue and full particulars.
Gloria Light Company
1265 Washington Boulevard
Chicago, Ills.

Rubber Stamps
You need Rubber Stamps for marking berry boxes, crates, stationery, etc. Send for free catalogue.
Gardner Office Supply Co. SPRINGFIELD MISSOURI

FERTILE FARMS and Unimproved Lands in Delaware
diversified farming, delicious fruits and ideal homes. For information only, address State Board of Agriculture, Dover, Delaware.

apart and I used a small medicine glass of a fertilizer analyzing 8 per cent phosphoric acid, 3 per cent nitrogen, 5 per cent potash, mixing it well with the soil. I will say there was little difference in the yield from the two plots.

I used Master's Little Giant plant setter for setting them in the field. By running my belt through the handle of a grape basket filled with plants I could get along fairly well, but with a boy or girl to drop the plants in the setter I could get along much better and could set out one thousand plants in one and one-half hours. To do this, it is necessary to have nice plants and the ground must be in good shape. Plants set out this way will grow much better than hand-set plants. I had some trouble from cut worms but none from failure to grow, although it was the dryest season ever known in this part of the country.

By July 10th, my Earlianas were getting ripe and in a few days I found I must "get busy" if I saved my crop of tomatoes. There were only three of us in the family to work at the canning, so I hired some help. Hands were scarce, but by working days and hunting hands at night, I managed to save most of the crop but I had to work a little on Sundays.

As I had to use my boiler for scalding, exhausting and prossessing, I found my outfit was entirely too small and had to run it until twelve and sometimes two o'clock at night to keep up with the prossessing and we never put up over five hundred cans per day at best and I had as high as five peelers and two fillers to help me.

In the midst of the packing season I fond my caps were one thousand short. This left me with one thousand cans and no caps for them. I ordered one thousand caps by express from Baltimore and went five miles to a friend and borrowed five hundred. I used the last one of this five hundred on the day the one thousand arrived. Two days later I found I didn't have cans enough for my crop, so I ordered 1,000 and borrowed the same number from the same party who furnished the caps. On the day I received cans ordered the party referred to above 'phoned for his, so I killed two birds with one stone and killed them "on the wing." Now this was on Saturday, and on the Monday following, after hauling them in (I used bushel boxes and hauled them in on a sled) I found I had seventy-five bushel to work up that day. I thought of saying my prayers and going out of the canning business. A second thought and I sat down and ordered 2,000 more cans. We finished canning tomatoes early in September and found we had put up six thousand five hundred. This left me one thousand five hundred empties, so we filled them with string beans and sweet potatoes.

My labels were ordered from the factory in Chicago early in August, but they were so flooded with orders I did not get them for two months, and by the time they arrived I had orders for over one hundred dozen tomatoes. I found the labeling was a light job compared to the picking, peeling, capping, exhausting, prossessing, etc.

My goods were superior to any put out by the wholesale people, so I had little trouble in disposing of all I had put up, at $1.00 per dozen. The last 100 dozen I sold at $1.05. I bought 15 cases that I had never delivered for $1.10, resold them for $1.20. A few days later I could have sold all I put up for 25 per cent more on the dozen. Sold too soon, you see. I received orders for over two hundred dozen that I could not fill. I made my own cases out of the large cases that my empties came in.

I paid out about $31 for hired help; my fertilizer cost me about $5; my cans cost me about $150; gasoline $2. This crop of tomatoes grew on as poor a land as there is to be found in the state of Virginia. This year I am trying it again, but on a larger scale.

D. C. TRITT.

Virginia.

Pear Tree Pruning.

In pruning the pear tree, at least for the first three years, we follow the same rule as we do for pruning the young apple tree. In this country, New Mexico, I think it is advisable to have more or less of an open center. We give this shape to the tree by cuting back the leader, at the time of transplanting, this induces the side branches to grow. I believe that a tree should not have more than three to five scaffold limbs and they should not grow from about the same place, but should come out from different places along the stem from two to three or four inches apart.

The first year's growth should be pruned back quite severely; ordinarily we cut considerable of this growth back, leaving about six to eight inches of the limb. Always cut to an outside bud. The following year's growth as a rule is very vigorous and ordinarily there are two or more limbs growing from each of the three or four scaffold limbs that have been started. The following season at pruning time we should remove all of the limbs with the exception of one on each of the scaffold limbs and the one that remains should be again cut back half or more of its growth. Cut to an outside bud.

This method of pruning tends to keep the center open and at the same time strengthens the main trunk of the tree and the base of the scaffold limbs. One should also make an effort to have the lowest of the scaffold limbs come out at the southwest side of the tree. The third pruning should be similar to the second; that is, thin out the branches on each side of the scaffold limbs, leaving the leader, but cutting it back again.

After this pruning, pears or apples should not be cut back any more. Simply thin out the interferences and those limbs that may be coming out where they are not needed. From this time on, we should encourage what we ordinarily call the feathering out of the limbs, or in other words, the formation of fruit spurs. The more the tree is cut back, the more we encourage a vigorous growth and the more vigorous the growth is in young trees, the less fruit spurs there will be.

Another reason why we recommend that pear trees should have three or four or even five scaffold limbs is that in case blight should start, we could have some recourse in the treatment of such trouble. As a rule the blight begins at the top of the limbs on the succulent growth. If the disease should attack the tree on any one of the limbs, we could easily remove the branch without materially affecting the size or form of the tree.

FABIAN GARCIA,
New Mexico Exp. Sta.

Seeing Is Believing

You Can't Afford To Buy Any Range Unsight Unseen

If you were buying a horse, you wouldn't want any printed description—you would want to look him over mighty carefully so as to know you were getting your money's worth. So, before deciding upon any range the wise woman will go to the local dealer and examine closely into the superior points of merit of the *Great Majestic Range*—it will stand the test of comparison, point for point, with any range ever made. When you have made this comparison—your choice will be the range with a reputation—built on honor—the

Great Majestic
Malleable and Charcoal Iron Range

A Perfect Baker

A Fuel Saver

Aluminum Top Reservoir

Aluminum Top Reservoir

Outwears Three Ordinary Ranges

It is the only range made of malleable iron and charcoal iron. Charcoal iron won't rust like steel—malleable iron can't break. It outwears three ordinary ranges.

Economical—Saves Half Your Fuel

The *Majestic* is put together with rivets—joints and seams remain air tight forever. Oven lined with *pure asbestos board—you can see it.* Takes but half the fuel—assures perfect baking.

All Copper Reservoir—Against Fire Box

The reservoir is *all copper* and heats through copper pocket, stamped from one piece, setting against fire box. Holds 15 gallons of water. Just turn lever and it is instantly moved away from the fire.

Greatest Improvement Put In a Range

—increasing strength and wear of a *Great Majestic* more than 300% at a point where other ranges are weakest—many other exclusive features. *Ask to see it.*

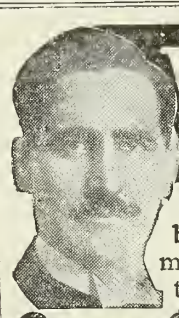
For sale by dealers in nearly every county in 40 states. Write today for our booklet, *"Range Comparison."*

Majestic Mfg. Co.
Dept. 92
St. Louis, Mo.

The Range with a Reputation

Ask Your Neighbor

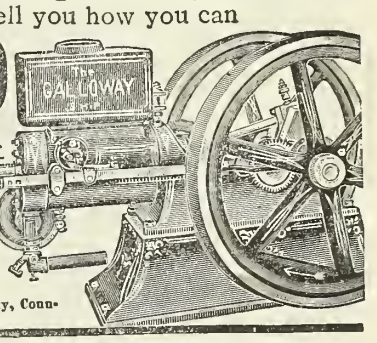
It Should Be In Your Kitchen



WANTED!

The name and address of every possible gasoline engine buyer who reads this ad. Send me your name *quick* for my latest *special offer* on the *best* gasoline engine that ever turned a wheel. Let me tell you how you can

Save $50 to $300



real *cash*, according to the size engine you need—sizes 1¾ to 15 h. p. Don't doubt—write me *now*. You never lost anything by getting information.

Why shouldn't you deal with me direct—the manufacturer—and keep in *your own pocket* the dealer's and jobber's profits? Get your engine fresh from the paint shop—fully tried out and tested. You simply must get my offer—and see my big four color catalog. Don't wait—write your postal or letter NOW before you turn over this page.

Wm. Galloway, President, THE WM. GALLOWAY CO.,
1035BW Galloway Station Waterloo, Iowa

REMEMBER—We carry stocks of all our machines at Chicago, Kansas City, Council Bluffs and Minneapolis—insuring prompt shipment.

APPLE BERRY BOXES

WESTERN WHITE PINE

Local Shipments—Carload Lots.
Place Orders Early.
F. A. CARRIER
Dwight Building. Kansas City, Mo.

In writing please mention The Fruit-Grower and Farmer.

Compressed Air SPRAYERS

Require but **one engine** and **one compresser** to operate any number of tank outfits. Nothing to get out of order in the orchard. Any one can spray who can handle a nozzle.

W. H. OWEN SPRAYER CO., SANDUSKY, O.

In writing please mention The Fruit-Grower and Farmer.

IN THE SOUTH

No doubt about the profitable returns from Early Vegetables, Oranges, Grape Fruit, Celery and Sugar Cane in the famous Manatee Country, Brooksville and Annutta-lagga, Hammock Area. Lands can be secured reasonably, yielding several crops annually. Delightful and healthful climate. Water plentiful. Good scoools and churches. Quick transportation to big markets. Write for descriptive booklets J. A. PRIDE, Gen. Ind. Agt., SEABOARD AIR LINE RAILWAY, Suite 367 NORFOLK, VA.

2 TO 3 CROPS A YEAR

FREE TO ALL

Our Catalogue of Dutch Bulbs, Winter Blooming Plants, Trees, Shrubs and many other articles for Fall planting. Address,

Nanz & Neuner, LOUISVILLE, KY.

GET IT FREE

CATALOG OF THE MUNSON ALWAYS RELIABLE NURSERIES DENISON, TEXAS

Have Abundant WATER SUPPLY

Water delivered any height and distance, if you have a flowing spring or small stream, by installing an Aquaram Engine. Works Automatically. Constant flow. No running expenses. Send for catalog L. AQUARAM ENGINE CO. 221 FULTON ST. NEW YORK CITY

WE TEACH YOU

Learn to operate and repair automobiles. Training on vulcanizers, drill presses, lathes, Pattern making, moulding, brazing and driving. Free catalogue. Lincoln Auto School, 2357 "O" St., Lincoln, Neb.

40 ACRES OZARKS-$5

MONTHLY. IN BEST PART OF MISSOURI, 150 miles S. W. St. Louis, 10,000 acres sub-divided. Take your pick; fine fruit, grass, grain, vegetable land. Price $10 to $20 per acre, one-tenth down, balance easy payments. Your chance for home or investment. LOTT, "THE LAND MAN" 307 Finance Building Kansas City, Mo.

$2.98

Actual Factory Prices At Last!

Less than *half* dealer's prices—less even than the dealer himself must pay! Now, for the first time you may buy the very finest furniture direct from the maker and at a STUPENDOUS SAVING!

Genuine Solid Oak—rich golden finish. Upholstered in best Royal Leather—guaranteed not to peel or crack. Extra heavy frame. Carved front posts. Wide arms. Large, roomy seat over oil tempered steel springs. Price only $2.98. Order by No. 21.

The Last Middleman Now Cut Out!

For the past 30 years we have owned and operated the *largest furniture factory in the world* selling direct to the user. OVER 1,000,000 SATISFIED CUSTOMERS. No salesmen—manufacturers, agents, jobbers, wholesalers or retailers—not even *one* middleman's profit to pay.

30 Days' Free Trial We take all the risk ourselves. Send us only $2.98, the net factory price of this rocker—use it for a whole month—*then decide*. If not perfectly satisfactory in every way, just return it and we'll refund all you paid with transportation charges *both ways*.

Write for Our Catalog—FREE!

Our magnificent catalog is free for the asking. Your choice of over 5,000 different bargains—beds, chairs, sewing machines, everything you need to beautify your home on this amazingly liberal plan. Send just your name and address to-day.

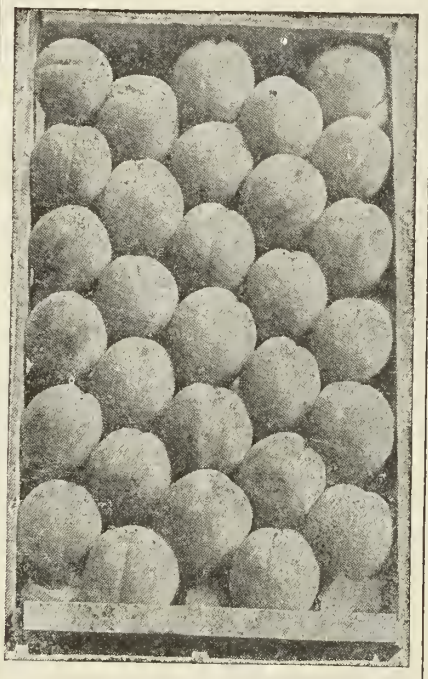
LINCOLN, LEONARD & CO., Station 4537 CHICAGO.

Harbest on the Western Slope

There are peach sections and peach sections, each claiming to be the largest and best in the country, but this year the growers in the lower Grand Valley, Colorado, claim that they are entitled to recognition as leaders. The crop for 1912 was a very large one, and it ripened in a hurry when it started. It is said that in one day 125 cars of peaches were shipped from Mesa County, Colorado, the peach belt extending from Palisade to Fruita, a distance of about twenty-five miles.

The crop for 1912, while large, was by no means of the usual high quality harvested in this favored belt. The very unusual season retarded the ripening of the fruit, and many peaches were undersize. The cool season also prevented the fruit from coloring up as it usually does, and prices were not as good as in ordinary years. However, some big tales come from that section, of splendid returns from this year's crop.

While the peach belt of the Grand Valley extends for miles up and down



THE COLORADO METHOD OF PACKING PEACHES.
—(Photo by Deane.)

the Grand River, the heaviest planting is about the pretty little town of Palisade. Here the orchards are usually small, but practically every available foot of land is planted to fruit trees. While peach trees are most generally planted, there are many cherry and pear trees, with a few apples. Many orchardists plant their land to peach trees, with an avenue of Duke cherry trees along the road, making a very pleasing effect.

Peach trees in the Grand Valley are headed low, and the best growers keep their bearing trees fairly open, to permit proper coloring of the fruit. Practically all orchards are kept clean throughout the summer by frequent cultivation, but many thoughtful men are now considering the planting of cover crops, to restore humus to the soil, and to add nitrogen.

Until this season all peaches from the Grand Valley have been packed in what is known as the "California box," a flat box holding about twenty pounds of fruit. The peaches are wrapped in paper and packed in two layers in the box. Some of the boxes are four inches deep, some four and a half, and still others are five inches, these various depths being necessary to accommodate different sizes of fruit.

One of our illustrations shows the style of pack used. This represents only one layer in the box, but the other layer is very much the same, except that the peaches fit into the spaces between the peaches in the layer shown in the illustration. These boxes are very handy packages and carry well to market. The only objection to their use is their cost, about 7c each, and the cost of packing, which amounts to 2c per box.

This season the fruit came so fast, and so much of it was undersized and good only for canning and preserving, that the growers tried the bushel baskets which have been used by some of the growers in Missouri and Arkansas for several seasons past. These baskets make very convenient packages, and as they have slatted tops, a buyer can inspect his purchase without removing the lid.

The fruit-growers of the Grand Valley are well organized, and practically all fruits are sold through associations. Each grower packs his own fruit, marks it with his number in the association, and hauls it to the platform of one of the associations. Some of the associations, and particularly the Grand Junction Fruit-Growers' Association, have several loading stations At these stations are a number of inspectors, who open a number of boxes from every load of fruit delivered, and inspect it as to its quality. If the fruit is over-ripe, it may be condemned for shipment; if the pack is not just what it should be, the package may be cut to a lower grade; if the peaches are too green, they may be condemned, and if without color, the grade may be cut. All this is done in the presence of the man delivering the fruit, and before the fruit is received and a receipt given. There can be no misunderstanding, therefore, for if the fruit is cut in grade for any cause, the receipt shows it. When once passed upon and accepted by the inspector, the lot of fruit is supposed to be up to the grade marked on the box, and it goes in with other fruit of same grade, all on an equal basis.

It is a busy time during the peach-shipping season, and inspectors and loaders work far into the night. As one crew of men leaves off work another begins, so that fruit unloaded on the platform at about 6 o'clock in the evening will likely be loaded and started on its journey by midnight. A brief breathing spell is given the shipping associations between the peach-shipping season and the time for shipping apples, but this year the seasons run almost together, and by the time some growers are finishing their peaches others have started on Jonathan apples. Indeed, at Paonia, Hotchkiss and other places the two fruits have had practically the same season, due, no doubt, to the very unusual weather of the past summer.

⚜ ⚜

The standard apple barrel, according to the Sulzer bill recently passed by Congress and approved by President Taft on August 3, has the following dimensions: Length of stave, 28½ inches; diameter of head, 17⅛ inches; distance between heads, 26 inches; circumference of bulge, 64 inches outside measurement, representing as nearly as possible 7,056 cubic inches. The law takes effect July 1, 1913, and will affect the apple pack next season.

⚜ ⚜

Is there a fruit-marketing association in your community? Right now, while the marketing of apples is at its height, and while the difficulties of finding a buyer who will pay you a living price are fresh in your mind, is the time to begin the organization of an association in your community. If you don't know how to go about it write to The Fruit-Grower and Farmer. It will suggest ways that will help you.

⚜ ⚜

If you like The Fruit-Grower and Farmer ask your neighbors to subscribe.

Beacon Burner FREE

FITS YOUR OLD LAMP.

100 Candle Power Incandescent pure white light from (kerosene) coal oil. Beats either gas or electricity. COSTS ONLY 1 CENT FOR 6 HOURS We want one person in each locality to whom we can refer new customers. Take advantage of our Special Offer to secure a Beacon Burner FREE. Write today. AGENTS WANTED.

HOME SUPPLY CO., 47 Home Bldg., Kansas City, Mo

Fall Planting BULBS

For early spring blooming flowers. Can supply you these now. Send for handsomely illustrated catalog.

ROBERT BUIST COMPANY Bulb and Seed Growers PHILADELPHIA, PA.

Apple Barrels

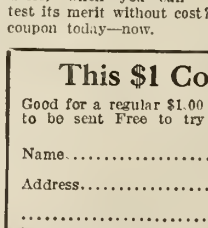
Standard size Apple Barrels. Also Nested Bands and Nested and Knock Down Barrels.

LEON MILLER, WAYNESBORO, VA.

Fruit, Shade, Ornamental TREES *and* SHRUBS

ONE ACRE PEONIES, GLADIOLUS Bulbs, Hardy Phlox, Roses, Iris, Dahlias and Cannas. All stock has made a fine growth this summer. Send for my FREE catalogue today.

L. F. DINTELMANN Box 262. Belleville, Ill.



In the Spring nursery stock must often be planted in soggy soil. In the Fall the soil is always dry. Freezing settles soil about roots and plants are ready to start in spring. Nurseries are not so rushed—you get better service. Stock is all vital—none injured by poor storage. Our 48-page catalog is free. Send for it today. Planting season Oct. 15th to Nov. 15th or later.

HOPEDALE NURSERIES Dept. M. Hopedale Ill.

RHEUMATISM

My New External Remedy So Good That I Take All Chances on Results

COUPON BRINGS IT TO TRY FREE

I am so sure that my Drafts will bring relief to you, no matter how bad your case, that I want you to try them at my expense. Send my coupon with your name and address, and by return mail you will get a regular Dollar pair of my famous Magic Foot Drafts to try free. If you could read my letters telling of marvelous cures, you will believe me when I say that I know of nothing so safe and sure for Rheumatism of every kind, no matter where located or how severe, as my Drafts, which are already in demand all over the civilized world. We have letters even from cases of 30 and 40 years standing saying that at last they have been cured. But it takes very little faith to fill out and mail a coupon and then if you are satisfied after a thorough trial, you can send me One Dollar. If not, keep your money. I take your word. How can you justify yourself for not investigating a harmless remedy so powerfully backed up by tens of thousands of letters from satisfied users, when you can test its merit without cost? Don't delay, but send this coupon today—now.

Fred'k Dyer, Cor. Secy.

This $1 Coupon FREE

Good for a regular $1.00 pair of Magic Foot Drafts to be sent Free to try (as explained above) to

Name.....

Address.....

.....

Mail this coupon to Magic Foot Draft Company, 1032 F, Oliver Building Jackson, Michigan.

Get Your Canadian Home From the Canadian Pacific

THE richest virgin soil is waiting for you in **Manitoba, Saskatchewan and Alberta.** Go where you can prosper, earn a farm home in a few years—farmers have paid for their farms with one crop. First prize of $1000.00 for best wheat in the world was awarded by American judges at the New York Land Show to a western Canadian farmer. Anyone can own land in Western Canada.

Land From $10 to $30 An Acre Ten Years in Which to Pay

The Canadian Pacific Railway offers you the finest irrigated land for intensive farming and non-irrigated land with ample rainfall for mixed and grain farming near established towns along its lines. Land adapted to grain growing, to poultry raising, dairying, mixed farming, and cattle, hog, sheep and horse raising. Select your own land. Decide what kind of farming you want to follow, and let the Canadian Pacific Railway put you on the road to fortune.

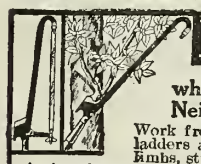
To workers of farms in the United States having sufficient agricultural experience and equipment, the Canadian Pacific will loan money for a period of ten years at 6% for the purposes of erecting buildings and completing the improvements on their newly purchased Western Canadian farms.

Ask for our handsome illustrated books on Manitoba, Saskatchewan and Alberta—mention the one you wish. Also maps with full information **free.** Write today.

D. D. Thornton, Colonization Commissioner

Canadian Pacific Railway
Colonization Department
112 W. Adams St., Chicago

FOR SALE—Town lots in all growing towns—Ask for information concerning Industrial and Business openings in all towns.



Prune 3 Trees

while your Neighbor Prunes One

Work from the ground, without ladders and without bruising the limbs, stripping the bark or injuring the trees. With the

MONARCH PRUNER

you work three times as fast and do better work. One stroke severs a stout branch. Cuts smooth and close, leaving no stubs or ragged wounds. Saw blade (attached in 10 seconds) cuts largest limbs. Lasts a lifetime. Pays for itself first day. *Money back if you say so.*

Write today for circular and prices.

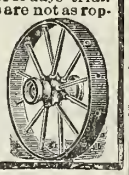
We want one agent in every county. Splendid opportunity and exclusive territory for live men. Write today for terms that mean money for you.

THE MONARCH PRUNER & MFG. CO.
Dept. B Cincinnati, Ohio

One Dollar a Wheel

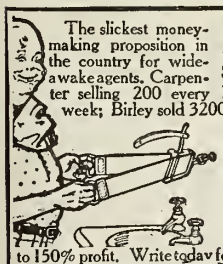
Puts Empire Low Steel Wheels On Your Wagon Now

Only $1 to have a set of Empire Low Steel Wheels on your farm wagon for your heaviest hauling. End your drudgery of high lifting at once by sending only $1 a wheel! Pay balance after 30 days' trial. Your money right back if the wheels are not as represented. We pay the freight both ways. You are not out one cent. Write us today for our "Dollar-a-Wheel" offer.



Your name and address on a postal card will do. We will send you FREE a Perfect Measuring Device to measure your axles with. Send for Catalog of 1912 Models of our Famous Empire Farmers' Handy Wagons. Address (30)

Empire Mfg. Co., Box 512, Quincy, Ill.



AGENTS

The slickest money-making proposition in the country for wide-awake agents. Carpenter selling 200 every week; Birley sold 3200 and still going. **$50.00 to $100 00 EVERY WEEK** ONLY SCIENTIFIC automatic razor sharpener made; gives Barber's DIAGONAL STROKE; HONES and STROPS all standard razors and safety blades. Guaranteed for life. Sells on sight. $2 complete. 100 to 150% profit. Write today for exceptionally liberal offer. Secy. **The Victor Co., 805 Victor Bldg. Canton, O.**

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. Hansen & Son, Hart, Mich.

A Made-Over Orchard

How Ben Dabis Trees Were Successfully Changed to Other Kinds.

By C. T. Wycoff, Illinois

Persons anxious to improve the varieties of apples in their orchards may be interested in a bit of actual experience.

In December, 1910, I purchased a forty-acre tract in Benton County, Arkansas. It lies in the northwest corner of the state, near the borders of Missouri and Oklahoma, in the center of one of the greatest apple regions in the United States. Thirteen acres were in orchard, five in corn and the balance in hardwood timber or scrubby pasture. Since taking possession, the land has been cleared and put under cultivation with the exception of about eight acres of the best timber, located in a deep "draw" where it protects a good spring of water.

The trees on the place at the time of purchase are now ten years old, though some doubtless succumbed to rough treatment or lack of care and were reset later than the original planting. Some were stunted, but otherwise healthy. Some sickly or

ONE OF THE TOP-WORKED TREES. The arrows show where the grafts were made.

needing to be removed. The majority, however, had made a fair, healthy growth. There were 150 Jonathan and twenty-five Maiden Blush, the remainder were Ben Davis, or Gano. They were set twenty-eight feet apart each way.

As the climate of Arkansas usually permits winter work, we removed sickly or diseased trees, gave others a heavy pruning to correct defects in head formation, and in general shaped the orchard up so far as was possible in one season. Then the plow and harrow were put in operation. During the summer cowpeas were drilled in and cultivated, then plowed under and followed by rye. Meanwhile we had set four acres of peach trees in a choice location, and reset young apple trees in the orchard wherever there were vacancies, replacing the Ben Davis with Jonathan, Stayman Winesap and Delicious.

During the winter of 1911-12 we prepared to set an additional five acres, which had been in corn, in apples, and also to top-graft all but the best of the Ben Davis and Gano trees to Grimes' Golden and Jonathan. I made various efforts to find an expert grafter, but without success. The nurserymen to whom I appealed were, of course, busy at that season. The same was true of the experiment stations. At last, Professor Walker of the Arkansas Agricultural College suggested that I should send the man who was caring for my place to Fayetteville to receive instruction in top-grafting. This I did, and this man, Mr. Shird Robertson, spent several days at the station and college. He was a thoroughly qualified orchard man, with a place of his own adjoining mine, but had had no experience in top-grafting. But with only the brief instruction at the college, he had remarkable success in top-grafting this orchard, as shown by the following table:

Variety of scion.	No. trees grafted.	No. of grafts.	Grafts failing to grow.
Jonathan	85	468	0
Grimes	44	216	8
King David	11	58	9
Delicious	12	69	5
Total	152	811	22

Variety grafted—Ben Davis or Gano.

The Jonathan scions Mr. Robertson cut from selected trees in my orchard and that of Mr. E. M. Dunn of the same region. The Grimes scions were taken from a local nursery. The King David and Delicious were kindly furnished by Stark Bros.

Mr. Robertson began grafting March 19th, and ended his work on April 3rd. He attributes his success in part to the fact that he worked only when conditions of weather were favorable. He had an assistant to do the waxing. In some cases only part of the tree was grafted this season, but a majority were completely worked over. Part of the subordinate branches were taken off in June, a few being left with the grafts till next season. In a few instances, where the tree was especially stunted, the entire top was removed and grafts inserted in the stub or trunk.

A vigorous growth resulted, the scions branching and forming a fine head. In other cases the grafts were inserted in the main branches close to the stub, and the entire top removed. The trees reset last year have developed splendidly and promise well. In setting this year we used dynamite. The young apple orchard will be in corn for a couple of years, but in general we practice clean cultivation followed by a cover crop of cowpeas, rye or something similar. We are giving special attention to all wounds or signs of disease in the trees, going over the entire orchard at regular intervals with this sole point in mind and with the proper materials for doing good work. We plan to put the cultivated land into grass, alfalfa or whatever will bring the largest returns with the least outlay of time and money, so as to be able to concentrate our labor on the orchard. The timber and spring adjoining make a splendid pasture.

As to varieties, we have Liveland Raspberry for early, Maiden Blush and Wilson Red June, or Mammoth June, for mid-summer; Jonathan and Grimes' for late summer; Stayman Winesap, Delicious and a few King David for fall, and only 100 Ben Davis and Gano trees.

The grafting has rejuvenated the stunted trees and will shortly bring them into bearing high quality fruit. The young trees are coming on rapidly and in a few years we hope to have an orchard fairly even in appearance and bearing profitable crops of fruit. The acreage is small compared to most Arkansas orchards, but we hope to offset this by having time to make every tree do its duty. Already the orchard has responded nobly to good care, and this season a number of trees surprised us by needing a few props to help them bear their load of fruit.

Trinidad Lake asphalt
Asphalt-saturated wool felt
Trinidad Lake asphalt

Avoid roofings that crack like old shoes, because—
the oils of their pores dry-out after short exposure to sun and air, and leave the roofing lifeless and leaky. Get the permanent roofing—

Genasco
THE TRINIDAD-LAKE-ASPHALT
Ready Roofing

The *natural oils* of Trinidad Lake asphalt are lastingly stored in it. That's the difference between natural and artificial.

They keep Genasco pliable—always ready to resist every condition of weather that attacks it.

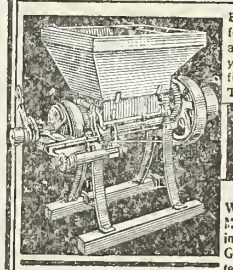
Put Genasco on the roof of all your farm-buildings, and forget it.

Mineral or smooth surface. Several weights. In handy rolls. Ready to lay—and easily done by anyone. Ask your dealer for Genasco. Write us for the helpful Good Roof Guide Book and sample—free.

The Kant-leak Kleet, for smooth-surface roofings, makes seams water-tight without cement, and prevents nail-leaks.

The Barber Asphalt Paving Company
Largest producers of asphalt, and largest manufacturers of ready roofing in the world.
Philadelphia
New York San Francisco Chicago

SAVE ¼ OF EVERY $100



Every mouthful of unground feed your stock eats means a waste of 25 to 30%. Would you let that amount rot in the field unharvested? No! Then GRIND IT on a

STOVER OR IDEAL FEED MILL

SEND FOR CATALOG

We also build Samson Wind Mills, Pump Jacks, Hand Grinding Mills for Poultry Raisers, Gasoline Engines, Ensilage Cutters and Brass Candlesticks.

STOVER MANUFACTURING CO.
260 Ideal Avenue, FREEPORT, ILLINOIS

In writing please mention The Fruit-Grower and Farmer.

Are You Interested In

pleasant, permanent and profitable agency work? We offer a position as exclusive distributing salesman either all or spare time for the Automatic Combination Tool, a Fence Builders Device, Post Puller, Lifting and Pulling Jack, Wire Stretcher, Wrench, etc. Used by Contractors, Teamsters, Farmers, Factories and others. Weighs 24 lbs., lifts or pulls 3 tons. Write for offer and county desired.
AUTOMATIC JACK CO., Box 99, Bloomfield, Ind.

PEACH SEEDS FOR SALE

1911 AND 1912 STOCK. Write for Prices and Samples.
THOS. R. HAMAN, 1614 Oliver Street, Baltimore, Md.

Getting a Profit From Culls

Cider Mill Solved the Problem of the Waste Apple. Two Hundred and Fifty Thousand Gallons was made in a Virginia Mill Last Year.

More than 250,000 gallons of cider were made last year by the plant on the Rose Cliff Fruit Farm, one mile south of Waynesboro, Va. James Craig is general manager of the mill. The full season capacity is a half million gallons. The total investment, including stock, is about $46,000.

Of the last season's output, 20,000 gallons came from apples grown in the orchard of the Rose Cliff Company. Then, apples to make 130,000 gallons were purchased. The remainder of the work was for farmers in that community. Two cents a gallon is charged for cider made for others. All apples purchased by the company for cider must be practically free from decay. Twenty cents a bushel was paid for such apples this year.

Janet and York apples make more cider than most other varieties grown in that community. From three and one-half to four gallons to the bushel are obtained from these varieties, when the apples are ripe and in good condition. Two machines are used for grinding apples, one giving a hydraulic pressure of 100 tons, and the other eighty tons.

INTERIOR OF THE CIDER STORAGE ROOM. EACH TANK HAS A CAPACITY OF 4,000 GALLONS.

One of the best features of this plant is the great care taken to sterilize everything and to keep the mill in a sanitary condition. Every one of the big tanks is sterilized before it is filled with cider. This is the way the work is done: The tank is filled full of water and fifty pounds of salsoda is dissolved in it. Live steam is then turned into the tank, and the water is boiled two days. The water then is drawn off and the tank calked up tight, except one little hole, and live steam is turned into it for fifteen hours. Then a half-pound of sulphur is burned in the big barrel for a day, and it then is sterile. All tanks and pipe lines are painted inside with acidproof paint.

The mills and all the other working parts are washed and sterilized twice a day, and the pipe lines are sterilized once a day. Floors are of slats or concrete, and are mashed every day in an effort to keep them in a sanitary condition. Indeed, this cleanliness is one of the principal items in the success Mr. Craig has with his plant. You can't make cider and vinegar successfully unless all undesirable fermentations are carefully controlled. And if the fermentations are controlled, the plant must be clean.

The mill is built on a side-hill, so when the apples are pitched into the plant they do not have to be elevated so very high to the grinding machine. The machine on which all custom work is done has a capacity of one hundred barrels of cider a day. After a farmer shovels in the last of his apples, he drives around to the other side of the building. Meanwhile, the apples have been ground as rapidly as they are thrown into the hopper, and all pomace has been caught in heavy burlap, "cheese cloth" sacks. Pressure is applied to the pomace, and the cider runs to the wagon through a hose. Ten minutes after the last of the apples have been shoveled into the hopper, the farmer can drive away with his cider.

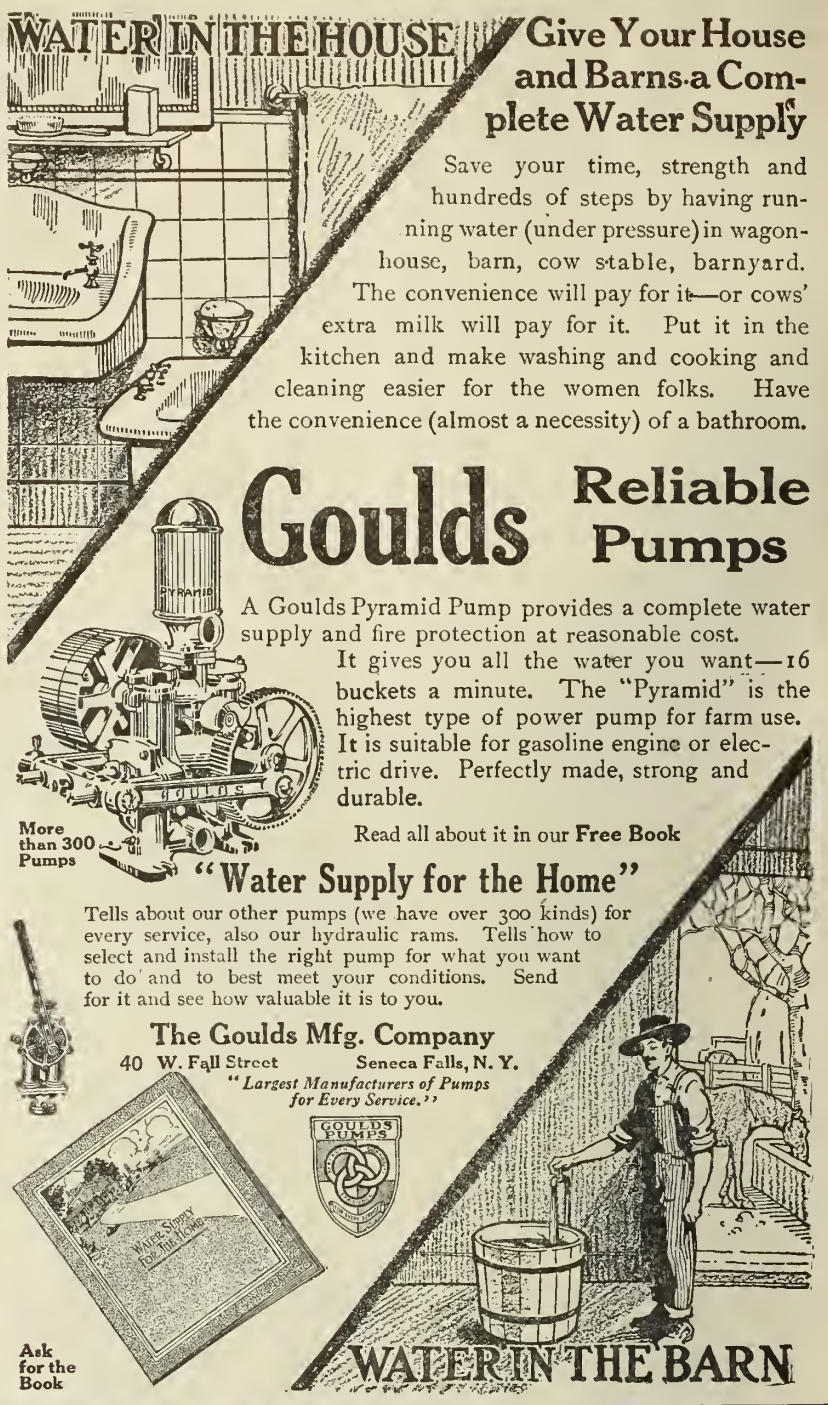
When the apples that belong to the company are ground, the cider goes from the machine through a pipe to the fermentation room. It is allowed to ferment in big tanks for some time, just how long depending on the use that is to be made of the juice. There are four tanks in the fermentation room, holding 5,000 gallons each. Here much of the pomace that has not been caught by the cheese cloth sacks settles to the bottom, and as the liquid is drawn carefully from the top, it is separated from the juice.

The cider goes down into the storage tanks from the fermentation room. In the storage room there are fourteen tanks holding 4,000 gallons each. If the juice is to be made into hard cider, and most of the Rose Cliff product is marketed in that form, it is run into a sterilized tank through a sterilized hose. It is allowed to stay in this tank until it tastes right. Small quantities may be withdrawn without contaminating the rest. When it has reached the right stage in the alcoholic fermentation, one-tenth of one per cent of benzoate of soda is added to preserve it. This kills germ life and stops fermentation.

In about a month the cider is transferred to another tank to aid in clarifying it. This operation is repeated the first week in January, and about once a month after that until the juice is sold. The company begins to sell the product about February 1, and it usually is sold promptly.

Hard cider is sold in many kinds of containers. Some is shipped in fifty-gallon barrels, some in thirty-two-gallon barrels, and much of it in 16-gallon kegs. Some is bottled. "Which way do you consider to be the best way to market the product?" was asked Mr. Craig. "In the barrels and kegs," was his reply. "When cider is bottled it runs the cost up very high, for bottles and crates are expensive, and the labor cost for the bottling is considerable. The producer must have a high price for his product if it is marketed in this form. In fact, the price must be so high that the retail dealers in the cities can't make a profit if the usual amount of cider is sold for five cents Therefore, I prefer to sell the material in large containers, and most of our product is sold in kegs and barrels."

The cider is placed in both quart and pint bottles. These bottles are



Give Your House and Barns a Complete Water Supply

Save your time, strength and hundreds of steps by having running water (under pressure) in wagon-house, barn, cow stable, barnyard. The convenience will pay for it—or cows' extra milk will pay for it. Put it in the kitchen and make washing and cooking and cleaning easier for the women folks. Have the convenience (almost a necessity) of a bathroom.

Goulds Reliable Pumps

A Goulds Pyramid Pump provides a complete water supply and fire protection at reasonable cost. It gives you all the water you want—16 buckets a minute. The "Pyramid" is the highest type of power pump for farm use. It is suitable for gasoline engine or electric drive. Perfectly made, strong and durable.

More than 300 Pumps

Read all about it in our **Free Book**

"Water Supply for the Home"

Tells about our other pumps (we have over 300 kinds) for every service, also our hydraulic rams. Tells how to select and install the right pump for what you want to do and to best meet your conditions. Send for it and see how valuable it is to you.

The Goulds Mfg. Company
40 W. Fall Street Seneca Falls, N. Y.
"Largest Manufacturers of Pumps for Every Service."

Ask for the Book

SPRAY

Let Us Send You Free Spraying Calendar and Directions

Building spraying machines is not a side issue with us. It is the whole of our business. For many years progressive fruit and vine growers have been looking to us for spraying machines rightly adapted to their needs. We not only build the best sprayers, but our book gives you valuable pointers on how and when to spray, the mixture to use, how to prepare, etc.

The Empire King Sprayer

Favorite with Thousands of Fruit Growers

Easy and simple to operate, gives strong spraying force and throws fine mist spray. Liquid is stirred automatically. Automatic brushes keep strainers clean so there is no clogging. A sprayer for fast, thorough, economical work.

We make Bucket, Barrel and Knapsack Sprayers, 4-Row Potato Sprayers and beyond all question the finest Gasoline Engine Orchard Spraying Rigs ever built. Gasoline Engines are all-purpose powers—can be used wherever power is needed on the farm.

Send for free catalogue and particulars.

FIELD FORCE PUMP COMPANY
58 11th St., Elmira, N. Y.

FIELD FORCE PUMP CO. The Leader "OSPRAYMO" LINE OF SPRAYERS ELMIRA, N.Y.

20th Century Grader

DOES 40 MEN'S WORK

Write for Catalog The Baker Mfg. Co.

Write today

Digs irrigation ditch 4 feet wide, 28 inches deep and one mile long per day, with one man to operate and a team of horses. Cost, only 2c per rod. Pays for itself in 20 days. Saves time; saves labor; increases profits.

Reinforced steel throughout—light—strong—guaranteed. Makes irrigation ditches and builds roads—many other farm uses. Will last a lifetime. Low in price. Easy terms to responsible parties. *Write for catalog*—sent free. Contains valuable pointers for increasing crop profits.

THE BAKER MFG CO., 530 Hunter Bldg., Chicago, Ill.

In writing please mention The Fruit-Grower and Farmer.

BE A REPORTER FOR THE M.S.I.A. EARN $6 to $15 A Day!

Any one can secure the information we want. Send stamp for particulars. M. S. I. A. Association, 124 Association Building, Indianapolis, Indiana

packed in crates containing two dozen quart bottles, or three dozen pint bottles. Every bottle and every crate bears the label of the Rose Cliff Company. Every tank of cider is analyzed carefully for the alcoholic content before it is sold. The laws of Virginia do not allow the sale of cider containing more than six per cent alcohol. It requires some care not to violate this law. Every tank is tested, both at the plant and by the state chemist. If the cider contains more than six per cent, it usually is mixed with cider containing less than this amount, so the mixture will be within the law. If cider with a low alcoholic content is not available, the extra alcohol is evaporated by heat.

Sweet cider is made only from ripe, sweet, sound apples. The greatest care must be used with every operation connected with the manufacture of this material. It is a high quality proposition. It is filtered as it comes from the mill, and it then is sterilized at 148 degrees F. Then is it run into barrels that have been sterilized with live steam, and the bung is driven in promptly. In this bung is a small hole in which is inserted cotton that has been dipped in alcohol. The cotton is inserted to keep out germs.

In about five hours, or when the cider is cool, a small "stop plug" of cork is dipped in paraffin, and is driven into the small hole where the cotton is. The cotton is driven on into the cider. Then both corks are covered with paraffin. The preservative, one-tenth of one per cent of benzoate of soda, is added when the cider is placed in barrels. It is not absolutely necessary to use a preservative to keep sweet cider if the juice has been handled properly, and some of the sweet cider of this plant is put up without a preservative. However, better results usually are obtained when a preservative is used.

Apple juice used to make vinegar is run directly from the tanks in the fermentation room to the barrels. These barrels are hauled to a nearby building. This is the vinegar cellar. The bungs are removed, and loose cloth is tacked over the hole. All that is done to the product is to change it from one barrel to another every month or two and let nature take its course. No ferments of any kind ever is added to the material. It takes about a year for the vinegar to get in a marketable form.

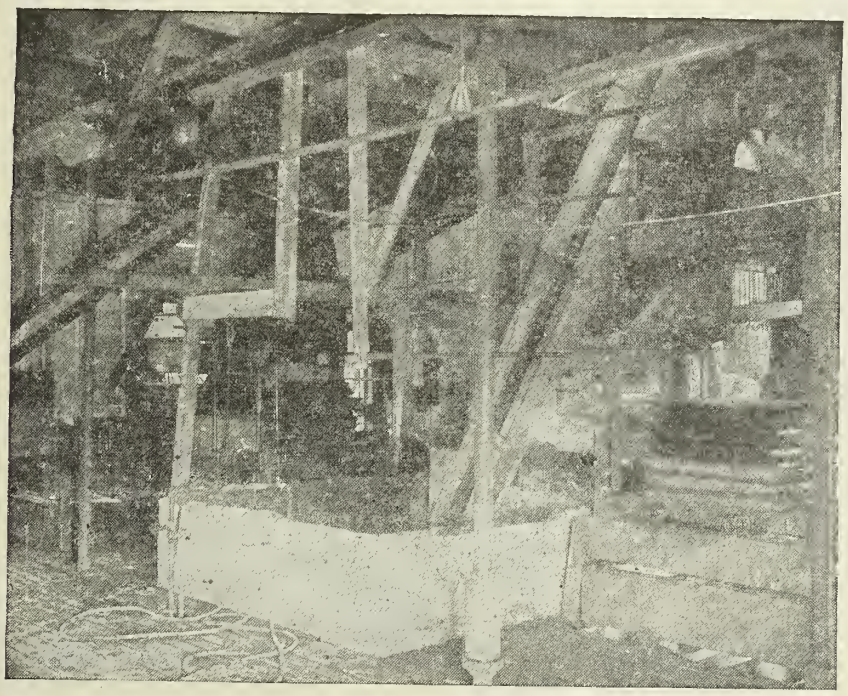
Most of the product of the Rose Cliff plant is marketed as hard cider. In speaking of this, Mr. Craig said: "We make much more money out of the hard cider than from any other line. Should other plants go into this line extensively? Well, that is an individual problem. Great care must be used with this material, or some undesirable fermentations will be set up that will ruin the product. Then, there is the matter of salesmanship. Some plants have great trouble in marketing hard cider, even if their product is first class. But if one can make the hard cider, and then can sell it successfully, there is much more money in this product than there is in vinegar."

A forty-horse power boiler is used to generate the steam used in this plant, and a twenty-five horse power engine is used to pull the machinery and to furnish power to run a dynamo. All pomace is burned in the boiler. About one shovel of coal to three shovels of pomace is used. The use of pomace in the boiler has reduced the fuel bill about half, and, besides, it gets rid of an undesirable by-product. This material is hard on the flues, however, and a set must be put in about every other year.

Four men are required, usually, to keep the plant running. Four extra hands are required during the rush season, when the plant is running at its full capacity.

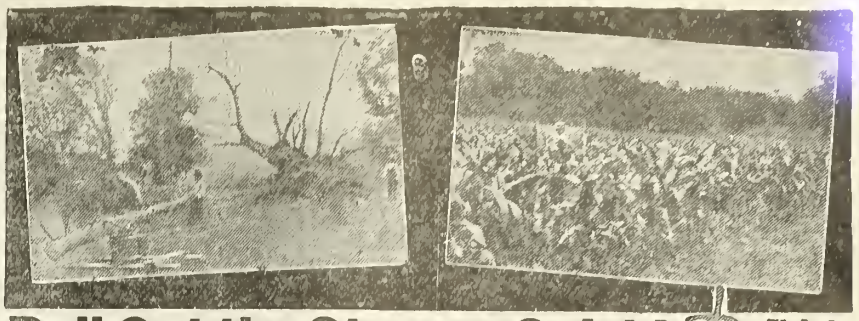
All barrels and kegs are bought from the St. Louis Cooperage Company. About five carloads of half, or 32-gallon barrels, and 16-gallon kegs are used every season. From three to five cars of 50-gallon barrels are used, also. This material all is bought in the first few months of the year, usually in March, and the price is settled at that time. It is delivered when delivery is requested. The barrels are kept in the storage room until needed. Barrels are sold to men who bring in apples to be ground, if they desire. They are sold at from forty cents to $1.50 each, depending on the size and quality. A good quality, new, fifty-gallon barrel, when sold at retail in this manner, costs $1.50.

The Rose Cliff plant is in a good, and rapidly developing apple section, and its business will increase in the future. There are many young orchards in that section that will come into bearing in the next few years, and this means a greatly increased business. Perhaps the most interesting feature of this plant is the high proportion of the apple juice that is sold as hard cider. The reason for this, of course, is the fact that Mr. Craig knows how to make the product, how to keep the plant in a sanitary condition, and, finally, how to sell the cider after he makes it.

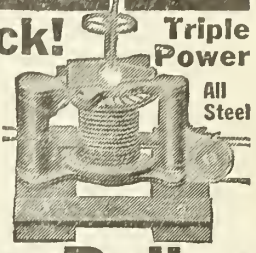


THE POWERFUL CIDER PRESSES WHICH EXTRACTED 250,000 GALLONS OF APPLE JUICE LAST YEAR.

Many times a dollar's worth in a year's subscription to The Fruit-Grower and Farmer.



Pull Out the Stumps Quick! Plant on Virgin Soil



ONE year makes a difference of from *no profit* to $1,281 on 40 acres. Pull out the stumps, double the land value, raise a bumper crop on virgin soil! Thousands are doing it! Why not you? Get a Hercules All Steel Triple Power Stump Puller! Clear your land once for all. Pull any stump in five minutes—an acre or more a day—three acres without moving machine. The

Hercules Stump Puller

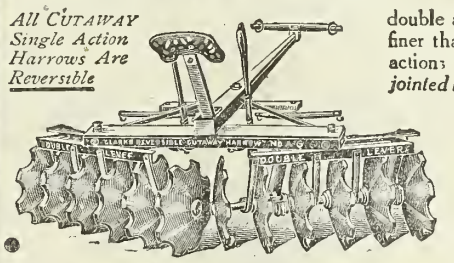
is 400% stronger and 60% lighter than others. *Genuine Steel* means strength. Triple power means *more pull than a locomotive*. Double ratchets mean *safety*. Accurate work means *light* draft. Send name in now for fine free book and special price offer! Don't wait! Write a postal NOW! Address

HERCULES MANUFACTURING CO.
243 21st Street CENTERVILLE, IOWA

These Harrows Are For Intensive Tillage

Remember, the CUTAWAY disk is the original "cutaway"; the CUTAWAY double action harrow, the original double action; the CUTAWAY reversible harrow, the original reversible; the CUTAWAY extension head harrow, the original extension head. CUTAWAY double action harrows have all four of their gangs compactly hung on *one rigid main frame*, which is the secret of successful double action harrows. That is one reason why double action harrows grind and pulverize the soil finer than other harrows. CUTAWAY double actions are all equipped with the *detachable jointed tongue*, which can be removed or replaced in *one minute*, making the harrow into either a tongue or tongueless machine as desired. Both the single action and the double action are made with extension heads for orchard work, and can be closed for regular field work. They are equipped with the famous CLARK cutlery steel disks, *forged* sharp, and CLARK *hardwood* journals. And remember, CUTAWAY single action harrows are *reversible*. Write for catalog, "Intensive cultivation."

All CUTAWAY Single Action Harrows Are Reversible



Cutaway Harrow Co. 968 Main Street, **Higganum, Conn.**
Makers of the original CLARK "Cutaway" implements

APPLES

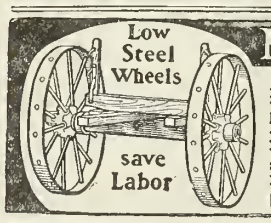
MYERS, WEIL & COMPANY
750 Broadway Cleveland, Ohio

We want your Big Red Apples, and lots of them, especially Jonathans, Rome Beauties, Ben Davis, Ganos, Winesaps and Spys, either boxes, barrels or in bulk. Also your Peaches, Pears, Plums and Prunes. Ask for booklet "G"

MAGANN

A SWEET CHERRY for the MIDDLE WEST Originated in the Missouri Valley, and particularly adaptable to this section. A vigorous grower and profuse bearer. Descriptions, prices and our beautiful new catalogue on request.

MOUNT HOPE NURSERIES, ESTABLISHED 1869 **LAWRENCE, KANSAS**



NEW WHEELS for Your Old Wagon

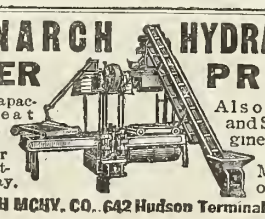
"ELECTRIC" STEELS to fit any wagon—old or new. Make a new wagon of your old gear at small cost. We guarantee fit. Give a low lift—you get more work done in less time, with less labor. Cost less than wood wheels and last longer. Do not rut fields and meadows. Investigate "Electric" Steel Wheels.

ELECTRIC HANDY WAGON—made of Oak, Hickory and Steel. Just what you want for all kinds of knock-about work. Will last a lifetime. Has unbreakable steel wheels. Easy draft. Let us show you how to save yourself and your team. Write us today for free book. Address

ELECTRIC WHEEL CO., Box 57, Quincy, Illinois.

MONARCH CIDER HYDRAULIC PRESS

Proved capacity, great strength, all sizes. Write for FREE catalog today.



Also Gasoline and Steam Engines, Threshers, Saw Mills. Get our prices.

MONARCH MCHY. CO., 642 Hudson Terminal, New York

MAKE BIG PAY DRILLING WATER WELLS

Our Free Drillers' Book with catalog of Keystone Drills, tells how. Many sizes, traction and portable. Easy terms. These machines make good anywhere.

Keystone Well Works
Beaver Falls, Pa.

Crop Reports For September

Here are the most interesting crop reports of the season. They tell in loudest terms what has been repeated in these columns all summer, that the apple crop, while large, has been much over-estimated. They tell of the intrigues of the buyers to beat down the prices, and of the remarkably poor prices some crops have brought. They tell further, of the influence co-operative marketing has on the prices at which the fruit is sold. Compare the prices in districts where there are strong associations, with those where the growers are not organized for the disposal of their crops. They tell one other thing of vast importance, and that is the value of spraying. Read these reports twice. Prepare now to organize an association in your community and sell your fruit for what it is worth.

Arkansas.

Cecil.—Hauling apples to Ft. Smith and selling on the streets. Delicious bring $1.00 and Ben Davis 25 to 50 cents.

Lonoke.—At this place apples ripen much earlier than farther north. Winesap is ripe and gone. Keiffer pears are selling for 50 cents, and a large crop to be disposed of.

Decatur.—The apple crop in Benton County has been over estimated. Quality very poor. Amount of shipping apples will be very small. Gano, Winesap, Ben Davis and Jonathan all gone. Brought $1.00 box here.

Batavia.—Apples have been selling at $1.00 to 30 cents. In orchards that are well sprayed the crop is fine. Choice varieties like Delicious, Grimes, Jonathan, Kinnard, Winesap, Arkansas Black, etc., are held or sold for storage awaiting better prices.

Siloam Springs.—There are more apples here than we thought. Growers are selling for 37½ cents to 50 cents a bushel. Late rains have helped apples wonderfully.

Centerton.—Apples generally not very good. Growers are selling at 65 cents per hundred pounds.

Farmington.—Unsprayed orchards are in bad condition from cold rains and wind at blooming time. Sprayed orchards are 75 per cent better. Selling at 60 cents per hundred pounds.

Piggott.—The apple crop is larger than was expected, due to favorable weather and better care. Selling for 50 to 75 cents per bushel on home market.

Ozark.—On account of the drought and hot weather the apple crop is smaller than expected. Not over 25 per cent of what we had. Selling at $1.75 loading station.

Colorado.

Delta.—The apple crop has been over estimated. Apples will run medium size. Just beginning to pack Grimes and Jonathan. Some sales at $1.25 per box. Later varieties not yet ready. Growers and buyers have not agreed on prices. Indications are growers will store considerable.

Grand Valley.—Apples did not attain normal size. No sales yet. Some will store part of crop. Short season and over loaded trees have kept apples from growing as they should. Apples promise to be of a beautiful color.

Paonia.—Growers are both selling and storing. Best offers are $1.25 for all grades of Jonathan. Extra fancy Rome Beauty, Jonathan, Grimes, Winesap quoted from $1.35 to $1.50. Market feels stronger than 30 days ago. Prospects look bright.

Idaho.

Lewiston.—No apples have been sold as yet, to speak of. The crop is larger than last year, on account of larger trees.

Nampa.—The crop is larger than last year and is of better quality. Prices range from 75 cents to $1.35 a box. People are not prepared to store crop. That is yet to be developed.

Payette.—The apple crop is fully as large as expected. Selling at $1.00 to $1.10 a box, orchard run. Harvest of late varieties has not yet commenced. Buyers are scarce, and more would be welcomed.

Weiser.—The apple crop here is as large or larger than expected, due to increased acreage and heavier production per tree. Prices vary according to market. The Weiser River Fruit Growers' Association is handling the bulk of the crop under strict rules this year. Probably 200 or more cars will be shipped from this station this year. Fruit is top quality.

Illinois.

Carmi.—The apple crop is not as large as indicated earlier, on account of faulty and unsprayed trees. Picking has not begun, and no prices made.

Centralia.—Drought, heavy drop and blotch have reduced the size of the apple crop here. Individually, we sold our Jonathan and Grimes for $3 to $3.50 per barrel. Will store Bens. Very few apples are being barreled here outside our own.

Creal Springs.—Apple crop, one-fourth smaller than expected. Blotch has split Ben Davis. Winesap half crop. No prices offered f. o. b. I never saw growers so eager to sell, as the drop is heavy. Sprayed orchards dropping badly and bitter rot is bad in some orchards. Prices asked are $1 for Bens, $2.50 for Winesap.

Flora.—The apple crop is up to earlier expectations. Prices 25 to 40 cents for bulk, and $3 to $3.25 a barrel for Jonathan at track, or $1.25 to $1.50 picked. No sale of Ben Davis, as stock will be stored.

Kinmundy.—There is a larger apple crop here than looked for, on acount of warm weather following rains. Prices, $1 per barrel delivered in bulk at station for Jonathan, orchard run; 60 cents for 1's and 2's, Jonathan and Grimes on trees. Buyer picks, grades and packs. Ben Davis not yet ready or priced.

Plainville.—The apple crop is larger, because of spraying, but most unsprayed orchards are heavily loaded. Price, $1 to $2, Jonathan and Grimes bringing the higher price. Ben Davis and Gano not ready to pick. Many of the larger orchards have more than fifty men picking now.

Quincy.—Crop larger, and storing more than usual. Selling for 90 cents for Bens, $1.50 for Jonathan and Grimes in orchard. Lots of No. 2, but not many No. 1.

Quincy.—The apples here are in spots, some orchards are fine, while others have none. Apples that were not sprayed dropped badly. No bumper crop.

Indiana.

Lawrence.—Because of storms and fungus, apple crop smaller than expected. Selling $2.40 to $3 per barrel. Crop almost a failure here on account of adverse weather conditions, fall of 1911 and scale.

Marshall.—No apples to mention, account unusually heavy crop last season. In this immediate section there is only a "sprinkle" of apples. Trees bloomed heavily, but dropped.

Iowa.

Beacon.—Our apple crop has not been lighter in this section since we have had trees to bear. Apples shipped in are selling out of the cars at $1 per basket. Plums are the heaviest crop in 30 years.

Council Bluffs.—The apple crop is smaller than expected, on account of drought and freezes. Local retail market, 40 to 75 cents. Sprayed orchards have about one-third crop; unsprayed about 15 per cent.

Glenwood.—Less apples than last year, on account of the heavy crop then. Are selling from $1.50 to $2.00. A large per cent of the older orchards have died the last two years, mostly Ben Davis.

Hamburg.—On acount of so many bad apples, the crop is smaller than expected. The four principal growers are storing. No prices offered. Unsprayed orchards very defective. Hail did much damage in some orchards. On a good many farm orchards, no fruit.

Harlan.—Bad winter and excessive drought have made a small apple crop. Prices, $3.00 to $3.25 per barrel, wholesale.

Randolph.—Unsprayed orchards have lost most of the crop, on account of worms. I have sold, $2 to $2.75, f. o. b. cars. The benefits derived from spraying are too apparent in my mind as to its necessity. I have what is agreed by all who have seen my crop, the cleanest and best in the state.

Kansas.

Bethel.—No prices to mention. The dry weather injured the apple crop to a certain extent. I will box my Jonathan and store Ben Davis and Gano at home.

Cedar Vale.—The apple crop is smaller, account drought. Dryest August and September ever known in this county.

Council Groves.—Crop smaller, because of worms and drops. Jonathan almost all windfalls, and in orchards not sprayed, half the fruit is on the ground. I am storing about eight cars.

Hiawatha.—Growers selling from $1.00 to $1.75 a barrel. Most of fruit of good quality.

Leavenworth.—Crop not as big as expected, because of dry weather. Selling, $1.50 to $2.50 for Jonathan; 80 cents to $1.50 for others. Dry weather stopped growth and caused heavy dropping. Jonathan was reduced 50 per cent. Fine rains and cooler weather is helping later varieties, and except on old and over loaded trees will be No. 1. In many cases the hot weather thinning will be of great good.

Mound City.—Apples dropping on account of being more or less imperfect. Some scabby, more wormy. Selling 25 to 75 cents.

Parsons.—No apples here. Those shipped in selling $1 a bushel for bulk Jonathan, fancy eating, $2. Storage houses being filled. Good market for 2d and 3d grade in bulk, also large demand for 1st.

Wichita. — Grimes, Jonathan, etc., bringing $1.25 for fancy; 85 to 90 cents for choice, boxed and aboard cars. Ben Davis, 30 to 50 cents. Mo. Pippin, York, Black Twig, less than $1.

Kentucky.

Bardwell.—Apple crop larger than last year. Selling, Winesap, $1, Ben Davis, 75 cents, on tree.

Bayou.—The apple crop smaller than expected, on account of rot and dropping. Growers asking $2, barrels furnished.

Lewisport.—Have had such a rainy summer that apples are almost ruined by rot, scab and everything that a wet, muggy July and August could give. Rained twenty-one days in August.

Massachusetts.

Amherst.—Picking not yet begun. No prices set. Growers not frightened, but expect to get good prices. A common guess is $2 to $2.25.

Ipswich.—Apple crop is very uneven, many orchards not bearing at all. Fall apples, $1 per barrel on the tree. No prices yet for winter apples, as picking has not commenced. Sixty to 70 per cent of a crop, but that is of good quality.

Michigan.

Coloma.—The apple crop hardly as large as expected. Growers selling to some extent, at about an average of $2.50 a barrel. Spies, Baldwin, Wagener, seem to be the most plentiful of the winter varieties, and where they have had good care are fine and free from worms, and good size. No one picked for winter storage, but will soon begin.

Copenish.—Apples are selling around 35 cents per bushel. Fruit dropping badly for some reason. About enough for our home market.

South Haven.—Crop smaller than indicated in the spring, on account of high winds. No trading yet, as buyers holding back. Growers not anxious to sell now. We think it would be a good idea to flood home markets, then ship or store for higher prices.

Missouri.

Amoret.—Apple crop up to expectations. We sell and store. Prices, $2 to $3. We have sold box stock for $1; barrels, $2 to $2.55.

Brookfield. — Apples dropping badly. Cannot find buyers. Local market, 40 to 50 cents per bushel. Very few commercial markets here and buyers do not come.

Carrollton.—Crop not large, account too many neglected orchards. Apples selling 40 to 90 cents in bulk. Where orchards have been sprayed, there is considerable fruit, would do to barrel, if properly graded. Most of the fruit going in bulk.

Cedar Gap.—Picking has hardly begun, and there is therefore very little doing. Prices, $2 to $2.25 for Ben Davis.

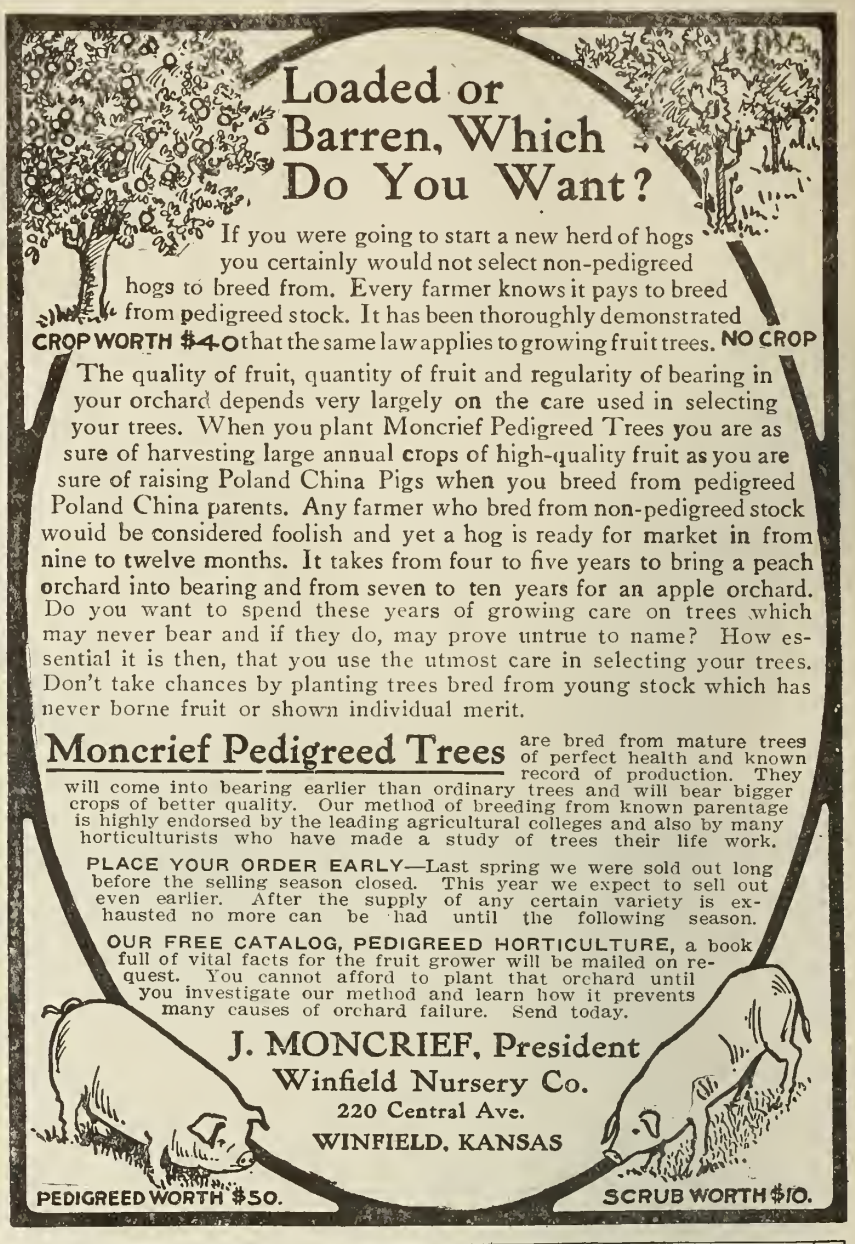
Columbia.—Growers are selling mostly, $1.50 per barrel on trees for Jonathan and Grimes; $1.25 for York and Rome; 75c for Ben Davis.

Duncan's Ridge.—Apples not of the best quality, on account of lack of attention, yet better than could be expected under circumstances. No selling, as there are no buyers.

Mt. Vernon.—The apple crop not so large as expected, because of dry weather, insects and lack of spraying. Fruit all dropping. No sales yet. Some will sell, others will store. Quality of sprayed apples good. No buyers who mean business at fair prices have as yet come. There is time yet before picking starts in earnest.

Marionville.—There has been few if any sales. General appearance of winter crop is much improved since rain and cooler weather is here. Considerable inquiry. On account of the general belief that the apple crop is very large, buyers expect very cheap apples, and it looks like sales will be slow.

Parkville.—Apples selling $1.50 a barrel for Ben Davis and Gano, $2.25 for Winesap, Black Twig and Grimes; $2.50 for Jonathan. Reports of heavy crops west depress prices and buyers offer no better.



HOUSTON

Where the railroads meet the sea, is building a great city whose destiny is linked with the Panama canal. She holds the key to the Gulf that unlocks the gateway, letting in and out the foreign commerce of the world to the greater part of the United States. Fortunes are made here in short time on real estate investments. ALDINE is only ten miles from Houston and is one of the most desirable suburban communities for investment or residence, being admirably located as regards soil, water, drainage, schools, markets, transportation. The best fig orchards and largest fig preserving plant in Texas are found here. Orange groves and other fruits and vegetables grow nicely. Poultry and dairy farming, as well as general farming, is successfully conducted here. Lands are now cheap and may be bought on reasonable terms. Small tracts of 5 and 10 acres may be had for small cash payment and balance monthly. Large tracts may be had on usual terms. Titles perfect. Write today for full particulars free.

E. C. ROBERTSON, General Sales Agent,
501 and 510 Kiam Building, HOUSTON, TEXAS

Gooseberries

We grow the Oregon Champion, which has proven the most profitable variety wherever tried, in large quantities for the trade; and have a considerable surplus of **Currants** and **Apple**. Also a general line of Nursery Stock and Nursery Supplies.

PORTLAND WHOLESALE NURSERY CO.
122½ Grand Avenue. Portland, Oregon

PEACH AND APPLE TREES

For Fall and Spring Planting. Prices Right—Stock Right. MYER & SON, Bridgeville, Delaware

Some trees full, some very light. Half crop here on average.

Oregon.—Apple crop reduced by the drouth. Selling at $1.50 for Jonathan, $1 for Ben, and buyer furnish barrel.

Pilot Grove.—Apple crop smaller, because not sprayed. Unsprayed fruit selling 80 cents per hundred. No price on sprayed fruit, but expect good price.

Rolla.—Crop large, because trees in better condition than formerly. Will probably store apples. No sales made. Our apples extra good quality, but owing to enormous crop, will require lots of hard work to find a market that will take them at a reasonable value. Apples being offered so cheap, impossible for buyers to make an offer within reason.

Saverton.—Crop not so large, because trees bore too heavily last year. No offers made. I have the finest quality I have ever produced, and will have about 2,500 barrels of Jonathan, Grimes, Gano, Ben Davis, Willow Twig and Winesap.

Seymour.—Apples falling badly. Prices, $1.50 to $2 for early fall. No buyers for winter stock yet. The winter stock will be shorter than expected, because of faulty apples. Buyers are needed here and they could make money. Dr. S. L. White has ninety acres of Ingram and Ben Davis for sale.

Skidmore.—Growers are selling what they can at 65c to $1 per hundred pounds. The crop is light in this part. Many orchards had a full bloom, and set plenty of fruit to almost break the trees. But, bugs! Brother Bug did his little stunt, and now the fruit is not plentiful, and what is left is faulty. Spraying would have helped save most of the fruit.

Springfield.—Good apples same as last year, while there are more culls now than then. Most growers are storing. Prices paid have been $2 a barrel for No. 1 Ben Davis, f. o. b. station. Jonathan, fancy box, $1.35; choice, 75c. York, $1.15 box for fancy and 65c for choice. There will be no more good apples than last year. Cider, vinegar and brandy factories take surplus at 25c a hundred pounds.

Rogersville.—Few apples selling. Prices 65c and 75c per barrel.

Waverly.—The apple crop over-estimated. Selling $1 on trees; Jonathan, $1.50. Most orchards lumped.

Montana.

Stephensville.—The apple crop is less than expected on account of scab and hail. Nothing doing yet in the way of selling. Buyers have all combined and asking consignments. Commission men refuse to buy an apple, thereby seeking to compel growers to consign. When a man takes a car of apples to market and tries to sell them at a price to retailers, the commission men take the consigned apples and set them at a price that in a measure runs him out.

New Hampshire.

Rochester.—Fruit is good in every way except small in size. No large winter fruit in this territory. Selling $1.50.

Nebraska.

Johnson.—Apples selling 35c to 50c per bushel. This county would load a train of cars six miles long. Less than one-fourth of the orchards in the county are sprayed, yet the sprayed orchards produce two-thirds of the apples, or 200,000 bushels.

Table Rock.—Apple crop is about the same as last year. A large portion are below normal in size, especially in orchards that bore heavily last year. Selling at 80 cents to $1 per hundred pounds.

New Mexico.

Artesia.—The apple crop is up to expectation, except in orchards where spraying was not thoroughly done. About half being sold and half being stored. Prices from $1 to $3 per box. Growers, realizing that while the crop is a little larger than last year, it is much below a full crop, and are inclined to hold for better prices.

Mesilla.—Growers will store for sale on order. I estimate our crop not over 60 per cent of last year. Very little movement yet. Some Jonathan sold at $1.25 per box.

New York.

Ballston Lake.—The crop is less than expected, due to poor set, poor fruit and dropping in unsprayed orchards. But little movement yet. Prices $1.50 to $2.25 for fruit, unpicked. While a few well-cared-for orchards are carrying fine crops, the majority of orchards in this section are unsprayed and untilled, and in these the crop is small and poor, about 40 per cent of a full crop.

Genesee.—Apple crop as large as expected. No prices, no picking started, but will begin soon. Weather wet.

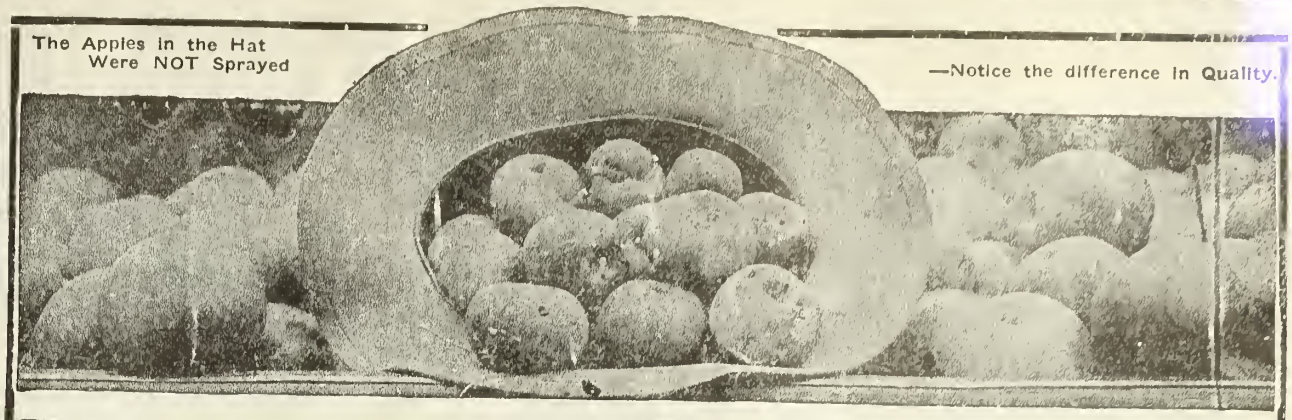
Interlaken.—The apple crop is larger than expected, due to unusual growing weather. Growers mostly selling. Prices $1.30 to $1.60. The Greening crop is the shortest in years. The red fruit is above the average for quality and yield.

Jay.—Due to better weather conditions, the apple crop is larger than expected. Selling from $2 to $3. Apple buyers are numerous and late apples are abundant and in good condition.

Medina.—Never saw as many apples here as this year. Some orchards run small, from big crops, some very poor from aphis, but most of the apples free from worms and fungus, and they are fine apples. Storage space to let, but few sold. Prices for apples, $1.65 to $2, ciders out.

Penn Yan.—A few fall apples have been sold for from $1.75 to $2 per barrel. Winter fruit will not be ready for market before October 7. Buyers and growers seem afraid of each other.

Sidney Center.—There is a great crop of Baldwins in New York. Most other varieties are light, because not the bearing year. Winter apples not picked.



Which Kind Did YOU Raise This Season?

The CUSHMAN The World's Best Power Sprayer

The CUSHMAN The Gold Medal Winner

The CUSHMAN Solid Steel—No Wood

Never before has there been a season when the difference in the yield of sprayed and unsprayed fruit was so apparent. Read the reports on page 26 of the September Fruit-Grower, which shows that sprayed trees always "bring home the money." Put YOUR spraying problems up to US. Write us freely and we will do our best to help you succeed in your spraying. This advice is absolutely free. Write today so that you will be prepared to raise No. 1 fruit next season.

VISIT OUR EXHIBITS AT ALL THE LEADING APPLE SHOWS AND FAIRS

Send for Catalogue

EXCLUSIVE MANUFACTURERS

Get Our Prices

CUSHMAN MANUFACTURING COMPANY

Factory and Main Office

300 Michel, ST. JOSEPH, MISSOURI

BRANCHES { Spokane, Wash. Grand Jct., Colo.

North Carolina.

Waynesville.—Haywood Fruit Exchange is selling our apples this year. We have lots of fine fruit. Price $2.75 a barrel for No. 2, to $3.50 for No. 1.

Ohio.

Batavia.—The crop is light all through Western Ohio. Summer varieties did fairly well, but the winter apples will be less than 10 per cent of last year. No sales that I know of.

Gypsum.—The apple crop is heavier than last year, due to good care and a favorable season. Fall varieties selling in baskets at 50c to 75c per bushel. No prices established for barrel stock. One grower was offered $2.50 for a car of fancy stock.

Middleport.—Some storing and others selling, $1.20 to $1.75, buyer to furnish the barrel. Picking will begin October 1 and continue for three weeks. There is going to be a large and fine crop this season.

New Albany.—There will not be enough winter apples here for home use. The second brood of codling moth have ruined the crop in places, and in orchards that were well sprayed twice.

Proctorville.—Due to a good season, Lawrence County has about 75,000 barrels of apples, against 10,000 last year, and 100,000 two years ago. Two dollars is being paid for No. 1.

Oklahoma.

Ada.—Codling moth has hurt the crop, and is selling at 50 cents to $1 a bushel. Apples are dropping worse than for several years.

Big Cabin.—The apple crop is small, due to dry weather and scab. Good apples are selling for 75c to $1 a bushel. Poor, wormy, scabby stock for most any price offered.

Chandler.—The apple crop is exceptionally large and the quality is good. Not many growers are prepared to store their crop. Price, 35c to 50c in the orchard.

Guthrie.—We lost a great many trees in the last two years by drought. This season the ground has not had any deep moisture, hence the hot winds in August caused apples to drop. None to ship. Selling 50c to 75c a bushel.

Norman.—The long hot, dry summer has hastened the ripening and also developed unusual codling moth injury, even in sprayed orchards. Selling to local dealers, 25c to 50c a bushel.

Sallisaw.—Very few apples are grown here, and are selling on the streets from the wagon at 50c to 75c a bushel.

Oregon.

Mosier.—The crop not so large as expected, because of high winds. Growers largely storing. No winter stock sold. Small lots of fall kinds selling comparatively low, and no demand.

Salem.—Favorable weather since last report has increased the size of the apple crop. Growers are selling a few apples at 50c to $1 a box. Market very dull. Acreage is not large enough to attract buyers.

Pennsylvania.

Harrisburg.—The apple crop is not as large as expected. Codling moth is unusually severe. Fall apples sold at $1 a bushel. Winter apples not sold.

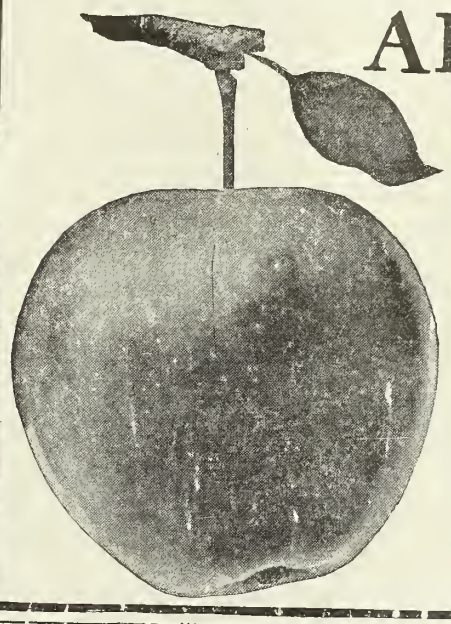
Light Street.—Not much buying in this vicinity before winter. So far I have heard of no prices being made. The crop is heavier.

Mifflintown.—Orchards not sprayed are all going down. I have a good crop of apples. About one-fourth crop for the locality. Selling 75c a bushel to $2 a barrel.

Tennessee.

New Tazewell.—The season has been favorable and the crop above average, but

We Make a Specialty of One Year



APPLE and PEACH TREES

and have a large quantity of first-class stock on hand. Write us for prices and descriptive catalog. We have 2,500 acres in general nursery stock.

HARRISON'S NURSERIES
Berlin, Maryland

Johnson City.—The apple crop is larger than usual, due to a favorable season and new orchards coming into bearing. Growers are selling and storing. Orchard run, selling 20c to 30c a bushel. Fancy, 50c to 60c. Apples are rarely ever graded, though some very good stock is being marketed. Our mountain people have good cellars for storage, and market their apples in bulk until March 1st.

has fallen badly in the last month. Cold storage men have never come here. We ship to Knoxville and nearby cities.

Utah.

Ogden.—The crop of apples not so large as expected. Some varieties badly injured by twig blight. No commercial sales yet. Apples, where sprayed carewully, will be of excellent quality.

Virginia.

Callaway.—The apple crop is large, but very few moving. A car for export started last week, another will leave this week. No buyers.

Crozet.—Apple crop not quite as large as expected. Dry weather caused some dropping. A few have sold, most will store. Lump sales so far, and difficult to get at barrel price. Yorks have been sold up to $2.75 f. o. b., and Bens to $2.50. Buyers seem to be getting scared and stopped offering to buy. Increased storage facilities is changing condition of former days.

Stuart.—Severe drouth, followed by heavy rains, caused fruit to drop badly. Selling $1.60 to $2.15 a barrel. Some fancy varieties are being sold at $2 to $3 a box.

Tyro.—Very few apples gathered, and rains block handling. Mostly storing. Some selling Yorks at $2. Nearly all growers of Pippins and Winesaps are storing. Can't handle crop for excessive wet weather, and still raining.

Waynesboro. — Fungous troubles and codling moth have done serious injury to orchards not cared for in the very best

TOO LATE TO CLASSIFY

Apple Orchard For Sale—One of the most profitable orchards in Iowa, and located at Glenwood, the recognized center of the fruit-growing section. Contains 70 acres. Price, per acre, $325. Address C. H. Dyar, Glenwood, Iowa.

manner. Our own crop is very high quality. Some growers selling, $2 a barrel.

Washington.

Clarkston.—The yield of good apples is not as large as expected, due to neglect. No buying yet. Apple harvest has just commenced. Growers and buyers both seem to think apples will be worth $1 a box.

Kennewick.—The crop is larger than last year, due to new orchards coming into bearing. Old orchards have a good crop, and the crop this year will be about fifty carloads. Thousands of acres will come into bearing in a few years.

Sunnyside.—The apple crop is larger, because of new orchards coming into bearing. Growers selling mostly on consignment. Buyers advancing from 60 to 75 cents a box, then if the apples sell for more, the growers get the benefit. A few peaches yet. Grapes and potatoes selling cheap.

West Virginia.

Inkerman.—The crop is larger and growers selling 30 to 40 cents a bushel. A good crop on uplands, nothing on lowlands.

Martinsburg.—Crop smaller, due to cedar rust and hailstorms. Selling $3 for N. W. Greening and Grimes. Few others sold. High grade York very scarce.

Select the seed corn before it is damaged by hard frosts. Husk it at once and store the ears singly in a dry place that is not too cold.

Small Fruit Notes For October

By L. R. Johnson, Missouri

The annual summer drouths which are characteristic of our climate, render it almost impossible to take up strawberry runners and set them in August for fruiting plants the next year. On land well filled with organic matter it might be done, but such land is not always available. In the Atlantic coast states such transplanting seems to be a safe operation, but it is certainly a hazardous one here. It is with such layer plants that Kevitt sets his hill-system beds and Goldsborough produces his berries of phenomenal size. Then again such plants would save a year's time in fruiting over spring set ones and would always be preferable for family garden beds.

A neighbor tells me that the new variety, Sons' Prolific, was one of the very best berries in his plantation this year. It was good in looks, in quality, and held up in size to the last. This bears out my own observations as far as my few plants would permit, and I should recommend a trial of this sort. The Columbia, another berry originating in Missouri, distinguished itself here as a large, smooth, very firm variety that should make a splendid shipper. It is a cross, I believe, between the Warfield and Aroma, and the Aroma blood is plainly dominant. It stems to make slow headway, but I have never seen an unfavorable mention of it. It is apparently quite adaptable, for it is commended in New York and a prominent Ohio grower says: "It has a much stronger plant than the Gandy, mith fruit fully as fine; the season is the same and it is twice as productive."

The conduct of some varieties is exceedingly variable. One year they are superlatively fine, the next, a near failure. Such kinds should never be depended on for the main crop, but given to those which have proved their uniformity year in and year out, in all kinds of soils and in all kinds of seasons. The Gandy is one of these; so is the Bubach, Haverland, Dunlap, and some others. Of the less known sorts the Joe has never failed me; neither has the newer kind, the Mellie, nor the Highland. This last again showed up this year with the tallest, strongest plants in the field and with an abundance of good berries.

Undoubtedly the secret of the power of the Highland to mature such large crops and such large berries is its prodigious vitality and strength as indicated in its immense top and root system It seems to me that if ever there is to be a continuous development in the size and productiveness of the strawberry, it must come through this increase in physical plant power. For bigger berries and more of them, we must have a bigger and more powerful plant system, capable of assimilating greater quantities of plant food and drawing on a larger soil area for its supplies. It is possible to imagine a strawberry plant as large as a hill of rhubarb, and if such a size were ever attained, the fruit would probably keep pace with the plant and be commensurate with its proportions.

Strawberries were rather a failure here this year, few of them approaching their best. Fendall again showed up well, much better than its parent, Wm. Belt, but it lacks foliage to shade its berries, which lay far out at the end of long stems. An early treatment with nitrate of soda might do much to correct this. The Belt again was a failure through rust, although the first year it was exceedingly fine, the best of the large fancy kinds. The new Manhattan was a failure here, and I have seen no good report of it.

As mentioned before, the best fancy berry here was the Nettie, probably the largest in average size of all the varieties on the list. It lacks in flavor and color, but it is the only berry I ever raised that might justly claim to be really later than the Gandy and more productive. The Nettie is a pistillate and that is one secret of its prolificacy. It is also quite sure and dependable and in all deserves to be perpetuated.

I am inclined to believe that we are not giving the strawberry as much plant food as it deserves, in very many cases. For its size, it produces more fruit than perhaps any other plant and therefore demands rich stores of fertility that are immediately available to its limited root system. Then, again, the plants are usually too crowded in the row and have to fight one another for existence. Try a teaspoonful of bone meal underneath the fresh-set plants, and the second spring push them on with one or two applications of nitrate of soda. I shall do this myself and observe results, although with unlimited quantities of stable manure, such as twenty or thirty tons per acre, there might be no appreciable result.

After trying low pinching of raspberry shoots to make bushes stocky and then stakes with one wire, I have been driven unavoidably to the two-wire system. Late cultivation is imperative if the plantation is to be protected from being submerged in a wilderness of crabgrass and weeds that suck up all the moisture and cause the wood of the canes to ripen their wood and to cease growth long before the real dormant season of winter. By the first of August the lateral canes have grown to a length that blocks the middles to the cultivator and puts a stop to any further efforts to suppress the grass. To go in and ruthlessly slash off these canes would certainly not be expedient and besides all that, the weight of these canes keeps dragging down the main stalks and obstructing the middles with them. Cutting them, is, of course, out of the question, so there seemed nothing else to do but to adopt the two wire system, by which the canes are confined between two wires strung a foot apart. One wire is a failure. It will not support many canes without their being tied to it, and tying is slow and costly. Two wires are almost automatic in restraining the canes, as the young shoots have only to be directed so as to grow up between them.

The installing of the two wires was simple. We had some old used telephone wire. For stakes we bought oak 2x4 pieces at the saw mill. These were sharpened slightly and then driven down twenty feet apart in the rows. They stood about four feet high and at the top of each was nailed a crosspiece, at each end of which a wire was attached and stretched down the row. The end pieces, of course, must be well braced. Good fence posts would have been better, but we didn't have them. After the two wires were attached, it took but a little while to go over the rows and place the canes between the wires. This done, the middles were found to be open once more for the cultivator, and they were given a thorough stirring which will be repeated every week until frost, keeping up growth to the last.

It has been too dry to bury tips. Unless the soil is moist they will not take root, but will often rot. Therefore we are waiting for a shower to do this work, about which we shall be more particular than heretofore. Instead of setting tips promiscuously throughout the plantation, we shall go through and select canes only from those bushes that are unusually strong and large, showing plenty of vigor in the growth of the young canes.

One other job was still to be done after the wiring and cultivating. All the rows were gone through with a horse and sled with a box bed, and a half-shovelful of poultry manure placed around each bush. As this fertilizer did not quite hold out, we then used rotted stable manure in larger quantity. Next a few bushels were fertilized with nitrate of soda and marked. Then two full rows were treated with a complete fruit fertilizer, put up by a large firm, at the rate of four handfuls to the bush. A little later on I shall try some more of this experimenting with fertilizers by making other combinations.

A LITTLE TALK ABOUT PEACHES

Peach trees grown at Pomona "make good." Lindley's nursery is near the foothills of the Alleghenies, where weather conditions are perfect—cold enough to make the trees hardy everywhere; balmy enough to make them grow straight, sturdy, clean and fast.

Lindley's peach trees never have been infected with "yellows" and have no other diseases. They are cultivated constantly, dug carefully and packed well, and reach you in the best condition.

Lindley has many varieties of peaches -all of them good, for only the *best*, most productive varieties are grown—in kinds that ripen from May to October.

"Trees That Produce Results" Our Catalog Describes Them

The market growers plant Lindley trees. Read what some of them say:

"Thirty years ago I planted fifty of your peach trees—the best I ever bought—today I order more."—W. C. Robinson, Sr., Troy, S. C.

"Received all the peach trees in fine condition." —Aaron Newcomer, Smithsburg, Md.

"Am pleased with my trees."—Mrs. M. E. Cordell, Waycross, Ga.

Our peaches have brought $2.48 a bushel, net, in Boston, by the carload. The quality makes the price.

Our catalogue tells how Lindley fruit trees are grown, with three generations of nurserymen and nearly a half century of experience back of them. It lists the choicest varieties of apples, peaches, pears, plums, pecans, lawn trees, shrubs, etc., and tells how to plant and care for them. It's ready now—write for it today.

J. Van Lindley Nursery Co.
BOX F, POMONA NORTH CAROLINA

Berckmans' Trees Make Good

Because we bud them from our own bearing orchards, grow them on rich land, pack and ship them right. We started in 1856, and we know what varieties will succeed with you. Our soil, climate and know-how combine to produce clean stock that will thrive.

Get Our Fruit Book

Our new catalog tells you all about fruit-growing. It's a big, beautiful book. It prices roses, shrubs and lawn trees, too. Get it now—it's free.

P. J. BERCKMANS CO., Inc.
Box 1070F, Augusta, Georgia

In writing please mention The Fruit-Grower and Farmer.

DIRT BANDS Have all the advantages of paper pots and none of the disadvantages. They are the best thing for early vegetables ever offered the grower and will increase your profits $50 to $100 an acre. Let us show you.
P. B. CROSBY & SON
BALTIMORE, MARYLAND

DO IT NOW

Drop a postal for the new, handsome Book describing full line Illustrated

TREES, SHRUBS, VINES AND PLANTS

It will aid you in planting Commercial or Home Orchards, beautifying your Grounds and will save you money. *It's up to you.*

No Agents. Direct to Planters.

Please mention this Paper.

J. B. PILKINGTON
NURSERYMAN
PORTLAND, OREGON

Strawberry PLANTS Ready after Fall Catalog Now Ready October 15
J. A. BAUER, Judsonia, Ark.

Grow the Feed at Home

The Silo a Profitable Addition to Farm Equipment

Many silos were built in the Middle West last summer, and the owners will be feeding silage to their farm animals for the first time, this winter. Many men who have been using silage only for dairy cattle probably will feed it to other farm animals for the first time. It is important that they understand the composition of the feed and just how it can be used in the most efficient way.

Silage is a bulky feed, rich in carbohydrates, or fat-forming elements, but lacking in protein. In calculating the rations for your animals, always be sure to include feeds that are strong in protein, such as good clover or alfalfa hay, to balance the ration. If this fact is understood, silage may be used with profit in feeding almost all kinds of farm animals. It does not pay to feed silage to fattening hogs, because it is too bulky, but it does make a good feed for brood sows. If they are fed a good ration of silage and alfalfa hay, they will come through the winter in good condition. Be very careful about feeding silage that is the least bit mouldy to any farm animal, and never feed it to horses under any circumstances. Mouldy silage will kill horses.

The amount of silage that should be fed to a milk cow will depend on the capacity of the cow. They should be fed just a little less than they will eat clean. If cows are fed a proper ration of hay and grain they probably will eat from 35 to 45 pounds of silage a day, and with some cows this amount will be exceeded. As silage is very laxative, its overfeeding will have a bad effect on the system of the cow, and this point should be watched carefully. Silage should be fed in small amounts until the animals get used to it.

Remember this about feeding more silage than the animals will eat up clean: When the silage is exposed to the air, chemical changes rapidly take place in it, especially if weather is hot, and bad odors are given off. Watch this point carefully, and never feed more silage than the animals will eat up clean.

Under average farm conditions, milk may be produced from silage for about two-thirds the cost of the ration when silage is not used, when the rations are calculated properly in both cases. An acre of corn in the form of silage will produce more digestible matter than any other crop. Silage usually is fed to milk cows in the morning and evening, and they are allowed to eat hay between the two feeds. The proper amount of grain to feed will depend on the cow; for dry cows it will not usually be necessary to feed any grain, if good alfalfa hay is fed. It will not be necessary to feed much grain to growing animals.

Silage was used with great profit as a feed for fattening cattle by many of the cattle feeders of the West, in the last year. Many of the lots of cattle that topped the market at Chicago and Kansas City, in the last few months have been fed silage. One of the best rations that can be used is to feed all of the silage and good, bright clover or alfalfa hay that the steers will eat clean, and about one-third of a pound of cottonseed meal a day for every one hundred pounds of weight of the steer, or its equivalent in other concentrated feeds. Such a ration is comparatively cheap, and most of it can be produced on the farm.

The growing of all of the feeds that possibly can be produced on the farm is important. One of the sins of the American people is the moving of their produce around too much. Many cattle feeders seem to think they must assemble alfalfa hay that has been produced in one place, corn that has been produced in another state, and cottonseed meal from the south to make the ration to fatten their steers. Now, that ration will fatten the steers all right, but after the stockman gets done paying for the feed, with several good freight charges, there may not be much profit. Every effort should be made to grow all of the feed that possibly can be grown on the farms where it is fed, for it takes considerable effort to move bulky feed.

One of the best cattle feeders in northeastern Kansas fed a bunch of steers last winter on feed he had produced on his farm. They were fed silage, alfalfa hay and corn. The steers brought a higher price than any other lot the day they were sold in Kansas City, and they gave their owner a good profit. It pays to produce all the feed at home that you possibly can.

In feeding silage to fattening cattle, never mix the silage with grain, for the steers will "mess over" the silage when they are looking for the grain. Feed the silage in bunks, separately.

One of the profitable uses of silage is feeding it to chickens in the winter, for winter egg production. If the hens have plenty of green material in the winter they will make a much better egg record than if they were on dry feed.

There should be more silos used to supplement pastures in the summer. In August and the first part of September, the pastures usually are very poor, and animals of all kinds frequently stand still, so far as milk production or laying on flesh is concerned. If you have silage to feed to the animals, you need not worry about the bad effect of dog days. If the animals have proper feed, they will produce results, even if the flies are bad. There should be a winter silo on every farm where ten head or more of animals are kept, and if many more are handled, it will pay to build a summer silo, also. Two silos would be a profitable addition to the equipment of most western farms.

Protecting Calves From Scours.

Two kinds of scours affect young calves, common scours, which are caused by indigestion, and white scours, or calf cholera.

Calf cholera is contagious, but if a calf gets the disease, it will occur a few days after birth. If the pens are kept clean there is not much danger from this disease, usually. Stalls used for calving purposes should be carefully disinfected after a calf is born.

Common scours, which are caused by indigestion, are much more common. The indigestion may be traced to faulty methods of feeding, the most common of which are: overfeeding, cold milk, sour milk, irregular feeding, dirty pails and dirty stables. When a calf shows signs of the scours, the milk supply should be reduced one-half, and the amount gradually increased as the calf shows signs of improvement. This usually will cure them, but if it does not, feed about a tablespoonful of soluble dried blood, and stir in well with the milk. Dried blood not only acts as a tonic, but it has some food value, and is often fed even when the calves do not have the scours.

If the calves have the scours very bad, the formalin treatment is good. Add one-half ounce of formalin to fifteen ounces of distilled water to make the solution. Then add one teaspoonful of this mixture to each pint of the milk that is fed. This method is very effective.

Chalmers 1913 MOTOR CARS

Made in Chalmers Shops

Send For The Chalmers Pedigree

Every man who owns, or expects to own a motor car, should send for our book, "Story of The Chalmers Car."

There is good information in it for every car buyer. It will tell you how to look for both strong points and weak points in any car you buy. It tells just how Chalmers cars are built, and why they give more service and satisfaction than any other.

It will show the man of hard common-sense just why we can build a car at $1950, that is not exceeded in strength, style, power, and durability by any other car at nearly double the price.

This is a broad statement, but true and provable. There is no mystery about it any more than there is mystery why one farmer gets 20 bushels per acre, and another gets 40. There is a reason for everything.

We want you to realize the value of these great features:

Electric lights; Turkish cushions; nickel trimmings.
Improved springs; self-starter; long stroke motor.
Demountable rims; eleven-inch upholstery.
4-forward speed transmission; speedometer.
Special silk mohair top; rain vision windshield.

A Chalmers is the car for you to buy for real service. You cannot afford to buy a cheaper car, and you cannot buy *better* service no matter what you pay.

Send for the book on the coupon today.

"Thirty-six", $1950; "Six", $2400
(*Fully Equipped*)

Chalmers Motor Company.

Detroit, Michigan

This monogram on the radiator stands for all you can ask in a motor car

Please send "Story of the Chalmers Car" and catalog of 1913 cars

Name.....

Street.....

City.....State..... Fr.-G.

Please make it a point to always mention The Fruit-Grower when you write in response to an advertisement.

CENTURY

Ready Mixed Paint

Guaranteed For Ten Years

CENTURY HOUSE PAINT. in 1-gal. cans, Any Color. Terms cash, - - Per Gallon, **$1.20**

CENTURY BARN PAINT, in 1-gal. cans, Red, Green and Gray. Terms cash, Per Gallon, **.65**

FREIGHT PAID to any station east of the Rocky Mountains on all orders of six gallons or more, except to N. D., S. D., Colo., N. M., Tex., Okla., Miss., Ala., La., Ga. and Fla. Delivered price to these States is 5c. per gallon additional.

Write For FREE Color Card, catalogue and prices, or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to the Southern Illinois National Bank

CENTURY MFG. CO., Dept. 739 East St. Louis, Ills.

Hood River Apple Trees For Sale

Vigorous Trees, Well Rooted, True to Name

Jonathan Rome Beauty Delicious
Spitzenberg Newtowns
Arkansas Black Ortley Gravenstein

Also a good selection of other Standard varieties. Write for catalog and price list. You will find our prices right.

Hood River Standard Nursery Co., Hood River, Ore.

Notes From Colorado

Reducing Damage in Express Shipments.

As these notes were written—Sept. 20—fruit harvest is on in full blast, for we started several days ago on Italian prunes. The former owner of this ranch planted about twenty-five acres of prunes, varieties being Italian, French and Silver. At first the crop was dried, but lately the fruit has been marketed as fresh fruit, and brings fair returns. The Italian variety usually sells for best prices, for markets seem to prefer red or blue plums, whereas the French prune is a reddish purple and the Silvers are a golden yellow when ripe.

We will have about three carloads of the Italians, the fruit being packed in four-basket crates. The other varieties will yield perhaps as heavily, but will likely not sell as well. Both French and Silver prunes, however, are fine for canning and preserving, but it is expensive business trying to educate the public to appreciate a variety which is not generally known. Italian prunes canned are perhaps the cheapest fruit the city housewife can put up. The fruit is large and meaty, with a very small pit, and with no skin to be removed. There is no waste, therefore, in canning this fruit, and in winter it furnishes the acid which the appetite so much craves. Some city folks appreciate the value of this fruit for canning, but most of the prunes are sold at fruit stands for eating out of hand.

Along this line it may be interesting to mention an experience of several seasons ago in marketing these Italian prunes. That year the fruit ripened very rapidly, and at that time we had had no experience in putting the fruit in four-basket crates. It seemed probable that a lot of the fruit would go to waste, when it occurred to us to try to sell some of the prunes packed in twenty-pound peach boxes. A commission merchant at St. Joseph was asked about the plan, and he discouraged it, saying the dealers and consumers had never been educated to buy Italian prunes in this package, and he gave it as his opinion that the fruit would not sell.

He agreed to handle the car, however, to see what could be done. On the day the car was shipped an advertisement was inserted in a St. Joseph daily paper stating that in a few days a car of "fancy Colorado plums" would be on market, and that the fruit was ideal for canning and preserving; attention was called to the fact that these plums have all the richness of the Damson plum, but are much sweeter; they are perfect freestones, with very small pits, and are the cheapest fruit that can be put up.

The next day the advertisement was changed somewhat, but always the fruit was referred to as "Fancy Colorado Plums," to avoid any prejudice that might exist against prunes.

After a few days' advertising the consuming public had read all about the good qualities of these plums, and were ready to buy. When the fruit arrived much of it was over-ripe, but the car was closed out promptly, and now it is an easy matter to sell this fruit on the St. Joseph market. In fact, there are housewives who wait until late in the season, when the days are cool, to buy these prunes for canning. Nothing is better, and the advertising campaign paid, because the fruit made good. It might be a good plan this season to try to educate some good market to appreciate the good qualities of the French prune. Certainly the fruit is very fine this year although, of course, French prunes are never as large as the Italian variety.

An Experiment in Shipping.

During the present summer we tried an experiment in shipping fruit by express, and the experience may be helpful to others. Early in summer we had a very fine crop of apricots, and the experiment was tried with this fruit. The apricots were allowed to get thoroughly ripe, and were somewhat soft, so that the packages would have to be handled carefully if the fruit were to arrive in good condition.

At various times we have noticed expressmen pitching boxes or crates of fruit from the car to truck, and frequently it happened that a package fell to the platform and was badly damaged. Always the fruit was handled roughly, for in catching the package the man usually had no time to select the place for taking hold. Having this in mind, we decided to try the experiment of nailing two crates together, making a package weighing about fifty pounds, instead of one weighing half that much.

The two crates were nailed together by putting an apple-box cleat at each corner, which could be easily removed when the package reached its destination. This plan not only increased the weight of the package, but it insured one crate always resting squarely on the cleated top of another, so that there was less likelihood of the upper package sliding around until it rested on the center of the top of the package beneath, rather than on the cleats.

Four crates of apricots were shipped by express to St. Joseph, a distance of about 700 miles, with one transfer of express. The fruit was fully ripe, but carried to destination perfectly, whereas if shipped singly the apricots would doubtless have been badly mashed in transit.

About the time this shipment was sent a route agent of Wells-Fargo Express Company visited us, and he said that he was trying the same thing in shipping peaches from Palisade, Colo. These boxes of fruit weigh practically twenty pounds each, and he made a shipment from Palisade to Chicago. In the lot were single boxes, two boxes nailed together, three boxes nailed together, four boxes attached, and five boxes attached. The test was made to see which was the best way to arrange the boxes for long-distance shipment, the fruit being all of same quality and shipped at same time.

The result of this test showed that two or three boxes nailed together carried much better than single boxes or where four or five boxes were attached. The single box was thrown about, from one man to another, and the fruit was badly damaged on arrival. When four or five boxes were nailed together the weight was so great that the cleats binding the boxes together were broken, and the boxes separated. The combination of two and three boxes, however, carried perfectly. The boxes remained together after several transfers, and the fruit showed no injury whatever.

It is the opinion of this man that two boxes nailed together is about right. It makes a package that can be easily handled by the express messenger, and at the same time it is so heavy it cannot be handled as carelessly as single boxes often are. This test will be continued, we are informed, by shipping peaches or other tender fruits from the Pacific to the Atlantic coast, but our experience has convinced us that it is a good plan to put at least two boxes or crates together.

This experience may be worth while to shippers of strawberries and other tender fruits. Two crates could be nailed together, one above the other, and would doubtless carry much better than single crates.

Inter State

For $2400 you cannot buy better value than the Inter-State

"Car-Service and "Car-Convenience" make the Inter-State superior even when compared with cars costing a great deal more. Read these specifications and see for yourself that we have built the Inter-State to your order.

The Long Stroke Motor

The Inter-State long stroke motor answers to your urging with a full inch longer step.

That longer step means more power—steadier power—less effort—less heat—less oil—less gasoline.

Multiple Disc Clutch

The tremendous Inter-State engine power is transmitted through a multiple disc, cork insert clutch.

The clutch engages smoothly, eliminating sudden jerking and straining on the engine and axle.

Full Floating Rear Axle.

The Inter-State full floating rear axle needs no expression of merit.

It is the highest type of axle made and embodies the best principles of the entire axle industry.

Electric Self-Starter.

It had already reached its highest development before it was even considered as an Inter-State specification.

The Inter-State electric starter is operated by turning a switch at the driver's seat.

It will revolve the motor continuously for 50 minutes—or until the motor picks up under its own power—at which time the apparatus becomes disconnected as a starting device, and operates as an electric generator, used to furnish storage for ignition and lighting.

Electric Lights.

The Inter-State is equipped throughout with electric lights.

The powerful searchlights, capable of throwing their piercing rays 1,000 feet—two handsome sidelights—one tail and one speedometer light—all operated by turning switch at the driver's seat.

Automatic Tire Pump

Every Inter-State car is equipped with an automatic motor driven tire pump which sends clean, fresh air into the tires without any exertion whatsoever on your part.

Equipment

Your Inter-State comes to you as "distinctively complete" as any automobile manufacturer knows how to make it.

Mohair top, side curtains, automatic wind shield, speedometer and clock, complete kit of tools, are only a part of what we consider full equipment.

Model 40—Five Passenger Touring Car	$2400
Model 41—Four Passenger Demi-Tonneau	2400
Model 42—Two Passenger Roadster	2400
Model 50—Five Passenger Touring Car	3400
Model 51—Four Passenger Demi-Tonneau	3400
Model 52—Two Passenger Roadster	3400

Write today for the Name of the Inter-State Dealer in Your Territory.

The Inter-State Automobile Co., Muncie, Indiana
1010 FIRST STREET

Unequipped and without Self starter—30A $1700—32B $1750

Build a Fine, New Home

Save $300 to $500 or More!

We Furnish Everything, Including Free Plans

Send for Gordon-Van Tine Free House Plans and record-breaking low prices on Millwork and Building Material. We will furnish everything to build your new house complete, and save you $300 to $500 or more. We undersell everybody and guarantee quality, safe delivery and satisfaction or refund every dollar. Three big banks behind our guarantee. Satisfied customers everywhere.

Write for Grand Free Millwork and Building Material Catalog

This mammoth catalog offers 5,000 big bargains in Doors, Windows, Mouldings, Stair and Porch Material, Flooring, Frames, Lumber, Mantels and Grates, Builders' Hardware, Wall Board, Paints, Glass, etc., etc. All bright, new stock, in an endless variety of special designs.

Lumber and Millwork for this House, $867

2-ft. Window 57c

Strong Door 77c

Windows, 57c; Doors, 77c; Corner Blocks, 2c; Roofing, per 100 square feet, 75c; Oak Flooring, per 100 feet, 52c; Inside Frames, 45c; Barn Sash, 27c; Porch Spindles, 1c; Quarter-round, per 100 feet, 25c; Stair Balusters, 3c. Paint, per gallon, $1.10; 1,000 Star A Star Shingles, $2.98; Art Front Door, $2.30, and thousands of other astounding offers.

Our Greatest Catalog—Free for a Postal

Illustrated in colors, filled with money-saving offers, now ready. Architects' Plans, worth $50 to $100, furnished free if you use our Building Materials. Write (209)

GORDON-VAN TINE CO. 3095 Case St., Davenport, Ia.

Visits to orchards in various parts of the Grand Valley has convinced us that the size of the apple crop has been greatly over-estimated, for a lot of apples on the trees are not going to be as large as in ordinary seasons. This is the general complaint all through Colorado, due to the ex-

tremely short season, no doubt, and perhaps also due to the over-loaded conditions of many trees. In all western Colorado a killing frost occurred on September 15, an extremely early date, making one of the shortest seasons on record, for spring opened so very late that the growing season for 1912 was practically forty days short of normal.

This condition has had its effect upon all fruits. The peach crop was far short of early estimates, because the fruit did not attain normal size. The same will be true of the apple crop, for a lot of apples will be too small to market.

The early frosts have helped to color apples beautifully, however, and it is likely that Colorado will ship out as fine fruit as ever grew. Growers have sprayed more effectively than for several seasons past, and with perfectly sound apples, of beautiful color, the crop should sell well, even though the apples are not as large as usual.

Markets are beginning to discriminate against overgrown apples, however, for it has been found that large, coarse-fleshed apples will not keep, and often they are lacking in flavor. Apples of medium size have much closer grain, and the fruit has a crispness not known in the more bulky apples, and as a result these small apples can be kept much longer than the big ones. The only fault to be found with the little ones, from the standpoint of the grower, is that they do not fill the boxes fast enough.

We were reminded the other day of the splendid keeping qualities of small, well-colored apples by a neighbor stopping us and asking when the apple harvest will begin. He said he wanted to come up when we started packing and buy a wagon load of apples too small to put in boxes. He wanted apples about two inches in diameter if they could be had, and said that two years ago he had bought a load of these apples, hauled them over rough mountain roads loose in a wagon bed, handled them in the cellar without any particular care, and yet these small Jonathan apples had kept in perfect condition until the last of them were used, about the middle of the following July.

This man said he had put up apples for his own use time and again, and that after that season's experience he would never put up any but small apples, on account of their better keeping qualities.

There will be plenty of small apples this year to enable anyone to make a test of this.

Just now we are enjoying our crop of celery, and it is certainly extra fine. Variety is White Plume, and it is rightly named. The cool nights and clear, sunshiny days are enabling the celery to make a wonderful growth at the close of the season, and the plants are certainly living up to their opportunities. During the summer the plants were not pushed, but they are making up for this now. It is too bad that every farmer does not grow enough celery for his own use at least.

Our garden is closing the season in excellent condition. This garden has been the wonder of this section during the past season, and many ranchers have driven long distances just to see it.

At the fruit and vegetable show during the present week we took nearly all the premiums on vegetables, and notwithstanding the lateness of the season, our gardener had about thirty kinds of vegetables on exhibition. Here are some of the things he showed: Radishes (two varieties), lettuce (two varieties), turnips (two varieties), beets, peas, beans (two varieties), onions, potatoes, sweet corn, tomatoes, cucumbers, peppers, endive, carrots, parsnips, salsify, parsley, Swiss chard, canteloupes, watermelons, pumpkins, squash (eight varieties), celery, cabbage, cauliflower. These vegetables were not grown simply for show, either, but we have had them for use on our table right along during the summer, except, of course, some of the late ones, such as parsnips and salsify.

Of ten varieties of apples exhibited by Morrisania, we won five premiums and two seconds, so we feel that we did not do so badly, considering the competition. All our neighbors have good apples this season, and some very fine fruit will be sent out from our station. Before these notes are published the harvest will be on, and there will be busy times all through the Grand Valley in Colorado until it is finished.

Grading Oranges on the Tree.

Orange-growers on the Pacific coast are fast becoming converted to a theory of the agricultural department as put in practice by Mr. A. D. Shamel, an expert of that department. The demonstration is proving to the satisfaction of the orange-growers that there is distinct variation in the buds of the same orange tree, and that by working them up the tree can be improved so that its fruit is worth $1.50 more per box on the New York market.

When Mr. Shamel went to the Pacific coast, one of the first things he discovered was that there was about seven different varieties of naval oranges on almost every tree. He pointed out that there were differences, that some of the oranges were thick-skinned and almost sour, and that others were thin-skinned and almost as good as an orange can be. They graded all the way between these extremes.

"Of course they do," said the growers. 'Naturally some oranges are better than others. They can't help it."

"But if they can't help it, you can," said this unreasonable young man who had been breeding corn and tobacco in New England and had scarcely ever seen an orange outside of a fruit store.

The growers sniffed and he went to work to prove his theory. He got buds off the branches where the good thin-skinned oranges grew and grafted them on the undesirable spots on the trees. The buds came true to type and he found out that by working carefully, he could make a sort of clothes' rack of an orange tree and hang good oranges on one side of the tree and poor oranges on the other. He extended the work and got a lot of improved trees growing. Then he got some of the growers to grade a big shipment of oranges, according to his directions and sent them to the New York market to see how the buyers ranked the different sorts of fruit from the same tree.

The result was that there was a difference of $1.50 in the price they paid for the high grade and low grade fruit. The growers capitulated. They said it might not be true but it had been done anyhow.

Mr. Shamel spread his doctrine of selected budding, and when he got hold of a skeptic he did not argue with him but took him out to his private demonstration orchard, where he had good oranges growing on one side of the tree and inferior ones on the other. He could talk 250 words a minute if he wanted to but he let the variegated trees talk for him. The orange trees had an effect, and the grower who saw them went back converted.

It is a big step in fruit breeding and the growers are profiting by it.

A. P. McSWAIN.

Facts.

No investment is as safe and sure of large returns, as first class fruit and farm land bought now at a low price.

No land is as scarce or is in as great demand as first class Grape Fruit land.

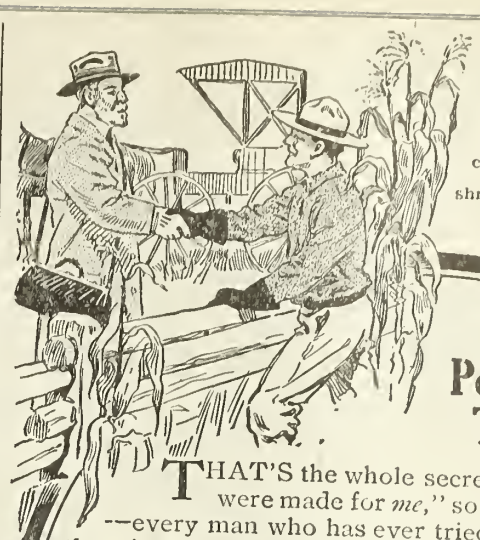
No fruit grows into maturity and brings large returns as rapidly as Grape Fruit.

No better locality, with older, larger, better bearing groves can be found in Florida, than where we are developing large groves of our own.

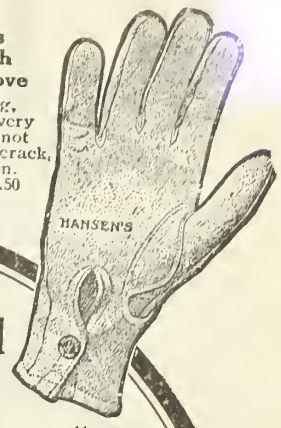
No one can offer you better Grape Fruit, Orange or Vegetable land at any price than some we will sell you.

No one can develop your grove better and cheaper than we can, with our powerful gasoline stump pulling and palmetto clearing machinery, first class teams and farm implements, energetic northern help and experienced southern fruit grower and nurseryman.

For particulars write F. O. Farwell, 14 Fenelon Place, Dubuque, Iowa. For proofs write R. S. Farwell, Gardener, De Soto County, Florida and tell him when you will be there to be shown.—Adv.



No. 398
Hansen's Dan Patch Driving Glove
Perfect fitting, conforms to every motion. Cannot shrink, shrivel, crack, peel or stiffen. Retails at $1.50 per pair.



The Personal Touch

THAT'S the whole secret in Hansen's—"they were made for *me*," so says farmer or doctor—every man who has ever tried a Hansen—each finds that it saves *his* hands and especially boosts his work along. There's a free book that tells why this is so—why

Hansen's Gloves

are soft and yielding so they give you free use of every muscle—yet are strong and strain-resisting. They keep your hands in prime condition and *last longer* than their value in many pairs of the flimsy, bulky kind.

The Hansen Service is not only "good and long," but *long* and *good*

The Free Book also illustrates the many styles—for railroad men, linemen—farmers—gloves for sport and driving, motoring, motorcycling, hunting, etc. From it you can select a pair for "try on" if your dealer cannot supply you. An *approval* test will prove the Hansen value. Write to

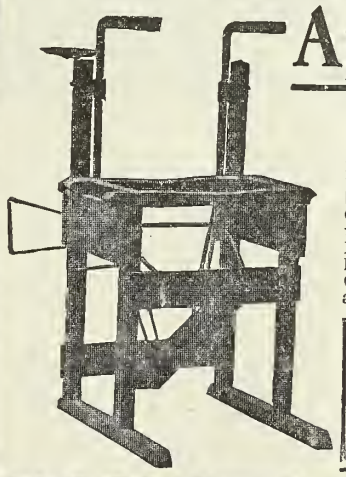
O. C. Hansen Manufacturing Co.
118 Detroit Street
MILWAUKEE, WISCONSIN

No. 326
Hansen's Protector
Tough leather, pliable, easy and perfect fitting. Price $1.75 to $1.50

O. C. Hansen Mfg. Co., 118 Detroit St., Milwaukee, Wis. Please send me Free, postpaid, book showing Hansen's Gloves. (Say whether for work, driving or sport).
Name
Town
RFD
State

The CRESCENT Apple Box Press

"A Time and Money-Saving Machine"



The Orchardist's Friend. The cheapest, lightest and most durable machine on the market. Its utility has been proven during the past five years. Its use easily saves one man's time and wages daily during the packing season. The boxing is also done with less injury to the fruit. One pressure down on the foot treadle will hold the cover tight for nailing. No split covers. Nails handy on a tray. Light weight makes it handy to carry to any part of orchard. The CRESCENT Press is so made that it is easily adjusted for boxing Peaches, Prunes, Pears or other fruit packages. Agents wanted. Write to

Price $7.50
F. O. B. CANON CITY, COLO.

C. J. MELLER
Owner and Manufacturer
Canon City, Colorado

Roberts Lightning Mixer

Quickest, most thorough mixer ever invented. Beats eggs in half a minute; whips cream in one to two minutes. The whirling dasher does it. Easily cleaned. Most dealers sell it.

SPECIAL OFFER: Send 50 cents and dealer's name for 1 mixer postpaid by return mail. You won't be happy till you get it.

H. B. SMITH, Sales Agent
3833 Shenandoah Ave., ST. LOUIS, MO.
Jobbers, retailers and agents should write us for special prices to the trade.

Selling the Produce At a Profit

(Continued From Page 5.)

around Wathena this year. About $30,000 was realized by the association from this line. The average price paid to the growers was $2.20 a crate. The Cumberland and the Kansas are the two principal varieties grown in that section.

While the crop of cherries was small, only about $700 being realized from this line, it is a crop of increasing importance in that section. In the future, cherries will be one of the important fruit crops of the Wathena district. Early Richmond is the principal variety grown.

The blackberries were badly injured by the drough, and they did not make the crop expected. However, the price was good, and most of the growers made a good profit on the crop. Rain came in the picking season and helped the crop some, and helped most of the other fruit crops very much. About $25,000 was realized from the sale of blackberries. About $1.75 a crate, as an average for the season, was paid to the growers.

The grape crop in the vineyards of the Wathena growers was very good, this year. The summer was fairly dry, and there was little loss from black rot, which usually causes serious damage to the grapes in that section. Not more than one per cent of the growers spray for this disease, and in the past much of the crop has been destroyed, some years, by the rot. However, there is an increasing interest in spraying among the growers, and many more will spray their vineyards next year. There have been failures from spraying, and Mr. Martin is of the opinion that it takes one sprays.

Fifty cars of grapes were shipped this year, for which the association received an average of $600 a car, free on board cars at Wathena. Up to this year, the grapes have all been packed in eight-pound baskets, but Mr. Martin has made the interesting discovery that most buyers will pay as much for a crate holding seven-pound baskets as for a crate containing eight-pound baskets, and much of the crop was packed in seven-pound baskets this year. Concord and Moore's Early are the two principal varieties grown, about two-thirds of the crop being Concord.

The apple crop in the Wathena section is good. Most of the growers care for their apple trees fairly well, and the quality of most of the crop is good.

One of the interesting things about the fruit industry at Wathena is that the farmers grow many kinds of fruit. They will start in with the strawberry crop in the spring, and they are busy, with occasional intermissions, until apples are harvested in the fall. Then there is plenty of work preparing for the next season to keep all hands busy in the winter. In other words, the Wathena growers have developed more than one year to get black rot under control, no matter how well a system that keeps them busy with about the proper amount of work most of the year, and they have arranged the harvesting so they are not rushed too much then, for each farmer does not grow a large enough acreage to make the harvest help problem so very difficult to solve.

There are enough pickers in the country around Wathena to pick about one-third of the crop, and two-thirds of the help in the fruit picking time must be hired from other places. Many of the pickers come from St. Joseph and the other cities and towns in that part of the country. When the farmers board the pickers, and they do in most cases, the average price paid for picking is thirty cents for the twenty-four-quart crates for all of the small fruits. One and one-half cents is paid for picking every seven or eight-pound grape basket. At such prices the average picker makes about $2 a day, though many will make much more. When board is not furnished a higher price is paid for picking; about five cents a crate more, usually. For picking apples the pickers are paid by the day, and the average price for good pickers is $2.

The association has a capital stock of $25,000, $8,000 of this money being invested in the warehouse and office building. Most of the executive business of the company is handled by W. R. Martin, the manager. The members of the association have meetings, elect the officers and determine the general policy of the company. The meetings of the association also are valuable in that they give the members a chance to meet and talk over the best ways of handling the crops and the best methods of growing. In addition to the manager, the office force consists of two bookkeepers, an inspector and a bill clerk. The manager is employed all of the year, and the rest of the force is employed during the fruit shipping season, from about May 1 to November 15.

This year, with sales of $150,000, Mr. Martin has managed the business of the association so the total expense of the office, including the salaries of the manager and his assistant, are about $2,800. And that is "going some." The association usually pays about seven per cent interest on the capital stock, and, in addition, about $5,000 is divided at the end of the season among the growers, in proportion to the amount of berries they have sold.

The company saves the members many thousands of dollars every year in the purchase of the crate material, and this is the way they manage it: In November a card is sent to every member of the company, to be filled stating the amount of crate material they will need for the next year. All of these replies are returned by December 1, and then Mr. Martin esti-

OVERLOOKING THE ROLLING, ORCHARD-CLAD HILLS NEAR WATHENA.

SECURITY Ladders

Security Construction Is Rigid and Inspires Confidence

Security Patent Step Joint Makes these Ladders Strongest Where Others are Weakest

Gold Medal Award Seattle World's Fair

8 ft. Tripod $3.50
A Tree Saver

"Not a Nail in Them"

Exit GRIEF—Enter SATISFACTION

Are you paying a workman to use a LADDER that WASTES his TIME?

Why not equip with Security Ladders? Briefly: They are long lived and in EVERY WAY satisfactory during the WHOLE of their life.

LIGHTNESS is combined with extreme STRENGTH and RIGIDITY in this make. Flat steps, comfortable to stand on. Security Step Joints are permanently rigid

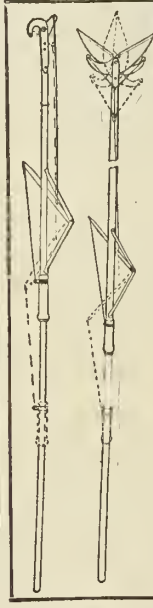
What can you say of other makes? All patterns embody the famous SECURITY PATENT STEEL BRACKETS, head construction and other valuable features that have won renown.

We make SECURITY LADDERS in numerous styles and lengths.

Freight allowance on 5 ladders.

SECURITY LADDER CO., Inc.
1342 E. 17th Street, LOS ANGELES, CALIF.

Pruners and Pickers



BASTIAN'S

Built for Service, from the best materials, properly put together.

Increased power from the new compound leverage, slide method of operation and the finely tempered Sheffield, tool steel blades, with their keen cutting edge, make Bastian Pruners the popular tools, for light and heavy pruning.

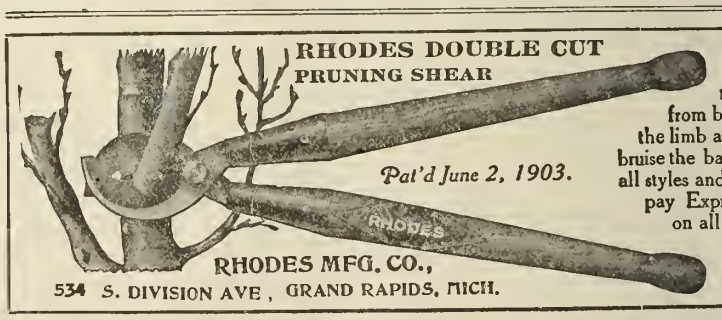
Hooks for Heavy Work. Shears for Light Work.

BASTIAN PICKERS

Lose some of your best fruit, because it's out of reach? Bastian Pickers Stop This Loss; they're made for the purpose.

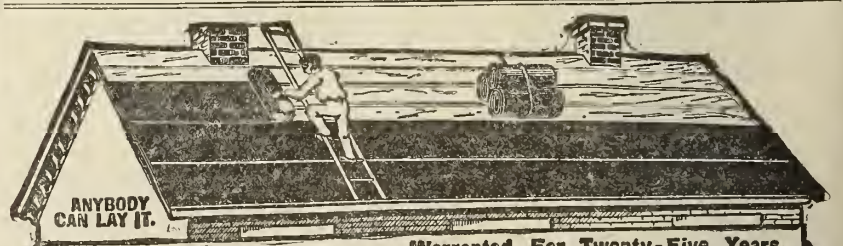
Standard lengths, Pruners 5 to 16 ft. Pickers and Shears, 5 to 12 ft. For sale by all the best dealers.

MANUFACTURED BY
STOREY MANUFACTURING COMPANY
214 Front Street Portland, Oregon.



RHODES MFG. CO.,
534 S. DIVISION AVE, GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.



Rubber Roofing

Warranted For Twenty-Five Years.

FREIGHT PAID To Any Station East of Rocky Mountains, except Texas, Okla., Colo., N. D., S. D., Wyo., Mont., N. M., La., Ga., Ala., Miss. and Fla., on all orders of three rolls or more. Special Prices to these States on request.

ONE-PLY .... Weighs 35 lbs., 108 Square Feet, $1.10 per roll.
TWO-PLY ... Weighs 45 lbs., 108 Square Feet, $1.30 per roll.
THREE-PLY . Weighs 55 lbs., 108 Square Feet, $1.50 per roll.

TERMS CASH: We save you the wholesalers' and retailers' profit. These special prices only hold good for immediate shipment.

Indestructible by Heat, Cold, Sun or Rain.

Write for FREE SAMPLES or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to Southern Illinois National Bank.

Century Manufacturing Co., DEPT. 738 {East St. Louis, Illinois, or 200 5th Av., New York City.

mates how much material he should purchase; usually it is from twelve to fifteen cars. He buys one or two cars more of crates than has been ordered, for he has found the growers usually need more material. He sends letters to all the principal crate factories, stating the amount of material he desires to purchase, and asking for their lowest cash price. He usually buys before January 1, and on a cash basis. When the material arrives the members are notified, they get their material from the cars, and haul it to their farms at once. All of the material that is stored in the company's warehouse is the extra car or two that has been ordered.

The farmers make up much of the crate material in the winter. When too much material has been ordered, Mr. Martin has not had any trouble in keeping it over to the next year. If the growers have not the money to pay for the crate material when they get it in the winter, they never have any trouble in borrowing the money at the local banks. By buying the material in this way the growers at Wathena pay about twenty per cent less, on an average, for their crate material than the other growers in that section who buy their material from dealers.

When a renter moves on a farm of a member of the association, he markets his berries on the stock of the member, and the association is informed of the proportion of the crop the renter is to receive, and when the company pays for the berries, the renter is payed his share and a check for the balance is sent to the owner.

When a member is taken into the association he pays $10 into the company, which is known as expense money, and is not returned if he leaves the association. Then, in addition, a member must own at least $5 worth of stock, and he may own as much as is available; some members have as much as $1,000 invested in the company. This stock may be sold, if the member leaves the association.

Fruit growers organized the association in 1905. Mr. Martin has been the manager since the company was started. The company was successful from the start, and its success has attracted much attention over the country. Last year Mr. Martin received letters of inquiry from every section of the United States, and one from Portugal, in regard to how the association is organized and the way the business is handled. The success of this association should point the way for other communities where the fruit growers are not getting a fair price for the fruit they produce. In speaking of the increased money returns, Mr. Martin said: "There was not much money in fruit growing here before this association was organized. The buyers paid us what they wanted to, and we had to take what they offered. I have hauled berries here for fifty and sixty cents a crate, and many times the prices for other fruits ranged on that level. Now we get prices that give a profitable return to the grower. The producer gets the money the middleman used to get."

The land around Wathena, except in the river bottoms, is broken, and much of it is very hilly. All of the hills are farmed, and they produce good fruits. The average price of land is about $250 an acre, and much of it will sell for even more than that. The owners are making good profit on the land even at that price, for the crops that are produced are valuable. In addition to the fruit, some corn and considerable alfalfa is grown, and most farmers have quite a few hogs and chickens. Very good crops of alfalfa are raised on the bottoms.

Watch the Pastures.

Most of the pastures in the Middle West will dry up this month, or in the first few days of October. Especially is this true of the prairie, bluestem pastures, where most of the cattle are feeding. Bluegrass pastures, will last longer than prairie pastures, if they have enough moisture to grow properly, and fortunate is the stockman who has bluegrass for his farm animals in the late fall and early spring.

Every year there are many farmers who leave stock cattle on the pastures too long, and the animals begin to lose flesh even before they are placed on dry feed. This is bad, for the animals that begin to lose flesh in that manner never will regain the flesh they have lost until grass comes again.

Watch the animals carefully this year. You can tell if they need additional feed if you go over the pasture and study the condition of the grass. Begin to feed roughage to the animals just as soon as they need it, and you can get them started into the winter in good condition.

BUILDING OWNED BY WATHENA (KAN.) FRUIT-GROWERS' ASSOCIATION.

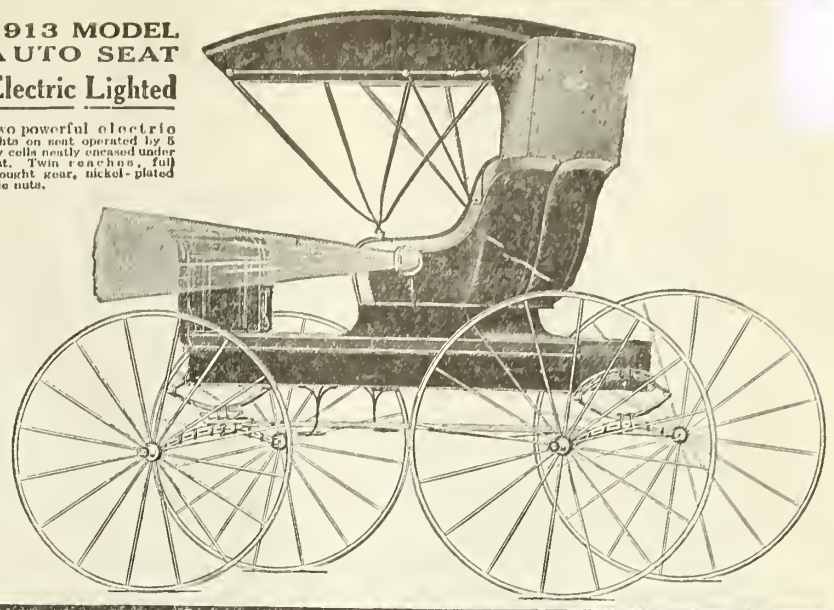
Irrigation Congress Will Meet.

The National Irrigation Congress will meet in Salt Lake City, Utah, September 30 to October 3, inclusive. Among the big things that will be discussed are: The best methods for storing flood waters and measuring streams; provision for scientific investigation of irrigation projects; uniform irrgation laws; the preservation of the forests; opportunities for building new homes; elimination by law of fraud in connection with the location and sale of land; close co-operation of government and state immigration officials and co-operation among state engineers.

The horse plague which has caused the loss of thousands of horses in Kansas and Nebraska during the past few weeks and puzzled the veterinarians and scientists, is spreading eastward. The disease appeared in Northwestern Missouri early in September, and is now reported from other parts of the state.

1913 MODEL AUTO SEAT Electric Lighted

Two powerful electric lights on seat operated by 5 dry cells neatly encased under seat. Twin reaches, full wrought gear, nickel-plated axle nuts.



How to Judge a Buggy

There are some amazing facts about the buggy situation that *you* have *a right to know.* We can *afford* to tell them — and we're going to do it *right now.* During the past few years the market has been flooded with inferior buggies at prices which *seem* low — but which are really *outrageously exorbitant.* You want *quality*—of course. And there *is* a way of getting the absolute *maximum* of quality *and at the lowest price you can afford to pay.*

The Real Truth About the "Cut-Price" Buggy

The manufacturer of the "cut-price" buggy doesn't worry much about *quality.* Instead he is content to put out a line that will *look* like the well known product of some *high grade* manufacturer. He copies the design and the lines just as closely as he can, relying on the fact that the average buyer will be deceived by the appearance into thinking that he is getting quality too.

Of course, he knows that he can never sell the same man a second time, *so he deliberately cuts the quality all he can so as to make sure of an enormous profit.*

The "Skimped" Way

A certain cut-price concern is already offering a buggy similar in appearance to the magnificent STAVER model shown above, at an *apparently* low price. We bought one of these buggies and analyzed it;—here are just a *few* of the ways in which it had been *skimped* — there are nearly a hundred more that we haven't room for.

Top

Fabric top — unlined — imitation rubber front and back valance. Roof stitched to quarter without welt, actual saving in factory cost..... $5.79

Seat

Gum-wood panels, kiln dried or green, no inside finish. Six coats of exterior finish, the last being a *glaze* varnish containing 30% rosin. This process gives a deceiving high gloss but has no "give" whatever. The slightest strain to the seat will cause it to check, flake and peel. Actual saving in factory cost..... $3.95

Body

Body of ordinary gum wood with inferior Ash, or in many cases Elm sills and posts.

Painted by the "glaze" system as explained in description of seat. Actual saving in factory cost..... $3.15

Dash

Frame of malleable iron, bolted, not coated with lead and oil or anything else. Covered with a cheap enamel split leather. Frame boot of cheap Gum Wood. Actual saving in factory cost..... $1.25

Gear

Malleable hangers; water-tempered springs; malleable fifth wheels; Elm reaches; maple axle beds; cull "D" grade wheels; malleable stay braces, wheel braces and fifth wheel forks. Actual saving in factory cost..... $9.42

Shaft

Made of Elm, with 20 in. point leathers; malleable reinforcements, no circle cross brace; flat leather cull straps; "glaze" painting. Actual saving in factory cost..... $2.40

The total saving on factory cost on these few items alone is **$28.61**; *the value of the buggy is lessened fully 75%.*

The STAVER Way

For 33 years we have been building the very highest grade of buggies and carriages made in America. That 33 year old reputation is worth millions of dollars to us. We must maintain it on a quality basis. The man who buys a Staver knows that he is getting a buggy that is *made on honor all the way through.*

Top

Highest grade leather throughout, including front and back valances. Lined above bows with 8 oz. all wool lining. Reinforced curtains. All leather and fabric *cut by hand.*

Seat

The Staver seat is made of air-dried *Yellow Poplar:* 1 piece back and 1 piece side panels. The 6 lugs that hold the top extend down on inside of the seat 6 in. and each is fastened with two 1 in. screws and one 1⅛ in. bolt. 2 coats of pure white-lead and linseed oil are used *on the inside* before the upholstering is put in. The outside receives *fourteen coats* and 3 *hand-rubbings.*

Body

The Staver body is made of *air-dried, Yellow Poplar,* ⅝ in. thick through the center, tapering to ⅜ in. at either edge. Sills and posts are constructed from the best White Ash and painted with 14 coats besides 3 water rubs, giving the finest and most durable finish it is possible to produce.

Dash

Wrought iron frame, coated with a heavy coat of lead and oil before being covered with grain buffed leather. The boot has a wrought iron frame welded out under the hammer and absolutely will not break or get out of shape.

Gear

The Staver gear has hand-forged Bailey Hangers; oil-tempered, graded spring (the easiest riding and most durable in the world); full wrought steel fifth wheel, black Hickory reaches; black Hickory axle beds, bent and turned from 2x2 in. stock; straight grain second growth Hickory wheels, spokes and felloes split before shaping. Wrought iron stay braces, heel plates and fifth wheel forks.

Shaft

Black Hickory, 21 in. bend; 36 in. point leathers; round jockey straps; half beveled steel reinforcements; circle cross bar brace; painted same as body.

STAVER

Write for Free Catalog

This is only the start of the story. We cannot urge you too strongly to get *all* the facts—to post yourself thoroughly on the real truth about buggies before you even think of buying. A postal will bring you the Staver Buggy Book and valuable, detailed information. Write today.

Staver Carriage Co., Dept. 4537, 76th and Wallace Sts., Chicago, Ill.

Ideal Fruit PickingBag

and so arranged as to equalize the load on both shoulders.

The openings are arranged so both hands can be used in picking and the draw string is arranged so the fruit can be let out at the bottom in emptying the bag.

The bag can be let down to the bottom of the barrel before opening the draw string, thus not bruising the fruit.

This is the best and handiest arrangement for picking fruit that has ever been offered. A trial will convince the most skeptical.

Sample Postpaid, $1. Agents Wanted

BARKER MFG. CO.

35 Ambrose Street. Rochester, N. Y

Nothing on Earth

is better for packing apples and other fruit than our

BARREL HEADER

It is instantly applied, and press can be quickly turned to any angle on bead of barrel.

PRICE $1.50

Special prices in quantities If you are a cooper, write for cooper's tool catalog.

JOE TIMMER
THE TINNER—and That Ain't Near All —"Hardwear" Most.
KANSAS CITY, KS. Western Hemisphere

The CLEANEST CUT—BRIGHT ATTRACTIVE—OUR

Western Soft Pine FRUIT BOXES

DON'T SPLIT, LIGHT, STRONG—Nail easy. Send on post card your name, address, kind and quantity wanted. Then we will send you sample of wood and prices, your station.

Washington Mill Company
SPOKANE, WASHINGTON

Apple Trees

A splendid lot of thrifty trees, either budded or grafted. These are grown on my own land, under my own supervision, and are the best trees you can procure. These trees are clean, straight, and have magnificent root systems.

Buy Direct From Me

You get your trees at a lower cost than when dealing through agents. There will be a heavier demand for trees this season than ever before. Write to me today, and tell me how many trees you will want. Don't delay until late in the season, when prices go up and quality goes down. Try some good 2-year-olds and save a year's time. Send me your order now.

ALBERT MATHIS
Payette Idaho

For Sale—BOOK

HOW FORTUNES ARE MADE GROWING

"The Big Red Apples"

in Benton County. How men with small means have become rich in the fruit business here. A field of happiness and a home of comfort. Also a map of the state, giving the various products raised in different parts of the state. A lesson to the fruit grower that cannot be obtained elsewhere. A limited number of these books will be sold for 20c, stamps or coin. Address

The BENTON COUNTY IMMIGRATION SOCIETY
BENTONVILLE, ARKANSAS

Hardwood Ashes

BEST Fertilizer in use if you play the ponies. Write me and learn how to beat the races. GEORGE STEVENS, PETERBOROUGH, Ontario, CANADA

Michigan's Apple Show

The Second Annual Apple Show to Be Held in Grand Rapids Nob. 12-16

Michigan will hold its second annual apple show in Grand Rapids, Nov. 12 to 16 inclusive, and the promise which was made last season, when the first show proved so great a success, that the second event of this character would prove how greatly the interest in fruit culture has grown throughout the Peninsula State, is being borne out by the assurance of the greatest display of the fruit products of the state ever brought together.

The state of Michigan has long enjoyed a reputation for the production of fine fruits of various kinds, but the possibilities of the state in this direction have never been comprehended by even the people of Michigan. Fruit has grown naturally, and the earliest settlers, who were largely from the New England states and from New York, planted orchards as a matter of course. They planted the greatest variety of trees, with no thought of the commercial possibilities of the future, and as a result, while Michigan has long been noted as the country where almost any variety of fruit could be successfully grown, in apples especially there has been very little effort made to commercialize the production.

Within the past three years, however, a great change has been taking place. The attention of the outside world was first attracted to the Michigan apple country by the display which was made by the Western Michigan Development Bureau at the first Land and Irrigation Congress, held at the Coliseum in Chicago in 1909. At that great show, where the apple districts of the West had a wonderful exibit of the product of a few years' of scientific culture on display, the hastily-gathered and illy-packed display of a small section of the fruit-producing section of Michigan attracted wide attention, and brought a flood of inquiries to the bureau from people who were vitally interested in fruit growing. Hundreds of people visited this show who had invested in apple orchards in the far west, and who came to the Michigan display and eagerly sought information of this country which lay at their doors, and had remained unnoticed for so long.

The reason for this is not hard to explain. Michigan has produced a great mass of fruit of all kinds, but her producers were of the old school, untrained in the scientific methods which have brought other fruit growing sections into prominence so rapidly. The methods of growing in Michigan were such as have been practiced by the fathers and grandfathers for as long as civilization has obtained in this state, and as nature was so kind as to provide the too bountiful crops without extraordinary care and attention, the settlers asked why it was necessary to spend time and money on a crop which would grow anyhow, regardless of expense. And in packing and marketing the fruit the grower's methods were still worse, if possible. Box packing was a thing unknown, and the common practice was to barrel the apples, with very little regard to the kind and quality that went into the middle of the barrel. The result has been that while Michigan gained the reputation of producing more apples than any state in the Union, she also gained the reputation of marketing a mass of undesirable fruit of all sizes, varieties and qualities in one barrel, and fruit growing was voted a failure by all except a very few who took pains to be honest and to give the market what it wanted.

But the first land show in Chicago, and the display put up there by the pioneer development bureau, opened the eyes of some of the growers of Michigan to what lay within their grasp; they awakened to the fact that by adopting the scientific methods of the west, Michigan might hope to take a place in the front rank of the great apple producing states. The second show given by the Land and Irrigation Congress in Chicago saw Michigan again present with a greater display than ever. It was a continuation of the claim that Michigan could, if she would, and it brought still another flood of interested inquiries from the outside world. During this time, however, the home educational work which was so necessary to the future success of the industry, was not progressing satisfactorily. The Michigan Agricultural College, although a school of high reputation in the agricultural world, has not given the attention to horticulture which the resources of the state warranted. For the whole state there is but one orchard demonstrator provided, and his work is of necessity much scattered and of little avail. The college has taken no advanced steps toward providing the assistance required to even know the full extent of the resources of the fruit producing sections of the state, and it has been left to the individuals, or to organizations which have sprung up to do this work themselves. The Western Michigan Development Bureau has employed an orchard demonstrator at an expense of about $600 through the season, his work continuing only during the producing season, whereas he should have been employed throughout the year. This demonstrator has made trips through each of twenty counties on the west side of the state, and has conducted scores of orchard demonstrations, doing a great deal of good and increasing the respect of the farmers for modern methods of culture.

This necessity for home education prompted the progressive men who had organized the bureau to propose a home apple show as a means of bringing the truth home to the people, many of whom had never thought of their own country as a potential source of wealth. The first Land and Apple show was given in the Coliseum in Grand Rapids last November, and while there was but a portion of the state represented, and no prizes were offered for displays of fruit, it proved so great a success that it was then determined to continue the show as an annual fixture. This year individual prizes aggregating over $1,500 are being offered to growers for displays of fruit. Not merely a few counties, but the whole state is invited to compete, and the promise at this time is that the November show will bring out a display of apples which will demonstrate how great has been the advance in interest in this one branch of fruit growing in the past three years.

This is the time to lay tile drains that will remove the water from the berry fields and orchards. Fruit will not do well on land that is too wet. Put small dams across the gullies and catch the silt that comes down with the flood waters of the winter rains. The gullies can be easily filled in that way.

The telephone has come to be as much of a necessity on the farm as in the city, and farmers every place are coming to use the telephone more and more and to regard it as a necessity in the transaction of their everyday business and social affairs.

Grapes can be kept for several weeks by gathering carefully after fully ripe. Then wrap each bunch in clean paper, twisting carefully around the stem. Pack away in a tight box and keep in a cool, dry place.

SPECIAL SPRAYER PRICES

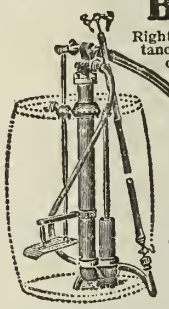
to those who buy or exchange for new model

NOW

"Friend" Mfg. Co.
GASPORT, N. Y.

In writing please mention The Fruit-Grower and Farmer.

Spray for More and Better Fruit



Right spraying is of the biggest importance to every fruit grower—his profits depend on it. In our endeavor to get the best sprayer for use on our 300-acre fruit farm we tried nearly every make on the market—then out of our experience we invented the

ECLIPSE Spray Pump

It is the only one that meets every requirement of the fruit grower. It has proved by actual test to be the best. It has made money for us by making our trees produce their best. Let us prove its worth to you. Write today for free illustrated catalogue.

MORRILL & MORLEY MFG. CO., Box 7, BENTON HARBOR, MICH.

Spray Trees Now

WHILE YOU'VE TIME TO DO A THOROUGH JOB. DON'T PUT OFF TILL BUSY SPRING. USE

Target Brand Scale Destroyer

A miscible oil that destroys San Jose and all other scales, also kills larvae and eggs of the leaf roller. It spreads on contact with the tree, thus covering every part, even those missed by the direct spray. Endorsed by every experiment station where tested. **Agents Wanted. Write for Circular.**

HORTICULTURAL CHEMICAL COMPANY
135 South Fourth St. Philadelphia.

In writing please mention The Fruit-Grower and Farmer.

Plant Peonies Now

Pick out the spots where you would like to see them blooming and plant Wild Bros.' Peonies now. They are full of real life and vigor and will reward you next spring with their beautiful, fragrant flowers. Write now for descriptive Peony list.

WILD BROS. NURSERY CO.,
Box 501. Sarcoxie,, Mo.

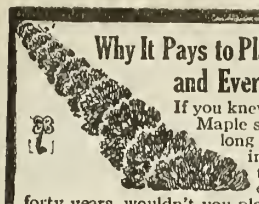
Strawberry PLANTS

Your attention, just one moment. Strawberry plants by the dozen or the million. No order too large or small to receive our careful attention. Ask for a copy of our two-color catalog. We solicit your patronage and guarantee every order to please you Plants are now ready for fall shipments.

O. C. WALLER Box 8, JUOSONIA, ARK.

LEARN Printing Trade at Home. No tuition charged until you earn $3.00 or over a day. Printers' Correspondence School, Springfield, Mo.

SAY! I am in the Berry Plant Trade for Lifetime business. My next spring's list will contain all best old and new varieties. B.F.Smith, Lawrence, Ks.



Why It Pays to Plant Shade Trees and Evergreens

If you knew a row of Norway Maple shade trees a mile long would bring you in over thirty-eight thousand dollars during the next forty years, wouldn't you plant them?

These figures sound utterly impossible. But the sum named is actually the average value of a hundred and thirteen such plantings. If you haven't a mile of space, the returns from smaller plantings will be proportionate.

Learn how these trees became so valuable and how you can grow trees that will pay as well. The story is told in our new booklet.

"The Why and How of Shade Trees and Evergreens"

If you own land and are thinking of planting trees, we shall be glad to send you a copy free if you ask before they are all taken.

How to Grow and Market Fruit

our guidebook costs you only 50 cents, prepaid; rebated on your first $5 tree order.

Get our complete catalog of the best fruit trees grown in America, at right prices. Sent free on request.

Come to Berlin and see for yourself how we grow trees.

Eastern Shore Farms for sale —write for particulars.

HARRISON'S NURSERIES
Atlantic Avenue
BERLIN, MARYLAND

Spray with **SAN-U-ZAY** Scale OIL

In every fruit section there are hundreds of growers now using SAN-U-ZAY in preference to all other dormant tree sprays—because:

It controls the Scale perfectly with only one yearly application, and all trees become more vigorous and fruitful with its continued use.

It has about double the covering power of Lime-Sulphur, which means much less material, labor and expense for the work.

It sprays against the wind without discomfort, does not clog nozzles nor corrode equipment, blends easily with water and never separates.

GET THE FACTS

regarding the excellent results obtained by spraying with "SAN-U-ZAY" by sending a postal to-day to Dept. B for our new free book "Better Spraying" which also contains other information of vital importance to you. Learn also about our "Misty-Make" Sprayers.

The Gardiner-Johns Company
210 Livingston Bldg., Rochester, N. Y.

TREES and PLANTS All kinds— by the Millions — at wholesale prices. Big supply Apple and Peach Trees. Privet Hedging. **The Westminster Nursery, Westminster, Md.**

Lenses Free

Now see here, friend! What's the use of your tearing and scratching your eyes out, reading this fine print with those old, dim and misty spectacles of yours, when you can just as well write and get a brand new pair of my wonderful "Perfect Vision" lenses absolutely free of charge.

You see, I have absolute confidence that just one try-out on your part will make you a permanent booster for my famous "Perfect Vision" spectacles, and I am therefore going to send every reader of this paper a pair of my latest improved lenses absolutely free of charge as an advertisement.

AND THE REASON IS

—Because these "Perfect Vision" lenses of mine will enable you to read the very finest print in your bible, thread the smallest-eyed needle you can get hold of, shoot the smallest bird off the tallest tree-top, and distinguish a horse from a cow on the cloudiest days and as far as the eye can reach.—

Now you certainly do want a pair of these wonderful "Perfect Vision" lenses of mine, and I surely want to give you a pair absolutely free—without ever asking you to pay me one penny for them, now and never.

So just write me your name and address on the below coupon and send it to me at once—and I will immediately mail you my Perfect Home Eye Tester and a four-dollar cash certificate entitling you, absolutely free of charge, to a brand new pair of my wonderful "Perfect Vision" lenses, which will again enable you to enjoy your reading, sewing and hunting just as much as you ever did in your younger days.

Write Name and Address Below
DR. HAUX, The Spectacle Man, ST. LOUIS, MO.
Please send me full particulars of your free offer at once.
Name.....
Postoffice.....
R. R.....Box.....State.....

Note:—The above house is perfectly reliable.

Fruit and Truck Growing in Delaware

(Continued from page 8.)

teloupes were planted in a young peach orchard; these crops, in addition to a good apple crop, distribute the work throughout the season, and also bring in money at regular intervals.

Mr. Dickson's potatoes, by the way, had been sprayed with a new preparation which is being generally used throughout some of the potato-growing sections of the East. It is a combination of arsenite of zinc and atomic sulphur—the former to control leaf-eating insects and the atomic sulphur to prevent blight. This mixture is somewhat cheaper than arsenate of lead and atomic sulphur and has given remarkably good results; Mr. Dickson's field was a splendid testimonial to the value of this new preparation. Mr. Dickson was testing the mixture as a spray for apple trees, and it seems to be all right; he thought the foliage might be burned by the arsenate of zinc, but no trace of injury was found. It may be said just here that at Morrisania we are testing arsenate of zinc as a spray for apple trees, and have not noted any injurious effects. It is considerably cheaper than arsenate of lead, if it will do the work.

At the farm of Mr. S. H. Derby we found that the apple crop is so far along that Mr. Derby he started making apple barrels; he expects a good crop and is getting ready to take care of it. Mr. Derby has one of the oldest orchards in the neighborhood, and is increasing his planting. He believes that Winesap apples grown in Delaware have a great future, and also that early summer varieties will pay well.

Mr. F. C. Bancroft has adopted dairying and fruit-growing as a combination, and it works well. He has a fine herd of Jerseys and makes butter for a fancy trade in Philadelphia. It has been found that this combination helps to solve the labor problem, for there is work for a good force of men the year round. Corn and soy beans are used for ensilage, and a small acreage will fill the silos. Twenty cows furnish an abundance of manure, and the fertility of the soil is easily maintained.

Mr. Bancroft has a good peach orchard, and last year, from 169 trees, marketed $1,800 worth of fruit. From seventy-nine Williams Red apple trees he sold $1,000 worth of fruit, all being sold at shipping station. Mr. Bancroft uses atomic sulphur as a fungicide and arsenate of lead as an insecticide, and his trees are remarkably clean and healthy. Foliage is thick and leathery, and most varieties of apples have set a good crop of fruit.

Diversified Farming.

It would be hard to find a class of farmers more ideally situated to practice diversified farming than the fruit-growers of the Delaware-Maryland peninsula. Everything they grow can be readily marketed, and one can select his crops with a view to having them fit in with whatever kinds of fruits he wishes to grow. Tomatoes for the canner bring $9 per ton and produce wonderful yields. Crops grown for Northern markets find ready sale at shipping station, and fruits of all kinds do well, so that there can be a constant succession from early until late.

Crimson clover is the great crop for soil-building. Nearly everyone grows it in one way or another. Alfalfa is also being tried and seems most promising. We saw several fields of it which have a good stand and which are producing heavy yields; it is necessary to use lots of lime on soil to get it started. One common way to use crimson clover is to plant it in a corn field at last cultivation. When the corn is cut off in autumn the clover comes along, grows during warm spells during the winter, and early next spring makes a fine crop of hay. Then the stubble can be plowed and corn planted again—for corn can be planted very late in this section, which has a very long growing season.

Mr. Dickson told us of the experience of a man who came down into Delaware a number of years ago and bought a farm, the soil of which was supposed to be exhausted. It had been planted to one crop until it had ceased to produce profitable returns. At the time the new owner took charge it produced twelve bushels of corn per acre. The land was planted to corn, and crimson clover planted at last cultivation; then next spring the hay crop was removed, the ground plowed and planted to corn again. This has been continued for fifteen years without any other crop having been grown during that time—nothing but corn and crimson clover, over and over again. The corn crop has continually improved until last year the yield was eighty bushels per acre. The owner has added a number of other farms to his holdings, and by judicious growing of clover and other leguminous crops has built up his land until it produces heavy yields of everything.

The history of orcharding in the Delaware peninsula is similar to that of other districts: Orchards ceased to be profitable a few years ago, when it seemed as though insects and diseases would make it impossible to grow high-grade fruits. Many persons went out of the business, but a few stuck to it and adapted themselves to the new conditions. Other persons came in from other sections, particularly from Northern states, and they have taken care of their orchards. The experiment station officials have worked early and late to help improve methods of fruit culture, and now the fruit industry is on a sound basis again. While one could not borrow money a few years ago with an orchard as security, this form of security is now recognized as of the very best kind—but the men in charge of the orchard must appreciate that he must fight his enemies, and he must keep at this work every year.

The growers we met on our trip, and those we have met at other times in this section, are of the very highest type; they are open-minded and anxious to keep abreast with the times, and, it may be said that the fruits which are produced show that most of them are doing it. J. M. I.

Farmers Pin Faith to College of Agriculture.

Everywhere farmers are expressing their faith in farming by training their sons to be up-to-date farmers. Everywhere farmers are turning to the College of Agriculture as their best friend and helper in educating their sons. This is true in Missouri. It is true in other states. In Ohio, Secretary A. P. Sandles of the Ohio State Board of Agriculture recently asked this question: "Do you advise young men to take a two or four year course in an agricultural college?" His question was sent to 1,747 Ohio farmers. Of this number 1,692 said "Yes," and 55 said "No." One to thirty in favor of giving the farm boy as good training for his work as is given to the doctor, lawyer or preacher!

Don't Sow Wheat Too Early.

Be careful about planting winter wheat too early this fall. Every year there is a large acreage of wheat planted long before the danger from the Hessian fly has passed, and as a result, much of it is injured. In Southern Iowa, don't sow wheat much before September 25, and in Missouri and Kansas, not much before October 1 in the northern part, and ten days later in southern parts.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunchee from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

ABSORBINE

will reduce inflamed, swollen Joints, Bruises, Soft Bunches. Cure Boils, Poll Evil, Quitor, Fistula or any unhealthy sore quickly; pleasant to use; does not blister under bandage or remove the hair, and you can work the horse. $2 per bottle, delivered. Book 7 E free.

ABSORBINE JR., liniment for mankind. Reduces Painful, Swollen Veins, Goitre, Wens, Strains, Bruises, stops Pain and Inflammation. Price $1.00 per bottle at dealers or delivered. Will tell you more if you write. Manufactured only by

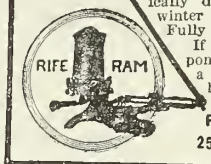
W. F. YOUNG, P.D.F., 34 Temple St., Springfield, Mass.

Raise Water for Your Fruit

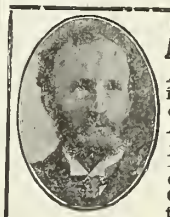
—all you need when and where required — with an automatic Rife Ram. Costs little to install —nothing to operate. Raises water 30 feet for every foot of fall. Land lying above canal or stream supplied with water. Pumps automatically day and night, winter and summer. Fully guaranteed.

If there is a stream, pond or spring within a mile, write for plans, book and trial offer, FREE.

RIFE RAMS Pump Water Automatically Day and Night



RIFE ENGINE CO.
2521 Trinity Bldg., New York



Dr. Brooks

AGRICULTURE

A course of forty lessons in Soils, Tillage, Fertilizers, Farm Crops and Animal Husbandry under DR. WILLIAM P. BROOKS of the Massachusetts Agricultural College. Courses in Horticulture, Floriculture, Landscape Gardening, Forestry, Poultry Culture, Farm Accounting, etc., under able professors in leading colleges. We have made a specialty of the teaching of Agriculture and related branches by correspondence for many years.

250-page catalogue free. Write today.

The Home Correspondence School
Dept. 59, Springfield, Mass.

NATURAL Fine-Ground **PHOSPHATE**

In Rotating Your Crops don't fail to apply Natural Fine-Ground Phosphate when breaking your clover, grass or grain stubble sods. This is the best time to apply it to the soil direct. Address,

The right amount applied just then, at not over $1.00 per acre cost per crop, will increase each crop grown during the rotation from 50 to 75%. Write for free Booklet, telling all about it.

THE FARMERS GROUND ROCK PHOSPHATE CO. MT. PLEASANT, TENNESSEE

BLACK LOCUST, CATALPA

Speciosa, Box Elder, Sycamore, Ash, Elm, Red Bud, Sweet Gum, Mulberry, Walnuts, Maples, Poplars, California Privet, Deutzia, Spirea. Trees, Shrubs, Seeds, etc., at lowest prices.

Send for wholesale list.

FOREST NURSERY COMPANY
McMinnville Tennessee

ORENCO TREES
ONE YEAR TOPS ON THREE YEAR ROOTS

Human Effort; Human Care; A High Ideal

coupled with Oregon's fertile soil and unexcelled climatic conditions—combine in making

ORENCO TREES

unexcelled in hardiness, growth, root-system, reliability, early productiveness and altogether the most economical trees for you to plant. Don't take somebody else's theory to the contrary—let us give you sound, reasonable, acceptable evidence. Wish you could see our one and two-year-old apples in such varieties as

Jonathan	Rome Beauty
Gano	McIntosh Reds
Wealthy	Winesap
Gravenstein	Winter Banana
Etc.	Etc.

We'd like you to investigate Orenco Trees. May we send you our freely illustrated booklet, "About Orenco"? Don't speculate any more in fruit trees, but Invest in Orenco's Standard Trees. For information address "Sales Dept."

OREGON NURSERY COMPANY
The 1200 Acre Nursery
ORENCO
OREGON

In writing please mention The Fruit-Grower and Farmer.

THE GLIDE
DIGS A DITCH LEVELS THE LAND

A 2 HORSE 1 MAN MACHINE

FOR LEVELING DITCHING IRRIGATION LATERALS AND ROAD WORK

Here is just the machine you need. It will dig your ditches, laterals and perform every phase of work required for preparing irrigated land. Will dig a V-shaped ditch 2 to 3 feet deep. For road work it has no equal. Does the work at the lowest possible cost.

Made in 2 Sizes

No. 1 weight 650 lbs.
No. 3 weight 1150 lbs.

Write us today for Catalogue and special free trial offer.

Glide Road Machine Co.
508 Huron St.
Minneapolis, Minn.

RIGHT NOW
is the Time to Send for Our Price List on
FRUIT TREES
Varieties True—No Disease—We Pay the Freight
For Price List Address
NEW HAVEN NURSERIES
Box 125 New Haven, Mo.

WANTED, men to become independent farmers in Central Arkansas; finest fruit and berry country; the nation's garden spot; large profits on small capital; booklet free. CLOPTON HOPKINS, Kensett, Ark.

Apple Barrels for sale. Will contract ahead to be shipped in Sept. and Oct. John Moehn, Des Moines, Iowa.

Berry Growing in Oregon

Tremendous Crops of Many Kinds.

Western Oregon is an excellent berry growing region. All kinds of berries do well, producing abundantly and have but few enemies. On land that has been clovered, following an old planting of strawberries, the crown borer in troublesome. On newly cleared land, where these insects have not started, strawberries pay from $150 to $300 an acre. The two old favorite varieties, Clark's and Wilson are still popular. Clark's is an early variety, and Wilson is for the housewife to can. The canneries prefer the Clark's. The Marshall and the Magoon are used as main crop berries, and as they are large and sweet, they sell best on the open market, but are accepted at the canners' at a fraction of a cent less per pound than the Clark's.

If the strawberry field is well cultivated after the berries are harvested, that is through July and August, keeping the weeds out and maintaining a dust mulch, the crop the spring following will be good to very good. But if weeds are allowed to grow and the ground to harden, then the crop will be light and no amount of spring work can make it as heavy as if the land had been well tilled the summer preceeding.

Gooseberries grow and do well almost anywhere. Cultivation, pruning and spraying add to the size of the fruit, but they grow where neglected and even in the dryest part of eastern Oregon.

The Champion, as it is called here, or Oregon Champion, as it is catalogued by Eastern nurseries, is the sort that has displaced all other varieties. It is large, practically free from mildew, transparent when ripe, bears abundantly, and is far less thorny than other sorts. Large acreages of gooseberries have been set out in recent years, but as the canneries take all of them, no surplus has yet been produced.

Currants grow remarkably well and the demand has never been fully supplied. Fay's Prolific and the Cherry currants have long been the standard varieties, but the introduction of the Perfection bids fair to drive them out, as it is a larger berry and a heavier producer. Like gooseberries, currants grow bushy and do not need wiring up.

Red and black raspberries and blackberries are trained between two wires made fast to posts. Loganberries are trained to three wires, one above the other. Only two varieties of red raspberries art grown for market in this region: For early market, the Marlboro, and for main crop, the Cuthbert. Coming early and being a large fruited sort, the Marlboro is a paying variety, but the Cuthbert is the favorite because of the superior flavor. It is a much thriftier grower and heavier cropper than the Marlboro. Red raspberries are sure croppers, free from diseases and pests, and the roots live a long time. I know one patch that has been set twenty-five years and grows as large canes and bears as big crops as it ever did The demand is usually sufficient to fix a good price for them, and they always sell.

Black raspberries are sure croppers, and if the market for them as fresh fruit does not take them up at a good price, they can be easily dried in the sunshine.

At Springbrook they are grown in fields of twenty acres and the fruit is all dried for market, where they bring twenty-two and one-half cents a pound, or $450 a ton. Near the city of Portland these berries are grown for the fresh fruit market only. This year they sold on the open market at $1.75 and $2 per crate of twenty-four one-pound boxes.

Loganberries and Phenomenal berry are so nearly identical that the fruit is never distinguished on the market, but all go as Loganberries. The growth of the plants is so much alike that only an expert can distinguish them, and that only by a slight difference in the color of the half-grown leaves. The Loganberry is a rampant grower and prolific yielder. It stays green all winter and, if wired up, will sometimes die where the wires touch the vines in the event of freezing temperatures. This fact necessitates training them up to the wires in the spring when the danger of freezing weather is past. They produce large, handsome berries and continue to bear all summer. They are not good shippers, so the acreage is not so great as of red raspberries or blackberries. They are, however, very profitable.

The Mammoth blackberry is something like the Logan in growth, but has proved to be worthless as a commercial berry. Blackberries do exceptionally well. The bushes grow large and healthy and fruit heavily. But two varieties are grown for market purposes, the Kittatiny and the Lawton. All other sorts have been discarded. The Kittatiny is a little larger than the Lawton, and is very large and sweet. On moderately poor ground, or poorly cultivated, it grows a moderate bush and fruits heavily. On rich land or where cultivated the same as the Lawton, it produces too much bush. The Lawton grows plenty of wood and bears long crops. It is still in bloom when ripening the early part of its crop, and continues to ripen berries until the cool weather of fall cures up the wood. The berries are very large, rich and very sweet when dead ripe.

The secret of successful berry growing in Western Oregon is in thorough cultivation. All bush berries should be set in rows seven feet apart. In the spring the rows should be plowed away from and all weeds and dirt cleaned away from the stools. The soil should be plowed back towards the rows and the cultivator run through after spring showers, until the weeds quit growing, thus forming the moisture retaining dust mulch. If picking begins on a dust mulch, and there is no more rain, no more cultivation will be needed, but if it rains, then the tramping of the pickers will pack the ground and more cultivation will be necessary. Worked in this manner, berries return good interest on high priced land where nothing else would pay.

W. H. ADDIS,
Montavilla, Ore.

For a Bureau of Farm Power.

A bill to establish a bureau of farm power in the United States Department of Agriculture was introduced into Congress at the last session, but not passed. The bill was introduced by Henry T. Rainey, of Illinois, who will re-introduce the bill next winter. The proposition is a good one. One of the important things before the American farmers today is the best use of power in moving farm machines. There has been a great extension of the use of machinery on the farms of the country in the last few years, and there will be even a greater extension in the future. There should be a bureau established to study the problems that must be faced in the use of more machinery in agriculture.

If ever a book was worth a two-cent stamp, it is the Year Book of the United States Department of Agriculture. You can get a copy of it free by writing to your congressman or your United States Senator.

FITZ Overalls

Auto equipment is incomplete without a suit of Fitz Overalls. These garments are large—easily slipped on over your clothes. A sure protection from grease and dirt in case of emergency, or for shop work.
Free Fitz Book on request.
Burnham-Munger-Root
DRY GOODS CO.
KANSAS CITY, MO.

Protect Your Trees

DON'T take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using

Hawkeye Tree Protectors

Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—¾ cent apiece. Special sizes made to order. Write for circular and samples.

We make Fruit Baskets—get our prices.

Burlington Basket Company
118 Main St., Burlington, Iowa

In writing please mention The Fruit-Grower and Farmer.

DAYBREAK PHOSPHATE
GROUND 95% THROUGH 100 MESH
GROUND PHOSPHATE ROCK.

Is the Brown Tennessee Rock Phosphate pulverized to a fineness that 95% passes a 100 mesh screen, 80% passing a 200 mesh screen, and is absolutely guaranteed to contain a minimum of 13% Phosphorus (29¾% Phosphoric Acid).

Is endorsed by the leading experiment stations as the best and most economical carrier of Phosphorus. It appeals only to the intelligent farmer who utilizes Nature's abundant source of Nitrogen by growing legumes and who keeps his soil alive with humus. Write for literature and prices.

FEDERAL CHEMICAL CO.
Ground Rock Dept. COLUMBIA, TENN.

In writing please mention The Fruit-Grower and Farmer.

Harvey Bolster Springs

prevent damage to eggs, garden truck, fruits, live stock on road to market. Make any wagon a spring wagon. Soon save cost—produce brings bigger prices—wagon lasts longer—horses benefited—thousands in use—"my wagon rides like auto" says one. Get a pair at dealers. If not at dealer's write us. Insist on Harvey's. 40 sizes—fit any wagon—sustain any load to 10,000 lbs. Catalog and fistful of proofs free.
HARVEY SPRING CO., 7361 7th St., Racine, Wis.

We Ship on Approval

Prepay Freight, and allow
30 Days Free Trial
IT ONLY COSTS ONE CENT to learn our unheard of prices and marvelous guarantee on "Brictson" Detachable Treads.

Let us show you how to save from 300% to 400% on your tire expenses. Write to-day for full particulars.

The Brictson Mfg. Co.
38102 Main St.
BROOKINGS, S. D.

Do You Get Your Paper Promptly?

During the past few years, the publishers of The Fruit-Grower and Farmer have made several changes in the system of mailing papers to subscribers. This has been done in an effort to get the paper in the mails more promptly and insure careful delivery of every copy.

During the past year, our list has been entirely revised and routed in every state for the various railway lines, under the supervision of an expert in the postal service. This change will have a tendency to place each edition of The Fruit-Grower and Farmer more promptly in the hands of readers, but at the same time, the handling of the list in this manner may cause errors, which cannot be remedied until the matter is brought to our direct attention by subscribers.

In case your paper is not properly addressed, or you are not receiving your copies of The Fruit-Grower and Farmer regularly every month, or if you have missed any numbers, we hope you will write us at once, so that the error may be corrected.

This October number is the first edition printed on our new fast rotary press, and this new improvement will enable us to get our entire editions in the mails more rapidly than ever before.

This, however, will cause another slight change in our mailing department, and it is possible that errors will occur. So do not fail to write us promptly if you have any complaint of any nature to make. We guarantee a square deal to every reader.

THE PUBLISHERS.

Challenge to Match Apples.

The Virginia State Horticultural Society offers $50 for the best five boxes of any varieties of listed apples (one box of a variety), open to competition to growers in any state, including Virginia, and Canada.

All apple growers in North America are cordially invited to enter for this competition in which Virginia challenges anyone to beat her. Notify Walter Whately, secretary. Virginia State Horticultural Society, Crozet, Va., of entries, which must be received not later than December 20th.

The competition will be held at the fruit exhibit in connection with the annual meeting of the Horticultural Society at Lynchburg, Va., January 8-10, 1913. This is a real "sporting" offer, and so far as known has never been made by the apple growers of any other state. While this challenge has been made by the Virginians for the past three years, so far no one outside the state has taken it up.

Virginia. WALTER WHATELY.

Breed Selection of Poultry.

Every beginner in the poultry business is confronted with the problem of proper breed selection. He seeks advice and with it becomes more and more confused and in the end is compelled to reason it all out for himself. All depends upon what is required from the business as to what breed will most profitably fill the requirements.

If meat is desired and the profits of the business is to depend entirely upon the ability to produce meat, some of the large meat breeds will surely be the proper selection. For a breed that will produce a goodly number of eggs and at the same time a profitable meat bird, select any of the American breeds. There is much difference of opinion as to which of these are the best. Any of these are good and the difference of opinion must certainly be the result of fancy. There is a greater difference in individuality than in breeds. Select the breed that suits the fancy.

If breeding for eggs alone, the Single-Comb White Leghorn is certainly the best breed. The Single-Comb White Leghorn is recognized as the egg machine. It is quite reasonable that this is true for they have been bred for years strictly along one line, that of egg production. All of the great egg farms of the country are stocked with White Leghorns, the single-comb variety. There is no doubt but they will produce more eggs for the amount of food consumed than any other breed. They lay a large uniform egg with white shells. The even color of the White Leghorn eggs is a very desirable quality as many markets demand white shelled eggs.

For the farmer who keeps only a small flock for meat and eggs as well, he will quite likely select one of the American breeds, but the money in the poultry business when run strictly on a commercial basis comes from the eggs and the greatest number of market eggs from a given amount of feed is certainly the breed to select.

PRENN MOORE.

FOLKS: I want every last one of you to read this letter carefully and thoroughly

DEAR FRIENDS:

I have a matter of great importance I want to take up with you. I know we are, all of us, keenly interested in the improvement and advancement of our own welfare—yours is in the fruit-growing and farming enterprise—and ours in the publishing of a fruit growers' and farmers' magazine.

In both these industries, as in all others, we need co-operation, harmony and system; in other words, we need organization in order to succeed, for these are the piers upon which all success has been built and, therefore, the foundation upon which all business must stand.

In years gone by co-operation and system were practiced but little. We did not know the value of them. We piloted our way along alone and unassisted, and progress was slow. We thought our way the only way, and if a new idea sprang up, the fellow who originated it was thought crazy.

But time passed—new ideas forced themselves into play. And today we are open to almost any idea that might be presented to us, and it is these new methods that are bringing success to many of us.

I do not know how you, personally, have progressed. I do not know whether or not you have exercised to the fullest extent all the new ideas that have come to you in one way or another. But I do know that if you have taken advantage of them that you are well on the way to success.

During my experience as Editor-in-Chief of The Fruit-Grower—hereafter to be known as The Fruit-Grower and Farmer—I have strived to give you the benefit of every new idea that has come to my attention—and these ideas were, in a great measure, those which had brought results to the men who put them into practice.

I believe The Fruit-Grower and Farmer has been a great source of support to you, and I hope you have used to advantage all the ideas it has advanced—for your own benefit, for it has published for your individual help articles which contained ideas of the greatest importance to you.

The Fruit-Grower and Farmer in the future, is going to be an even greater source of help to you than ever before. We are improving on it with every issue, and I promise you that every issue will be worth many hundreds of times what you pay for it.

But I believe that we are entitled to some consideration in the way of support ourselves—we are now serving 100,000 fruit growers and farmers with this magnificent publication—and it is our aim to increase our circulation to 200,000 by January 1st, 1914.

I know it to be a positive fact that there are dozens of families living near your home, who are not now subscribing for The Fruit-Grower and Farmer. Many of these folks are progressive, and would give a great deal to learn of a publication so valuable as The Fruit-Grower and Farmer. I am satisfied they would never get through thanking you for telling them of it.

It is a hard matter for us to get to see these people all at once. But we have hopes of doing so at some time. However, as you are right handy there, and among them, I am going to suggest that you either go and see them for me, or else send me a list of their names, so I can write each one of them.

WE WILL PAY YOU CASH

I want it understood, however, that I do not expect you to do this work for us without compensation, for we will be only too glad to pay you well for all subscriptions you send us, so do not be bashful about retaining your commission for all such orders as you send us.

This favor is not asking too much of you. I believe you owe it to us—for the more support we get from you, the better magazine we will be able to publish; therefore, the more valuable information you will derive.

I want you to give this matter immediate attention, and if you haven't time to attend to it, you should get one of the family to do so for you—so that you can get your list off in the mails as early as possible.

DON'T FORGET WE NEED YOUR RENEWAL

I don't know how you stand on our subscription books, however, if your subscription has expired, or will expire in the near future, send in your remittance at once, for it is the combined support of all our loyal friends which keeps The Fruit-Grower and Farmer grinding out the new information for you month in and month out.

With best wishes for your success and kindest personal regards, I remain,

Yours sincerely, JAMES M. IRVINE,
Editor-in-Chief.

The Fruit-Grower and Farmer, "The National Magazine."

NURSERY AND SEED CATALOGS

WE are very pleased to announce to our Nurserymen and Seedmen customers and friends that we have recently enlarged our printing plant and now have one of the largest and most modern equipments in the country for the production of High-Class Nursery and Seed Catalogs.

Our Quality and Service is Unsurpassed.

Our Prices are Consistent With Quality.

Our File of Stock Cuts is High-Class and Complete.

WE SHOULD BE YOUR PRINTERS MAY WE PROVE THIS?

If you are contemplating issuing a catalog or other printed matter let us hear from you and we will be pleased to make suggestions, give estimates, etc.

American Printing Company

ST. JOSEPH, MISSOURI

PUBLISHERS OF THE FRUIT-GROWER AND FARMER

$1 Worth for 25c

We have a few hundreds of the Brother Jonathan series of fruit booklets, of which we sold thousands a few years ago, and want to close them out quickly. These books originally sold at 25c each, and Fruit-Grower readers took thousand of them at that price.

We now Offer Four of These Books, postpaid, for 25 Cents

Select the numbers you want, and send your order today, for there are only a few of several numbers. Orders will be filled as they are received, and if any number you select cannot be furnished, we reserve the right to send another number instead. Here is the list of those we can furnish now:

No. 2—A Treatise on Spraying. Tells all about how to fight insects and diseases which attack apples and strawberries.

No. 3—Strawberries and How to Grow Them. A dandy little book telling how to grow this most valuable fruit.

No. 4—Gardening. A practical little booklet which discusses all phases of gardening, including making and management of hotbeds.

No. 5—Packing and Marketing of Fruits. This book takes up the problem of packing and marketing in a common-sense manner.

No. 6—Bush Fruits. A booklet which discusses the culture of raspberries, blackberries, gooseberries, etc.

No. 7—Grapes. This booklet discusses planting and care of vineyards, and illustrates the famous Munson system of training the vines. Only 75 copies of this number are available.

No. 8—Pruning Booklet. Discusses the whys and wherefores of pruning fruit trees and shrubbery. Only 50 copies available.

No. 12—The Corn Book. A little book containing valuable information on corn culture, including chapters on seed selection.

Order These Books at the Rate of Four for 25 Cents

Send us list of the numbers you want, and act quickly, so that you will be sure of getting the numbers you want. Here's a real bargain, for thousands of these booklets were sold at 25c each, and every purchaser received his money's worth. Send order today to

The Fruit-Grower and Farmer, Book Dept., St. Joseph, Mo.

Books That You Need

In the following list of books, we have selected the very best and most valuable books on agricultural subjects that it is possible to bring together. Each book is written by a world wide authority. Each book is full of good, sound, practical information on its particular subject.

No home is complete without a good library of agricultural books. Every successful man of today knows that it is better to profit by reading and learning the successful methods of others, than to find out by his own experience.

Order your books now. This list gives the lowest possible prices, and brings the books direct to you without further cost.

FRUIT GROWING

The Nursery Book, by L. H. Bailey, $1.50.—A complete guide to the multiplication of plants. A standard work for nurserymen. Revised and enlarged.

Bush Fruits, by F. W. Card, $1.50.—The purpose of this book is to furnish reliable descriptions of cultivated varieties and the necessary instructions on the cultivation of brush fruits.

American Fruit Culturist, by Thomas, $2.50.—A standard work on fruit culture, leading varieties of cultivated fruit, together with principles of successful cultivation and marketing.

Fruit Harvesting, Storing and Marketing, by F. A. Waugh, $1.00.—A practical guide to the picking, storing, shipping and marketing of fruit, evaporating, canning, cold storage, fruit package laws, etc. Illustrated.

The Fruit-Growers' Guide-Book, by E. H. Favor, $1.00.—A guide to the cultivation of orchard fruits, giving methods of selecting location, soils, planting, varieties to use, packing, marketing, combatting diseases, etc.

Systematic Pomology, by F. A. Waugh, $1.00.—A volume presenting clearly and in detail the whole methods by which fruits are studied, giving a comprehensive treatment of the subject.

Popular Fruit Growing, by Samuel B. Green, $1.00.—A thoroughly practical book treating on the factors of successful fruit growing, orchard protection, insects injurious to fruit, fungous diseases and spraying.

GARDENING

The Principles of Vegetable Gardening, by L. H. Bailey, $1.50—Treats of equipment and capital, making hotbeds, cold frames, soil and its treatment; seeds; laying out and management of the garden. Discusses treatment of each kind of vegetable.

Vegetable Gardening, by Samuel B. Green, $1.00.—A manual on the growing of vegetables for home and the market. Well illustrated.

The Forcing Book, L. H. Bailey, $1.25.—The most complete treatise on the forcing of crops under glass during the winter. Discusses greenhouses, hot-beds, temperature, light requirements. A book for the winter gardener.

Bean Culture, by Glen C. Sevey, $0.50.—A complete treatise on growing beans on a commercial scale. Treats of soils; seed selection; insects and diseases; harvesting methods; marketing garden beans.

Tomato Culture, Will W. Tracy, $0.50.—Complete treatise on tomato growing. History of the tomato; soils for maximum crop; hot-beds and cold-frames; starting the plants; cultivating; staking; production for canning, etc.

Celery Culture, W. R. Beattie, $0.50.—A practical treatise of the principles involved in the production of celery for home use and for market, including the selection of soil, production of plants, cultivation, control of insects, marketing, etc.

Home Vegetable Gardening, by F. F. Rockwell, $1.00.—A book which tells what the average man wants to know in order to raise a successful crop of vegetables in his garden. A book that will answer every question and prove a reference of unfailing value.

Manual of Gardening, L. H. Bailey, $2.00.—A complete manual on planning and planting the flower, fruit and vegetable garden and decorating the home grounds.

The Landscape Garden Book, by Grace Tabor, $2.00.—This book shows just how to plan the home grounds; how to plant the trees so that they will give the most value in shade and beauty, how to group shrubs, etc. Beautifully illustrated.

Farming, Farm Buildings.—A recent compilation of plans for general farm barns, cattle and horse barns, sheep and swine pens, poultry houses, silos, etc., etc., all representing construction in actual use. This is not a book of proposed plans for farm buildings, but for the most part is a presentation of actual construction by practical men. Many different types are illustrated. Different farms, different latitudes and different methods of management demand an infinite variation in the style, dimensions and detail of American farm buildings. Sent postpaid to any address on receipt of $2.00.

Alfalfa, by Jos. E. Wing, who knows more than anyone else about this wonderful forage crop and soil builder. 480 pages on a subject of absorbing interest. Price $2.00, postpaid.

Meadows and Pastures, by Jos. E. Wing.—Descriptions and illustrations of all agricultural grasses. The best methods to follow in preparing the soil and seedbed for different species or mixtures. The economic value of grasses in supporting stock is strikingly revealed, and the relation of the principal species to a balanced, permanent agriculture emphasized. Over 400 pages. Beautifully printed. Bound in cloth. Price, $1.50 prepaid.

Manual of Agriculture, by Emerson.—This book aims to teach how to co-operate with the great powers of nature and control them for our own purposes, making most useful, as well as the most interesting study that can be presented to the inquiring mind. Price, $1.00 prepaid.

A B C of Agriculture, by Weld.—This book treats upon the fundamental principles of agriculture, farming as a business, the mechanical and chemical composition of soils, maintaining and increasing fertility, clearing and tilling land, weeds and their destruction, manures, feeding rations of animals, etc. Price, prepaid, $0.50.

Clover and How to Grow It, by Shaw.—Treats on growth, cultivation and treatment of clover as applicable to all parts of U. S. and Canada and takes up the subject in a systematic way. Price, $1.00 prepaid.

Principals of Agriculture, by Bailey.—The introduction explains what agriculture is and the factors upon which it depends. Part I. treats of the soil, its texture, its moisture, its tillage, and enrichment. Part II. treats of plants and crops, and the breeding of plants and their care. Part III. treats of the animal stock on the farm. Price $1.25 prepaid.

STOCK RAISING

Breeding Farm Animals, by Prof. F. R Marshall of the Ohio State University. Just published. Practical problems involved in animal breeding are discussed and their principles explained. The only book in which science has offered definite, practical guidance to the breeder in working toward more profitable market types of cattle, hogs, sheep and horses. Beautifully printed. Profusely illustrated. Bound in cloth. Price, $1.50 prepaid.

Swine, by Wm. Dietrich.—New, 300 pages. All breeds historically considered and commercial merits discussed. Economical pork production is the author's central thought. Chapters on feeds and feeding form a large part of the book. Price, $1.50 prepaid.

Feeds and Feeding, by Prof. W. A. Henry.—New edition. Over 600 pages. A handbook for the student and stockman. Price, $2.25 postpaid.

MISCELLANEOUS

Domesticated Animals and Plants, Davenport	$1.25
Produce Markets and Marketing, Seibels	2.50
A B C of Potato Culture	.8
Home Water Works, Lynde	.85
Audel's Answer on Automobiles	1.50
Self Propelled Vehicles, Homan	2.00
Audel's Gas Engine Manual	2.00
The Farm and Garden Rule Book, Bailey	2.00
Business Organization, Sparling	1.25

ADDRESS YOUR ORDER TO BOOK DEPARTMENT

THE FRUIT-GROWER and FARMER, St. Joseph, Missouri

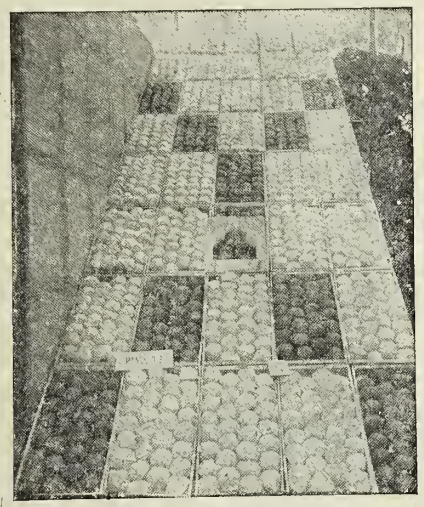
The Sebastopol Apple Show

California Show Where the Grabenstein is king.

By L. L. DeBra, California

One million beautiful red and gold Gravenstein apples were used in preparing the various featuro exhibits, box displays and in making pies at the Third Annual Gravenstein Apple Show, held at Sebastopol, Sonoma County, California, August 19th to 25th, inclusive. Fifty thousand persons passed through the large exhibit tent, and without exception they all declared that the show this year was bigger, grander, and better in every way than those of previous years. Which is saying something. It is also worthy of note that the attendance this year was almost equal to the combined number of persons who attended the show last year and the year before.

Just after J. P. McDonnel, president of the Gravenstein Apple Association, had pressed the button that started the exhibit machinery going, Robert N. Lynch, secretary of the California Development Board, gave an interesting and instructive address in which he dwelt particularly on the effect the opening of the Panama Canal



FORTY BOXES OF APPLES FROM ONE TREE.
Exhibited by H. M. Harbing.

would have on the apple industry of California. He predicted that the advertising given to California through the exposition in 1915 and the opening of the canal would place this state among the foremost apple states in the union.

Considerable ingenuity and care were shown in the feature exhibits. Red and gold striped apples and dried apples were woven together to represent a large Dutch windmill, a ferris wheel, a prairie schooner, buildings, horses, etc. Forestville growers prepared, at great expense, a representation of the Panama-Pacific exposition grounds as they are to appear in 1915. The sinking of the Titanic was also shown, prepared entirely from apples.

The principal attraction, of course, was Luther Burbank's booth wherein he showed many of his new creations, together with scores of little known fruits and vegetables. Some of Burbank's new plums on exhibition for the first time had not yet been named.

Indicative of the rapid growth of the apple business in Sebastopol, one grower displayed over 2,000 boxes packed ready for shipment to Australia. Yet a few years ago Sebastopol apples were unheard of. Another exhibitor showed forty boxes that came off one tree. There was also shown a box of apple picked off a tree one hundred years old.

Aside from apples, there were shown many varieties of other fruits as well as vegetables. Sebastopol shipped 1,800 tons of blackberries this year, some of them going as far as Missouri River points. The record shipment for one day of 126 tons. The Clayton ranch presented an exhibit that was really remarkable. It consisted of the astounding number of 252 varities of products raised on one farm. There were sixty-three varieties of vegetables, sixty-one of apples, twenty-two of nuts, sixteen of berries sixteen of plums, ten of peaches, and many others.

The apple industry of this section is growing rapidly and has a very promising future. Every year the growers are supplying new markets, but as yet they have been unable to meet all the demands for shipments. For, aside from the American markets, the Gravenstein is shipped heavily to Australia, England and Germany.

The price has also been rising steadily. In 1908 the price averaged $20 a ton, loose. As high as $35 was paid in 1909, while the price reached $40 in 1910, and the first apples in 1911 brought from $60 to $70 a ton. It is estimated that 300 carloads will be shipped out this year at a price equal to or better than last year's.

The Sebastopol Apple Growers' Union, an organization formed for marketing the crop of packed apples, has been instrumental in getting higher prices for the growers. The union operates three packing houses at which the pack is standardized and guaranteed as to quality, size, color, and that it will pass quarantine regulations in foreign ports. Indeed, the marketing system among the growers of Sebastopol is so well organized that there is practically no waste, the driers, jelly works, or vinegar factories getting everything not fit for shipment.

The average size of the orchards is about eight acres. While at Sebastopol, I had a friend motor me out to the famed orchard (they call them "ranches" out here) owned by Mrs. Ida Hunt. She has ten acres, five of which are planted to Gravensteins now in full bearing, sixteen years old. In 1909, Mrs. Hunt kept a strict account of her returns and found that on a valuation of $500 an acre she made thirty-four per cent net, getting 1,750 boxes, besides the culls. In 1910, her net profit, with the same valuation for her land, was twenty-five per cent. Her average yield per acre is 350 boxes; the highest in recent years is 463. The average price of the last five years she figures at $1.55 a box, and the highest $2.00. The average gross returns an acre are $542, although she has made $600. Her expenses average $130 an acre, the cost of picking being about $25, cultivation $6, spraying $10, pruning $9, and packing $80. While she has made a clear profit of $470 an acre, the average net returns the past five years has been $412 per acre.

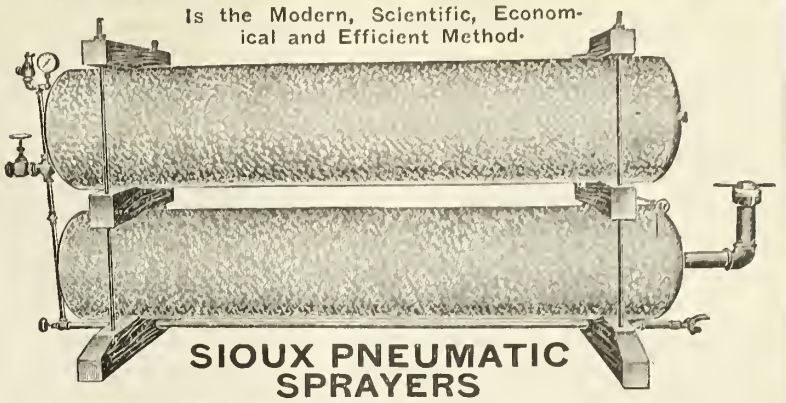
While the Sebastopol country is now sending apples to practically every market, yet it does not really offer much competition to the eastern growers. The Gravenstein of Sebastopol is on the market a month before eastern apples are in. It seems to fill a peculiar place of its own.

The additions which are now being made to the cold storage houses at Hood River, Ore., will make the total storage capacity at that place sufficient for 600,000 boxes of fruit. There are four of these storage houses, each owned by a different company: The Hood River Apple Growers' Union, The National Apple Company, The Hood River Apple & Storage Co., and the Davidson Fruit Company.

Renew your subscription today.

PNEUMATIC SPRAYING

Is the Modern, Scientific, Economical and Efficient Method.



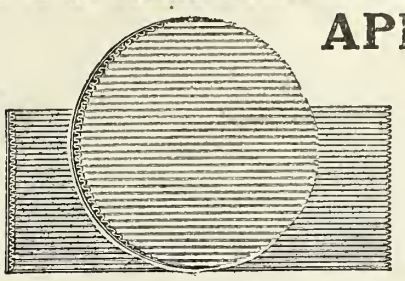
SIOUX PNEUMATIC SPRAYERS

ARE THE MACHINES FOR DOING IT

No engine, pump or other machinery on the wagon—nothing but two galvanized steel tanks, one for air and one for solution. Not a moving part on the sprayer. Nothing to wear, break, balk or bother. Will last a lifetime. Perfect agitation. Can be used on any wagon. Operator's undivided attention given to spraying. No time lost. Does this mean anything to you? If it does, write for Bulletin A2.

SIOUX CITY AIR COMPRESSOR COMPANY

710 BLUFF STREET. SIOUX CITY, IOWA



APPCO Corrugated Barrel Caps

$6.00 PER THOUSAND

Deeper Corrugations.
Better Glueing.
Better Fiber.

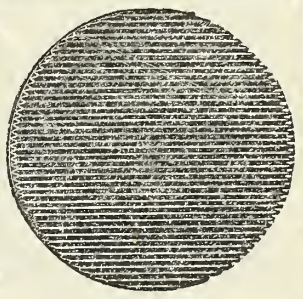
APPCO Caps take up the squeeze and preserves fruit. Looks better, sells better.

Standard 16½-inch Size, - - - - - per 1,000, $6.00
Box Lining, 11 x 18 inches, - - - - " 6.00

Don't Wait Too Long, But Get In Your Order At Once. Address,

American Paper Products Company, 251 Bremen Avenue, ST. LOUIS, MO.

IDEAL Corrugated Paper Cushions For Packing Apples



KEEP THE FRUIT UNBRUISED so that apples are delivered as round and solid as the day they were packed. Their use is an evidence of careful packing which commends your fruit to the trade and their cost is so low that every packer should AT LEAST INVESTIGATE.

Standard discs 16½-inch diameter. Discs and sheets cut to order in any size. Write us.

THE HINDE & DAUCH PAPER COMPANY

Department "3" SANDUSKY, OHIO

CLARK'S CUTAWAY TOOLS

Orchard and Farm Harrows, Cider Mills, Etc.

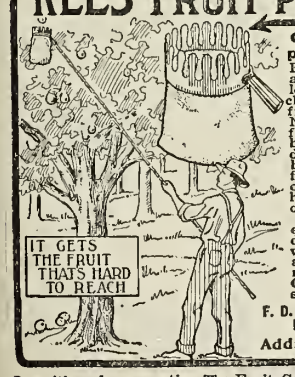
Also Spray Pumps and Outfits, Rhodes Pruning Tools, Pointed and Step Orchard Ladders, Veneer Tree Protectors, Wilson Picking Bags, Kee's Fruit Pickers and other good things for the fruit grower. Thomas Baler and Box Clamp, Etc.

Elastic Pruning Paint For Damaged Fruit and Shade Trees. Save those already damaged by rabbits, borers, pruning or other causes.

E. G. MENDENHALL, Western Distributing Agent "Clark's Tools"

ALSO FRUIT GROWERS' SUPPLY DEPOT BOX 300, KINMUNDY, ILLINOIS

KEES FRUIT PICKER



Gathers, Apples, Peaches, Etc., as carefully as by hand with less work. Saves climbing ladder. No fruit out of reach. No wire to injure fruit or tangle in branches. Fruit drops into cloth bag, which can be filled before lowering. Ask your hardware dealer or send to us. Price complete, except long handle (a fish pole will do), 50c, postage paid. Your money back if not O. K. Circular sent on request.

F. D. KEES MFG. CO., Beatrice, Neb.

Address Box 425.

In writing please mention The Fruit-Grower and Farmer.

How to Feed Hogs for Profit

Hogs Can Utilize Waste From Fields. Western Demand Neber Supplied.

In the Northwestern states where farming has been conducted along the lines which are quite distinctly specialized, such as grain production on a mammoth scale, where farmers grow apples, peaches, berries, prunes or hops to the exclusion of all other farm products, or where they engage in cattle raising in the good old fashioned western way, the demand for pork has never been supplied. In Bulletin No. 74, just issued by the Idaho Experiment Station, Professors Carlyle and Iddings say that "consumers annually send millions of dollars eastward for hogs on foot, and in the form of pork, including the by-products. In meeting this Northwestern demand for pork there is a profit for the producer. The Northwest farmer should be the producer. He should have the net profit returned and secure all the other benefits that come from live stock husbandry.

"In the wheat raising section of Idaho a considerable portion of the crop is shattered and lost in harvesting with the combine, and scattered around the separator in conveying it to the machine, either in threshing from the field or stack. Hogs can utilize this waste and return from eight to eleven pounds of pork for every bushel of shattered wheat consumed. Wherever extensive dairying is practiced, skimmilk is a by-product and can be used by no animal to so great an advantage as by the hog. The summer fallows of the dry farming sections in many cases can very profitably grow corn, field peas and other crops of similar nature The newer irrigated sections have thousands of acres in alfalfa which may be utilized to great advantage by pasturing them with hogs. An acre of alfalfa will keep from fifteen to twenty pigs during the summer, and with grain in addition, will make very profitable gains and a high quality of pork. The Missouri Experiment Station made a test of the pork producing capacity of different pastures, when used with a partial grain ration. Valueing pork at six cents per pound, it was found that bluegrass produced 295.2 pounds of pork per acre of pasture, with a value of $17.71. Out of eight different kinds of pasture, such as bluegrass, alfalfa, clover, cowpeas, soy beans, corn, ryegrass, and a combinatlon of rape, oats and clover, the lowest pork production was 183.1 pounds on soy beans. Alfalfa, the king of all legumes, scored the highest production, having made 596 8 pounds with a value of $35.71. Clover came next with 572.2 pounds of pork, worth $34.11, and the other pastures running in production down to that already given for soy beans

"Our Western alfalfa produces more heavily, grows more rapidly, and is of higher protein content, or of muscle and bone building capacity, than the Eastern grown alfalfa," continues the bulletin. "Red clover is near alfalfa in value as a hog pasture and is grown to good advantage in many sections of Idaho. Rape, oats and rye can be grown in every part of the state. The other pastures mentioned have as yet not been extensively tested under Western conditions. Fine, early cut alfalfa hay and leaves may be used as a part winter ration for all kinds of hogs. Grains grown here are of high quality and are adapted to profitable hog raising and finishing In almost every farming section hog raising will fit in well with farming practice.

"The hog is adapted to a temperate climate, needs clean, dry and well ventilated quarters, and should have pure drinking water. Successful swine production requires feeds capable of building a goodly supply of muscle and strong bone, and other conditions that make for sanitation and freedom from disease. In no state can these limiting conditions be more nearly met than in Idaho. Drainage is excellent, the water supply is generally superior, and sunshine abundant for disinfecting purposes. Grains, grasses and forage are rich and nutritious, mineral supplements are easily obtained and cholera and other scourges comparatively rare. Largely due to these environmental conditions, Idaho hogs are good rustlers, heavy feeders and at the same time have quality and are capable of high finish.

Markets.

"In the matter of markets or the demand for pork products, the Idaho farmer is fortunate in that market facilities and market demands for hogs are far in excess of present supply. The Union Meat Company of Portland, Oregon, has eagerly bought all hogs offered in the Northwest, at liberal prices. In proof of this may be cited the fact that the average top price paid for hogs in 1910 at the Portland market was fifty-five cents per hundred weight above average top at Chicago, which is considered the greatest hog market Further study makes this showing more favorable. Chicago gets a higher percentage of grain fed and highly finished hogs, and the prices paid there for a good mixed packing hog more nearly corresponds to the Portland top price Taking all classes and all grades into consideration, the 1911 average at Portland was $1 per hundredweight above the same average for Chicago."

In the feeding experiments described in detail in this bulletin, the greatest average gain in weight was made by hogs which were fed a ration composed of shorts four parts, barley 2 parts, tankage, one-half part. The average gain on this feed was 146 5 pounds in a period of 105 days, giving a net cash profit per pig of $3 89. The next best ration consisted of two parts wheat and one part each of corn, shorts and tankage. These pigs made an average gain of 135.5 pounds in ninety-eight days' feeding, with the net profit per pig of $3.45. But the greatest daily profit per pig came from a ration consisting of eleven parts wheat to one part tankage. These pigs produced 81.3 pounds in fifty-six days and made a daily profit for the owner of $5.98.

The bulletin says that "in selecting a breed for Idaho conditions, a choice should be made from the Berkshire, Poland China, Duroc or Chester White. In weight, western specimens of these four breeds differ little. No matter what breed is selected, the long, deep and broad bodied, strong backed hog that stands well on its feet and shows evidence of growthiness, will be found to be the profitable type. When this breed is selected, there is little difference between the breeds in general body structure.

"The hog is the most economical producer of flesh of all our farm animals. He can utilize a wider variety of cheap feeds than any other domestic animal. In gathering waste wheat, oats and barley the hog saves grain otherwise a loss, and adds to the farmer's income. Recognition of this fact is the increasing popularity of hog-tight fences for the grain-raising sections of the state. Small potatoes, fallen apples, pumpkins and squashes, shattered alfalfa leaves and by-products from the kitchen and dairy can be used to very great advantage in cheap pork production. Four to four and one-half pounds of potatoes are equivalent to a pound of grain. Apples, pumpkins and squashes are fed in the raw state. Dairy and kitchen wastes are fed directly in thin liquid form or are used to moisten or make a slop of a ground grain ration.

"In addition the these cheap feeds, wide use should be made of pasture. Under the pasture system the hogs harvest the crops, develop strong bone, make vigorous growth and make cheaper gains than by any other system of feeding Alfalfa is the most successful of all hog pastures. An acre will carry during the summer season six to nine brood sows or fifteen to twenty good sized pigs, and will produce from 500 to 800 pounds of pork By means of permanent hog-tight fences, or temporary fences of panels, pastures should be divided into lots of from two to five or six acres in order to provide for a system of rotation by means of which one lot is used until eaten close and then allowed to make fresh growth. Furthermore, in handling sows and their litters, the pigs, especially just after weaning, should have separate fresh and tender pasture. Rape and kale are comparatively little known as pastures, but have been very successfully used in Idaho. These crops should be sowed in rows twenty to twenty-eight inches apart. The Wisconsin Station found that an acre of rape properly handled was worth one and one-quarter tons of corn.

"Herd management with all of these

Will exterminate Rats, Mice and Gophers from your premises in a Safe, Sane and Sanitary Manner.

RAT CORN

NO ODORS OR SMELLS

It mummifies them. No matter where they die, they simply DRY UP. Positively do not smell.

Rat Corn is a new and scientific discovery, and without a doubt the greatest rat destroyer in the world; the only one that kills rats without any bad, dangerous or disagreeable effects. A trial will convince you.

25c, 50c and $1.00 per can—6-lb. pail $5.00
Express Prepaid

Ask your dealers, or sent by mail on receipt of price. We pay postage. Booklet "How to Destroy Rats" Free with each can. Farm Agents write for Special Price. Made only by

Botanical Manufacturing Company
250 S. Fourth Street, Philadelphia, Pa.

After eating Rat Corn he is Mummified.

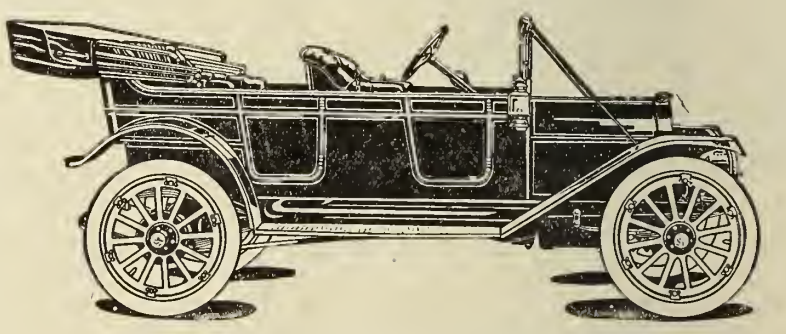
Try This Stump Puller at Our Risk

The Smith Stump Puller will take out every tree and stump by the roots, clearing from one to three acres a day, doing the work of twenty men. We want you to send for our 3 year guarantee against breakage and our free trial proposition Address

W. Smith Grubber Co.
8 Smith Sta.
LaCrescent, Minn.

When writing to advertisers, mention The Fruit-Grower

K-R-I-T



Model "K" Touring Car, Fully Equipped—$900

Equipment includes three oil lamps, two gas lamps, generator, top with side curtains and top cover, windshield, horn, demountable rims with spare rim, tool kit with jack, and tire repair outfit with pump.

An Unbeatable car on country roads

To qualify for use in the country, a car must have plenty of power and a sturdy build.

In these respects, the Krit owner is particularly fortunate.

He has a car whose power will acknowledge no obstacle in the shape of mud or sand or hills.

He has a car of lasting durability in every part—a car that will return its cost a hundredfold in economical service rendered.

We know the Krit has these qualifications because the Krit organization itself produces every essential part of the motor, clutch, transmission, axles, etc.

Nothing is trusted to outsiders.

The result is that you cannot lay your finger on a single part of the Krit and say:—"This should be stronger."

The Krit has a roomy, easy-riding five passenger body—it is an admirable family car.

Compare the Krit with other cars and you will see that, for actual money-value, it cannot be matched under $1,500.

Write for the catalog describing this remarkable car, and the name of the nearest dealer.

Other Models

Model "U" Underslung Roadster	$1000
" "KR" Roadster	900
" "A" Roadster	750
" "KD" Covered Delivery	900

KRIT MOTOR CAR COMPANY, 1009 E. Grand Boulevard, Detroit, Mich.

pastures should be the same as with alfalfa. The herd boar needs a little grain and lots of pasture. Sows suckling pigs need about one-half grain ration and good pasture, suckling pigs should be pastured and taught to eat grain as soon as possible. From weaning time on, they should have enough grain in addition to pasture to keep them growing vigorously, prevent stunting and excessive paunch development. The question is often asked as to how much grain in pounds is advisable? Results of experiments show it most profitable to feed to pigs on pasture one pound to two pounds of grain daily for each one hundred pounds of live weight. Dry brood sows and all older hogs kept for breeding purposes can be handled successfully on pasture alone. Many advantages of pasturing have been mentioned; the principal one, however, is cheapness of summer feeding without interfering with ample nutrition.

"The problem of cheap winter feeding is now solved by the use of legume hay. Alfalfa, clover, vetch and field peas are most successful and commonly used. Hay feeding is frequently abused by expecting hogs to winter on hay alone. An animal with so small a stomach as the hog is not adapted to utilizing large quantities of roughage and, in every case, some other less bulky feed should be used in addition. The boar cannot be expected to come through the winter advantageously on hay alone; brood sows need one-third to one-half of a full grain ration and, in addition, alfalfa or other legume hay; young gilts must have nutritious feed to make growth and nourish their littlers, if pregnant, and should have at least one-half grain ration. The Idaho Station has secured no accurate data on use of hay in fattening hogs, but, judging from results secured by the Nebraska Experiment Station, hay might be successfully used in this state for finishing hogs for market, using a ration consisting of one part hay fed with from four to nine of grain. Methods generally used in feeding hay are to feed it whole in racks, or to cut and mix it with dry or moistened feed. When alfalfa is abundant and cheap it is most economically fed whole in racks. The coarse stems are largely cellulose or crude fiber, and contain comparatively little of feeding value for hogs. For that reason the finer hay particles as found in second and preferably third cutting are more valuable in hog feeding. Good results are secured in feeding cut alfalfa and the meal, and this is advisable where alfalfa is hard to obtain and expensive.

"Skillful use of pastures and hays means healthy hogs, rapid growth both winter and summer, and production of marketable pork at from three and one-half to four and one-half cents per pound."

Save Work in the Family Wash.

"Wash day" is dreaded very much by the women on most farms. The work usually is done with old, out-of-date equipment, and it really is a hard task. It is not necessary to do all of the hard work that usually goes with doing the family washing.

One way to handle the laundry proposition in the country is by establishing community laundries. These may profitably be installed with the creameries, and the cost will not be great. Here are the figures for the cost of the equipment. They were furnished by Miss Frances Brown, of the extension department of the Kansas State Agricultural College:

LESS EXPENSIVE EQUIPMENT.

Gasoline engine, ½ to ¾ horsepower	$ 50 00
Power washer with wringer	30 00
Water heater, 4 gals a minute	28 75
Wash boiler, copper	2 50
Gasoline hot plate, 3 burners	5 00
Stationary tubs, 2 compartments	7 37
	$123.62

IDEAL EQUIPMENT.

Steam engine, 2 horsepower	$ 74.00
Steam boiler, 2 horsepower	68.00
Strong power washer, 24x24 in.	65.00
Strong power wringer, 17x3¼ in.	40.00
Mangle, gasoline, 37x4½ in.	100.00
Drying room, 2 racks and $10 pipe	60.00
Stationary tubs, 3 compartments	22.00
	$429.00

Such a laundry, if it is not owned by the creamery, may be managed as a private business by someone in the community, or it may be handled as a co-operative venture in the community, and the women can have certain days when they can go to the laundry and do the washing for their families.

But perhaps you desire to put in a private laundry, and do the work at home. If you do, the plant need not be expensive. A good, combination washer and wringer can be purchased for $26, and if you have a small gasoline engine—and if you haven't, you ought to get one for the other work on your farm—that is about all of the expense, if you will use the equipment that you now have for doing the work the old, hard way.

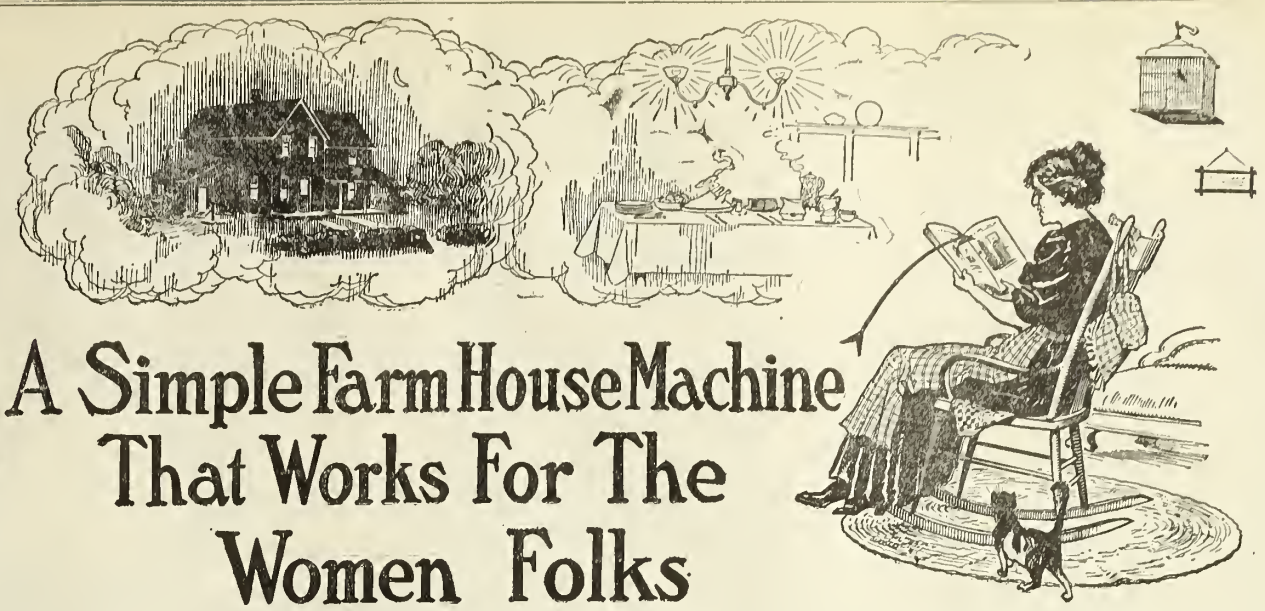
A small plant of this kind was installed in a Woodson County, Kans., farm home, last spring. In speaking of the plant, the lady of the family said: "It used to take me all day to do the washing, and it was the hardest household work we had to do. Many a time I have made myself sick doing this work. We now do all the work in two hours, and the use of the machinery has made the work almost a pleasure. I have had no trouble with the machinery. The maintenance is not expensive, for we do not use more than three cents' worth of gasoline in the two hours. There should be equipment like this installed in every farm home."

More Dirty Milk.

While the fight for clean milk in the cities has had some good results, there are many cases where the men who are financially interested in the milk supply seem determined to do all in their power to oppose the campaign for clean milk. For example: "In Chicago recently the city council failed to pass an ordinance providing for a clean and safe milk-supply, which had been prepared by the milk committee of the council and the city health department after much study and consultation with all parties interested. The failure of this ordinance to pass, together with the enactment of a law by the Illinois legislature preventing cities from demanding a tuberculin test of cows furnishing the city with milk-supply, leaves the city almost helpless as regards the safety of the milk for its babies. The chief source of opposition seems to be the small dealer, who evidently opposes it because he does not wish to curtail his profits by the added expense necessary to cleanliness.

"In Erie, Pa., after repeated failures of the city health department to induce a large number of milk dealers to comply with the milk regulations to the extent of straining the cow-manure and other dirt out of their milk, the authorities were compelled to seize much of the supply and pour it into the gutter. In San Diego, Cal., on account of a weak and defective ordinance which gives the courts room for a technical interpretation, making convictions for violations almost impossible, the health board has urged that the ordinance be amended so as to make violations punishable by imprisonment. The present San Diego ordinance provides for a small fine, and only on a fourth violation is the milkman's license revoked."

The city councils in many towns would do well to remember the health and lives of many of the children are in their hands, for unclean milk will produce disease and death. They also should remember that decency and cleanliness will pay in politics and business as well as in everything else.



A Simple Farm House Machine That Works For The Women Folks

Why Not Put This One Small Machine In the Farm Home—To Make Mother's Work Easy? = When Father Has a Dozen Or More Bigger Ones to Lighten His Labors.

Why not present Mother with a "Pilot Country Home Carbide Machine?" A machine that will cut the good woman's work in half and make the old farm house a better place to live in.

Father has his riding plows, cultivators, binders, mowers, corn cutters and manure spreaders—he needs them all to make the farm pay—incidentally they make farm work twice as easy as it was a generation ago.

In the meantime the woman's end of it—the house work—is every bit as hard as it ever was. It is certainly mother's turn. She is clearly entitled to anything in the way of machine help to lighten her labors as much as one of these little gas plants will.

With less than fifteen minutes' attention once a month one of these Pilot machines will provide all the gas necessary for light and fuel in a big house. And in every such home the housewife will be forever relieved from the trouble and labor of handling coal, fire-wood, ashes, kerosene and greasy, smelly oil lamps.

Already over two hundred thousand farmers' wives are enjoying this wonderful convenience. For fully that many Carbide machines have been sold and installed in farm homes to date.

We ship with these Pilot light and fuel plants, the light chandeliers and the gas cooking range, all ready to set up. And this outfit can be installed in three days without injuring walls or floors.

The Pilot machine will set in your basement or an out-building. The iron pipes will run inside your walls just as in all city houses. The chandeliers, in brass or bronze, you can select from a catalogue of a hundred beautiful designs.

The lights you can have fixed to light up without matches—by simply pulling a chain that hangs from the burners in every room, barn, shed and out-building.

Every light will be as white and brilliant as sunlight itself. So clear and soft that it is often referred to by scientific writers as "Artificial Sunlight." No other light will add half so much to the beauty of a room. And no other light can equal it for reading purposes.

The cooking range will be just like the "Gas Ranges" used in millions of city kitchens. The ever-ready fire can be turned on or off with a thumb screw. Like the city gas range this Carbide Gas Range insures a cool kitchen in hot weather and cuts the work of cooking meals in half at all seasons of the year.

If you will write and ask us for it, we will be glad to send you our free wonder book.

It tells about the magical gas producing stone, "Union Carbide"—how the Pilot machine releases the gas from this stone automatically—just the amount you use, no more, no less. It tells why the Union Carbide can't burn or explode. It tells why it can be kept for years. It tells how the light can be used in barns and other farm buildings. It tells why it is better than electricity and cheaper than kerosene. It tells why it is not poisonous to breathe. It tells why insurance authorities pronounce it the safest of all available illuminants for country homes. It tells what sized and priced machines different sized farms use.

All these facts are explained in the book in a manner that will make it perfectly clear why this HOME MADE GAS is now used by over two hundred thousand farm families.

Send us your address NOW, before you forget it, and we will mail you the book and full particulars promptly.

Just write to THE OXWELD ACETYLENE CO.— 123 So. Michigan Blvd., Chicago, Ill.

With Our Home Folks

Conducted by Mrs. Ruth Motherby. Address all Communications to Home Editor Fruit-Grower and Farmer

A New Club

What do you say to a club to be conducted through these columns? I have corresponded with a few of our readers on this subject, and they seem to think we can make it interesting. I have known of such clubs that were conducted in this way for years. Few of the members ever saw any other club member, yet some very pleasant pen friendships were formed, and many of these pen friends are still corresponding.

I am in favor of an Economy Club as a starter. It is easy, and most of us will find it helpful. Understand, we are not going to confine ourselves to telling how to make over old clothes, or to convert old barrels into easy chairs. The idea is to exchange ideas that are helpful as a means to economy of time, strength, money, nerves, material or space.

Now, in order to get started, here is my proposition: Write out three different items telling of some pet economy, having each on a separate sheet, for all your items will not be used at one meeting. Sign each with the name you wish to appear in print. If you use a pseudonym, send me your correct name and address also, to be entered on my list of members. If you will write me a little personal letter telling of some characteristic, the reports of our meetings can be made more realistic. If you don't, the secretary will be forced to guess what you're like, and that might not please you!

For the best three items sent in before the first of November, we will give a prize of three dollars; for the second best a prize of two dollars; for the third best a year's subscription to this journal.

My correspondents sent in a few items to be used as a beginning, which enables me to give you some idea of what our club will be like; but, of course, with more members we can give a greater variety of suggestions in each report.

RUTH MOTHERBY.

Our Economy Club.

When the first meeting of our new club was called to order, the president looked at us with a beaming smile. There were so many more than we had expected at the first meeting that it really seemed as if the success of our club was assured from the start.

The first member to register was from Minnesota. She doesn't care to have her real name mentioned, so has decided to become known as "Minnehaha." She says that her friends describe her as the lady with a wide smile—which certainly sounds good, for this world will never have an over supply of wide smiles.

"I had a guest all day yesterday," said Minnehaha, "and when we were clearing away the dinner dishes she asked what she could do with what remained of the mashed potato. I told her to throw it into the garbage can, since there was so little of it. She looked her disapproval, and replied that she should do nothing of the sort for there was fully a coffeecupful of it. 'We will have it for supper,' she said; 'I will make you a potato omelet.'

"She stirred a spoonful of flour and half a teacupful of milk into the potato, making a smooth batter, then added a pinch of salt and half a teaspoonful of soda, and set it away in a cool place. When we went out to get supper the batter was light and spongy. She quickly stirred in three well beaten eggs and poured it into a skillet containing a little hot pork fat. When the omelette was well browned on the bottom, she set the skillet in the oven to let it brown on top; then it was served hot from the oven. It was perfectly delicious."

"I save what is left of the mashed potato for a crust to spread over a meat pie," said Poppy, the member from California. "We nearly always have some bits of meat left over, and I cut these into dice—using more than one kind if necessary to fill my basin. If I have some slices of tomato or a dish of stewed tomato, I stir that in, also, then beat an egg into the potato and spread it over the pie. I always put some pieces of butter on top just before putting the dish into the oven."

"Don't you put any water in with your meat?" asked Minnehaha.

"Yes," replied Poppy, "if I do not have gravy enough, and there is no soup stock. But I always have a can of meat extract to mix with water and use instead of gravy."

"I use bits of cold meat to stuff green peppers, when they are in season," said Cordelia—a most retiring lady who says she would be a suffragette if she wasn't so afraid to speak out in meeting. "I cut the tops from green peppers, remove the inner membrane and seeds with a sharp knife, then cover the peppers with boiling water to remove the sharp taste. I chop the cold meat, season it to taste, add half the quantity of toasted bread crumbs, mix it with beaten egg, then fill the peppers, when they have stood in the water until it has become cool. I pack them into a baking dish, pour canned tomato over them and let them bake until the peppers are tender. This makes a very nice dish. Sometimes I use large fresh tomatoes instead of the peppers, as cases for the meat filling. They are very nice when baked in this way and served hot."

"When I tell you what I've been doing," said Redwing, 'you'll vote to put me out." Of course, we were most anxious to hear what she'd been doing, after that announcement, and great was our astonishment when we had been told. She had been ravelling out an old rag carpet with the intention of using the rags to make a new carpet. Now did anyone ever hear of anything like that! She said she discovered that the warp was badly worn, but the rags were good; so she persuaded the children to help her, and the rags were made into skeins as they were ravelled. She dipped the skeins into dye, which brightened them up, and then sent them to the weaver. "It was much easier than it would have been to sew rags enough for a new carpet," she said, "and the weaver has just telephoned that I'm going to have a very pretty bedroom carpet."

It was declared that Redwing must be our nerviest member, for who else would have had courage to admit that she actually ravelled out a rag carpet and used the rags again?

"My item," said Mumsey, "deals with economy in time and strength, for it insures my getting help from my children that I might not secure if I had not invented my bulletin board. It consists of a small blackboard which hangs on the kitchen wall. Just before retiring at night, or early in the morning before the children are up, I write on this board what I expect each one to do. They are expected to look at the bulletin board the first thing upon arising, and see what is expected of them. It will look something like this:

Clara: Wash potatoes to bake for luncheon; make the boys' beds; put living room in order.

Tom: Fill the woodbox; sweep the walk; feed the poultry.

There are six children, and each is given certain tasks. I vary these so as to prevent monotony. For instance, Clara may be called upon to fill the woodbox and Tom to wash the dishes. We look upon this as a game. Each child is given a certain number of tickets every Monday morning. If

The Colorado Midland

Affords the Best Service to

The Fruit Lands and Farming and Grazing Lands of the Western Slope

There are thousands of acres of good lands still uncultivated in the fertile valleys of eastern Utah and western Colorado, and oceans of water in the streams and on the mountain tops. Special rates made for landseekers to go and look at these lands and for settlers. Write us or come in and ask us for information about what has already been done in that section.

MIDLAND ROUTE

E. P. CARR, City Passenger Agent — E. D. WHITLEY, City Ticket Agent

Telephone Main 6280. Seventeenth and California Sts., Denver, Colo.

DINING CARS, PULLMANS AND CHAIR CARS ON ALL TRAINS

Trees and Plants

Do you want the best at prices that are right? If so, look at this: Apple and Peach at 5c each; Plum, Pear and Cherry at 12c and 15c each; 40 Concord Grape for $1. All of our trees are grafted or budded from good breeding stock. Get our catalog and price list. They tell the rest. Give us your order now. We will save you money.

THE ROEDER NURSERIES, OSCEOLA, MISSOURI

In writing please mention The Fruit-Grower and Farmer.

he fails to start at his tasks within a certain time and another child does them, that child makes him give up one of his tickets. But no one can do another's tasks until his own have been done. If a task is not well done, it is given to another to do over again and the offender must give up a ticket. If a child is heard whining over his task or complaining that it has been given him too frequently, or in any way failing to prove himself sportsmanlike, he must give up a ticket to the one who first hears and reproves him.

We have a meeting every Sunday evening, when tickets are counted and a record made of the number each has kept or gained during the week. We have a book for that purpose, to which all have access. At these Sunday evening meetings the children have the privilege of telling of something they would like to do or to own. This is talked over, and we agree as to how many tickets should be considered sufficient to obtain that particular privilege; then it is understood that it will be granted when the number agreed upon has been earned. The children understand that they must consult the bulletin board early in the morning and immediately after lunch, every day. They enjoy this method of being set tasks, and it is surprising how much they accomplish, and how much time I gain by thus securing their assistance."

At the close of our meeting we exexpressed ourselves as pleased with our new club, and very hopeful that it might continue.

MADAM SECRETARY.

Economical Traveling.

Dear Fruit-Grower: I come to you for advice; please help me. We expect to move this fall—to go on a journey that will last for five or six days—and we wish to make it as comfortably as possible. We are farmers, in rather poor circumstances, and unused to travel. As you may imagine, it seems like a big undertaking to me. There is a large family to provide for—seven in all. We shall be obliged to carry our lunches with us, and I want suggestions as to what to prepare. We expect to buy bread at the various stopping places, for we couldn't possibly carry enough to last us through; but I'd like to take as much as possible of everything else that we shall need. We cannot afford to go into the Pullman cars, but must get what sleep we can in the ordinary coaches. Any suggestions as to how to make ourselves comfortable will be most gratefully received. And how shall we dress? What about head gear? Must we wear our hats in the car, or can we wear pretty silk scarfs? We are going West. How shall I dress? I am rather fleshy, and cannot wear a corset, or anything tight. I made a similar trip thirteen years ago. Did not know how to prepare, and was perfectly miserable.—Mrs. Backwoods.

As this is the season when many farmers are moving their families to localities where land is cheaper, I have decided that the suggestions I gave to "Mrs. Backwoods" would be very gladly received by many others, and so will try to find space for a copy of the letter I wrote her.

In the first place, it doesn't pay to sit up for five consecutive nights when traveling. I don't care how poor you may be, you'll save money in the end by arranging to get some sleep. Now here is a plan that has been carried out, more than once to my knowledge, by families too poor to pay for sleeping accommodations for all. Go on a train carrying the tourist Pullmans, and buy one berth clear through to your journey's end. Two can sleep fairly well in one of these berths, and you can take turns occupying them. Perhaps the smallest child can get along in the day coach. That will leave six of you to share the berth—giving each of you two nights sitting up and one in bed.

There is another advantage in doing this: You are thus entitled to a seat in the Pullman, and will find a rest in changing about. You are also entitled to use the toilet room.

You ask about hats. If you already have good hats, wear them; but take them off in the cars and put them into large paper bags—or bags of black silkolene. I like the silkolene, because you can also put handkerchiefs, veils and gloves in them, and you will know just where to find these things when you are getting ready to leave the train. Make the bags with draw strings to close them with. If you must buy hats, get felt, for they can be worn all winter in the West. If you cannot afford to buy the best felt, get the stitched cloth hats. They are nice for traveling and are very cheap. I have seen pretty white ones for sale for thirty cents—just the thing for the girls. Put them in the bags when not in use, to keep them clean.

Dresses of gingham look best for young people when traveling on day coaches; but one dress won't be enough for the trip. If you have so much baggage that you can't take enough gingham dresses, better make all your gowns of mohair. They wear well, look well, shed dust well, and do not muss easily. Make them quite plain, but in the prevailing styles. Gowns much trimmed never look well on such trips. Make them in one piece—that is, waist and skirt sewed together, so that there will be no danger of gaping apart. It is a good idea to have the petticoat sewed to the waist also. Wear union suits instead of starched underwear. For yourself, I should advise a long, loose traveling coat of serge, linen or cravenette. These coats are not very warm and they look well. You can wear it all day over any comfortable gown.

Your greatest difficulty will be to find space to pack away the things you must carry. You will probably occupy three seats, which will give you three racks—but they will hardly hold your suitcases, hats and wraps. Your lunch must go somewhere else—and it will take so much to last a family of seven for five days—even though you do buy your bread.

The best thing to do is to make wooden boxes that you can use as footstools. These footstools are a great comfort when one is on a long journey. Make them of the light wood, such as is used for packing-cases for fruit, and be sure to have them of the right size to go between the seats. Make holes in the sides to give air to the food, and line them with oiled paper to keep out the dust. Take as much of your food as possible in cans or dishes that can be closely covered. It keeps so much better that way.

It is almost impossible to take butter and have it keep good on such a journey; but if you like cheese, you can manage very nicely in this way: Grate the cheese and beat it into the butter, adding just a taste of red pepper. Then pack it closely in a jar and fit a tin cover over it, with oiled paper over all. You can make sandwiches of this that are perfectly delicious, and that may be made at any time.

Make tea as strong as lye—a sort of extract of tea, and bottle it. When needed, you can pour a tablespoonful of this extract into a cupful of water, hot or cold, and you have a good cup of tea. I use a pound of the best tea for a quart bottle of the extract. I pour boiling water over it, but do not let it boil at all. Pour over just enough boiling water, at first, to moisten the tea, then add more boiling water from time to time, so that the tea will keep hot and infuse slowly. Then strain it into the jar, and seal. It will keep for days.

The great desideratum in packing lunches for railway traveling is that they shall be so arranged that every-

New Fall Hat

To advertise our millinery department, and to prove that we give the best value for the money, we will sell just four hundred of these swell dress hats at only $1.50 each to readers of this paper. Make out your order direct from this advertisement giving colors and trimming wanted, and be one of the four hundred to get this unequalled bargain. No such value can possibly be purchased at retail stores anywhere.

Yours For $1.50

Read the description:

SPECIAL DRESS HAT Order No. 20X5017

Droop shape crown of lustrous Satona cloth with velvet bound edge. The large puff crown draped with the same handsome material and covered with a fancy, dotted silk net. A beautiful feather drape extends entirely around the crown; towards the front a display of quills in lovely shaded colors gives just the right finishing touch to this charming model. The feathers used in this trimming could hardly be retailed at as low a price as we ask for the finished hat. It represents a value that patrons of retail milliners hardly believe possible.

Selling direct to the consumer is what makes the saving. We will make this hat up in black, brown, navy or cardinal, with trimmings to match, your choice, $1.50 as stated above. Weight packed for shipment, 49 ounces. Safe delivery guaranteed. Money back if not exactly as represented. You cannot lose one penny in dealing with us, and you can save money on all articles of wearing apparel at our low prices.

FREE STYLE BOOK!

Write for our new Fall and Winter Style Book, showing Millinery, Women's Apparel, Shoes, etc. It will pay you to have one.

JONES, POST & CO.

888 Hickory Street, Kansas City, Mo.

FREE UPON REQUEST
A book that every Cow Owner should have

AT an expense of thousands of dollars we have gathered together in this book a great fund of valuable information covering very fully those questions which are of vital interest to every owner of cows.

The very best and highest authorities in the land have written a number of chapters especially prepared for this handbook upon a wide range of dairy subjects.

Dr. Coburn, Secretary of the Kansas Department of Agriculture, the great alfalfa expert, has written a chapter on ALFALFA.

Dr. Alexander, Professor of Veterinary Science, University of Wisconsin, discusses DAIRY COW DISEASES AND THEIR PROPER TREATMENT.

Prof. Hugh G. Van Pelt, the Iowa State Dairy Expert, and one of the Editors of Kimball's Dairy Farmer, has contributed a most interesting discussion on PROPER DAIRY FEEDING AND BALANCED RATIONS.

Dr. Burkett, Editor of the American Agriculturist, tells about the MOST SUITABLE DAIRY CROPS, and other widely known authorities discuss SOIL FERTILITY, DAIRYING FOR PROFIT, FARM BUTTER MAKING, SILOS AND SILAGE, etc., etc.

A series of photographs illustrating the desirable points in selecting a dairy cow are shown, and also photos of representative cows of the various well-known dairy breeds, together with statements from the secretaries of the various dairy cattle associations setting forth the claims for consideration of each breed.

The HANDBOOK also contains much general information such as tables of weights and measures, silo capacities, etc., that every dairyman at some time or other has occasion to refer to.

While the DE LAVAL DAIRY HANDBOOK covers the various phases of dairy farming most completely, it is in no wise technical, but is written in plain every-day language so that even the children can understand it.

You certainly ought to have this book. It's absolutely free. Just fill out the coupon and mail it to

The De Laval Separator Co.
165 Broadway
New York

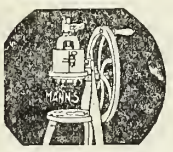
THE DE LAVAL SEPARATOR CO.
165 Broadway, New York.

Please mail me, postage free, a copy of your Dairy Handbook.

I keep_____cows. I sell cream, make butter, sell milk *(Cross out whichever you don't do)*. The make of my Separator is_____, used_____years.

Name_____

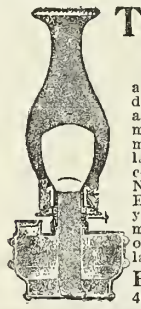
Town_____ State_____ RFD_____ Fruit-Grower and Farmer



MAKE HENS LAY

Lots of eggs by feeding green bone fresh cut, because it is rich in protein and all other egg elements. You get twice the eggs—more fertile; vigorous chicks; earlier broilers; heavier fowls; bigger profits. **MANN'S** LATEST MODEL **BONE CUTTER** cuts all kinds of bone, with adhering meat and gristle, easy, fast and fine. Automatic feed; open hopper, never clogs. Book free. **10 Days' Free Trial.** No money in advance.

F. W. Mann Co., Box 108 **Milford, Mass.**



The Perfect Burner

NO SMOKE—NO ODOR

This ingeniously contrived mantel attachment transforms the weak, reddish flame of the ordinary burner into a white dazzling light. Many times more powerful and clear and gives as much light as three times ordinary lamps. Relieves all eye-strain, so common when poor lights are used. Nothing better for all-night use. Every burner guaranteed. Inquire of your dealer or send us 20c and we will mail you burner complete for a No. 1 or No. 2 lamp, or No. 2 cold-blast lantern. AGENTS WANTED.

Perfect Burner Company
462 Spitzer Bldg. TOLEDO, OHIO

Make $30 to $60 Weekly

selling our new and unequaled portable gasoline table and hanging lamp for lighting city and rural homes, stores, halls and churches. Most powerful light known.

WE LOAN YOU SAMPLE

More brilliant and many times cheaper than gas or electricity. Guaranteed five years. Everyone a possible customer. No experience necessary. Large commissions. Exclusive territory free. Write today.

Sunshine Safety Lamp Co.
195 Factory Bldg., Kansas City, Mo.

24 BULBS FOR 10c.

Together with a Complete Treatise on the Culture of Hardy Bulbs both indoors and out, and our beautiful Catalogue—

ALL FOR 10 CENTS.

These 24 Bulbs, 3 each of 8 different kinds, will make beautiful pots of flowers for winter or lovely early spring flowers for the garden. Plant now.

Our Catalogue of Hyacinths, Tulips, Narcissus, Lilies, Hardy Plants and rare winter-blooming plants **free to all.**

John Lewis Childs, Floral Park, N. Y.

thing need not be picked over whenever a lunch is required. Arrange for different days, and mark the boxes. For the first day put in the more perishable food—that which you can't hope to keep very long—celery, radishes, potato salad, etc. For the second day you can have a jar of baked beans that, spread on your bread, will make excellent sandwiches. If the weather is not very hot, slices of roast beef or fresh pork, roasted, will keep nicely until noon of the second day. After that, better depend upon veal loaf and potted chicken. When making either, put it in one of the wide-mouthed fruit jars, and seal it. To cook the chicken for this purpose, boil it until the meat can be picked from the bones. Don't boil it in too much water. Cut the meat into mouthfuls, return it to the liquid, season it to taste, and when the liquid has boiled down so that it will form into jelly when cold, pack the meat into a jar and pour the liquid over it, sealing it while hot. It will keep a long time, and is fine for sandwiches.

Be sure to take dried beef and some strips of codfish. If you are inclined to car sickness, you can eat this when you can't touch anything else. You can take ginger cake for the first and second day, and ginger cookies for later than that. Make them both strong with ginger, for that warms the stomach, and helps keep you well. Cookies are always nice for traveling. You will find that it will pay to buy some of the packages of ginger cakes that come at five cents a package, for they will keep nice until you are ready to open them, and they are easily packed. I always get cakes and crackers in packages for my trips. I also get canned salmon and sardines for long trips when there are men in the party who insist upon having hearty food twice a day.

Put all your dishes in one of the box footstools. Take tin cups to drink from, tin plates, steel knives, German silver spoons, a good bread knife, a can opener, and a tin pail with a good cover. This pail is most necessary, for you can often get hot coffee or tea at a waiting station, or from the dining car, if only you have a dish of your own in which to carry it. So let your pail be large enough to serve your family. You may also want to get hot water, into which you can pour your extract of tea. If possible, take a small spirit lamp and a bottle of alcohol. You can't use it very well on a day coach, but in a tourist car you can set it in the hand basin in the toilet room, where there is no danger of fire, and heat a cupful of water. I have known one such lamp to cure headache in a dozen instances on one trip. A cupful of hot water containing a pinch of salt and soda, and a sprinkling of red pepper will frequently cure car sickness; so be sure to take all these things with you.

The bottle of alcohol will be necessary for toilet purposes, for you have little opportunity for a bath on a day coach. Moisten a wash rag, pour on some of the alcohol, and the dust may be taken off your face and neck without trouble. It leaves a feeling of freshness that is very grateful, and it is a great help where there are children. Better have some oil of orange mixed with the alcohol. That will keep it from burning the skin and will make it smell better.

Be sure to take plenty of paper napkins with you. Also take some dishtowels and small hand towels. There are never enough towels on the ordinary trains. You will also need cushions for your pillows at night. For this purpose use the bags recommended in these columns some time ago. Make them of strong material, and shape them like envelopes. Do not have them much larger than sofa-pillow covers. You can carry towels, handkerchiefs, stockings and underwear in these bags, and so save taking so many suitcases. When securely buttoned, they make very good cushions. Make one of oiled silk, or of rubber cloth, in which to carry soiled linen. Make them all with strong strings of tape which may be used when carrying them. One person can carry all the bags needed for the trip, and you will be surprised to see how much you can carry in them, and how easily.

Have all the box footstools fitted with straps that may be used when carrying them. They will be worth their weight in gold, not only because they are good receptacles for carrying your lunch, but because they add so much to your comfort. One who has had a footstool when traveling will never willingly go without one. If the feet can be raised so that the legs do not rest across the edge of the seat, you will not tire as you otherwise would.

Do not take pie, or anything that can not be carried easily. Jelly to spread on the bread will be found good, and will be better than pie. Apples are always good, but are difficult to take in sufficient quantities. However, they may usually be purchased on the road. Pickles in bottles are always liked. Hard boiled eggs are good for the first two days. Cold boiled sausages are good for about two days. Better get the evaporated milk that comes in small cans—the five cent cans are best. Get the unsweetened. It is very nice for coffee, and you can have it when you might not be able to get real cream. Take a box of lump sugar for your coffee. Get a bottle of beef extract and a can of malted milk. If you become sick on the trip you will then be able to make food that any invalid can take, and it will keep up your strength. A cupful of either, taken just before getting ready for the night, will help induce sleep.

If you take cold easily, have a large silk handkerchief to tie over your head at night. It may save much discomfort. And be sure to take a bottle of camphor and some good remedy for constipation. It may save a doctor's bill.

Hoping these suggestions, all gathered from experience, will be of use to many who can't afford to purchase all the luxuries when traveling, I remain your friend,

RUTH MOTHERBY.

An Important Problem

What to cook and how to cook it. There you have the most trying problem that the average housewife has to solve. And the particularly annoying thing about it is that it never is solved, but bobs up serenely three times a day for 365 days in every year of the ordinary housewife's life. The only way we can live under such dominion is to try to forget it during the few hours each day when it has been put to sleep.

What to cook is to me the hardest part of the problem, because our finances compel economy; but I think there are many who are more troubled to know how to cook it. I don't mean getting it on the table in any old style, but serving it to the very best advantage.

THIS STYLISH NEW CLOAK

$5.98 WE OFFER the newest style in Zybeline Cloaks at about one-third what retail dealers will ask you for them late in the season. Besides ourselves, only the large city stores will be able to show you these new style garments. The material is a regular cloak fabric of excellent quality which closely resembles the finest camel's hair cloth, only it is much heavier, more durable, and warmer, and will be first choice of those who want advanced styles.

This Cloak is a regular $12 retail value, and we will sell the first factory shipment of 2500 to readers of this paper, at only $5.98, to introduce. At this favorable price you will save for yourself about $6.00. We want you to order this splendid garment strictly on its merits. Note that the cloak is sensible in cut, as well as stylish. The body is **genuine Zybeline cloth.** It has a fancy gray chinchilla collar, trimmed with navy blue applique, stitched with white silk. The back of the coat has the new straight line effect. The sleeves are latest set-in style, and the front is the stylish, round cut-away. Facing of the material extends full length of the garment. Without question, the warmest, coziest and most stylish cloak for the money ever offered at anything like this price. We say this without fear of any contradiction.

We Guarantee Every Cloak to Suit.
Our special introductory price for this exclusive garment, in genuine Zybeline, is only **$5.98.** In two colors: Navy or Oxford Gray—state choice. Sizes: 32 to 42 bust. Order No. **G711.**

CHASE'S PONY SKIN
Or CARACUL Cloth COAT $4.95

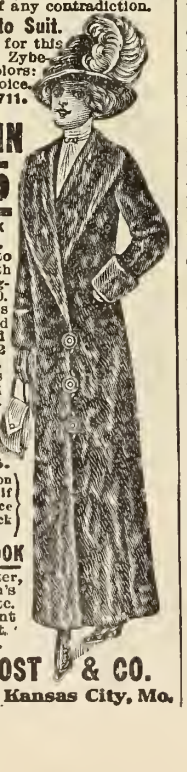
We offer newest styles in Chase's Pony Skin or Caracul **Special Quality Cloth COATS,** guaranteed to be the most serviceable cloth made in this class of goods. Regular retail values $8.00 and $10.00. **Our Price, only $4.95.** This fine coat is made with semi-fitted back, large shawl collar and cuffs of the material. Sizes 32 to 44 in bust. Length 54 inches. Fine mercerized lining. This is a fine coat for the money, and is the popular pony-stripe Caracul you will see everywhere.

Black Only.

DON'T WAIT if you want this big bargain at **$4.95.** Order No. **SX416.**

Either of the above cloaks sent on approval to readers of this paper, if $1.00 accompanies order. Balance payable on acceptance. Money back if not satisfactory in every way.

OUR STYLE BOOK for Fall and Winter, showing Women's Apparel, Shoes, etc. now ready. Sent FREE on request. Send for it today.



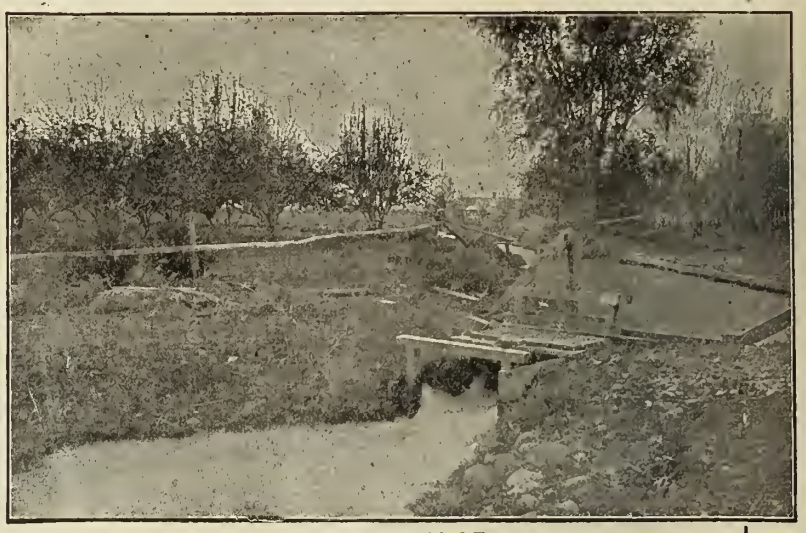
JONES, POST & CO.
886 Hickory Street, Kansas City, Mo.

UTAH

THE WAY TO REACH the Fertile Irrigated Valleys of

Colorado, Utah *and* New Mexico

The Cream of the United States



IS BY WAY OF

The Denver & Rio Grande Railroad

"The Scenic Line of the World"

COLORADO: Valleys in Arkansas, Animas, Eagle River, Roaring Fork, Grand River; Gunnison, Uncompahgre, North Fork, Shenandoah, Paradox, Montezuma, San Luis

UTAH: Valleys in Green River, Price River, Strawberry, Utah, San Pete; Gunnison, Uintah Basin

NEW MEXICO: Valleys in San Juan, Chama, Espanola

CHOICE OF TWO SEPARATE AND DISTINCT ROUTES TO THE WESTERN SLOPE

Special Rates for the Homeseeker and Settler via RIO GRANDE to All Points in the above mentioned sections. For free descriptive booklets, folders, etc., apply to Frank A. Wadleigh, General Passenger Agent, Denver, Colorado.

COLORADO NEW MEXICO

IRRIGATED LANDS

10 DAYS FREE TRIAL

Here's the Lamp You Want

For your home, store, hall or church. The Diamond Automatic Portable Lamp. Gives better light than gas, electricity, acetylene or 20 ordinary lamps. 400 Candle Power. Simplest, most convenient. Costs less and so much better than others there's no comparison. No mantle trouble, no smoke, no odor, no wick, no chimney. Burns common gasoline. Absolutely safe, reliable. Try it FREE. Costs almost nothing to run it. Take the lamp home, use it 10 days. Made to last a lifetime. Guaranteed 5 years. AGENTS WANTED. Write for Special FREE LAMP offer.

DIAMOND LIGHT CO., 10 Diamond Bldg., Kansas City, Mo

In writing please mention The Fruit-Grower and Farmer.

Free to Trappers

Send us your name and address and we will send you a supply of these tags free. Put them on your furs when shipping and your are guaranteed absolutely the best prices.

We are the most liberal fur house in America. **SEND TODAY FOR FREE PRICE LIST.** We Charge no Commission as we are Direct Buyers.

Lotz Bros.,
53 Chestnut St., St. Louis, Mo.

LOTZ BROS. DIRECT BUYERS OF FURS ST. LOUIS MO

SALESMEN Have You a Buggy?

We have a wonderful money-maker for live men—but you must have a rig to handle it. Big sales—big profits—good year 'round. Pleasant, easy, healthy business—just drive around and take orders—best class of farmers and town folks buy—every home needs our goods. Salesmen, Here's REAL CHANCE to cash in on that horse and buggy; $50.00 a week and up. Find out—get our big special offer—Now! Write today for complete facts free. Address **S. D. KRETZER, 2144 DeKalb St., St. Louis, Mo.**

In writing please mention The Fruit-Grower and Farmer.

PATENTS That Protect and Pay
Send Sketch or Model for FREE SEARCH
Books, Advice, Searches and Big List of Inventions Wanted **FREE**
Watson E. Coleman, Patent Lawyer, Washington, D. C.

In writing please mention The Fruit-Grower and Farmer.

To serve food advantageously it must first be properly cooked; then it must be accompanied by other foods that enhance its flavor and also that make a proper balance in the constituents needed in the body and supplied by food. One has to know a great deal to decide that. I suppose that is really a part of "what to cook." I know that the proper selection of foods has much to do with the health. A fine cook can ruin the health of the family by continually serving nitrates or phosphates to the exclusion of other requirements of this physical machine. On the other hand, we may thrive on a simple diet of poorly cooked food, if only it is properly balanced.

I had a lesson along that line some years ago when I was suffering from neuralgia. A friend suggested that I omit meat, tea, coffee, and all food containing nitrates for a time, and eat rye, wheat bran, fruits and foods containing a large percentage of phosphates. I did as directed, and the neuralgia left me. Now, when I feel an attack coming on, I immediately stop eating the food that I feel is responsible, and live on nerve supplying food for a while. and I have very little trouble.

When I was a girl we never thought of such things. We cooked what we could afford, and did it as well as we knew how, which was often not very well. When it ruined our health, we never laid it to the food, but called it a dispensation of Providence and went on in the same old way. Now, one can learn what to cook and how to cook it in many of the colleges. There are even opportunities to take a correspondence course in domestic science that will teach us much along this line and be the best investment we ever made. I wonder why it would not be a good idea to organize a club for the study of domestic science—or several clubs for that matter—and exchange hints and helps as we go along. Won't someone who has the gift of organization take up this idea and put it on a working basis?

AUNT KETURAH.

Association Helps Farmers to Keep Books.

There is a wonderful transformation going on in the methods used in bringing the individual farmer in closer touch with those methods which result in larger and better farm crops. In writing upon this subject a correspondent recently said:

"How often do we see a good attendance at a Farmers' Institute or a demonstration meeting, and although much interest is exhibited, most of the patrons fail to carry any part of the lesson home. A visit to the farms of these attendants shows that although the instruction given was acknowledged of worth at the time of delivery, the same old routine existed because that farmer did not understand it to be of a personal nature and never carried it home."

How many of us are doing exactly as this correspondent mentions? How many of us go to the institute meetings, listen to the lectures, and then go home and forget it all? How many of us are continually of the belief that all of these demonstrations and lectures are for the other fellows and not for us?

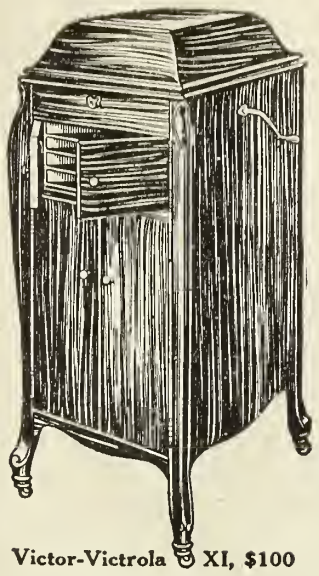
But there is a way to bring home to each individual of us all of these better methods. The "Better Farming Association of North Dakota" is taking a great stride in this direction. The Publicity Bureau of the International Dry-Farming Congress, Lethbridge, Alberta, Canada, publishes an address made by Thomas Cooper, secretary Better Farm Association, Fargo, N. D., before the conference of the committees on agricultural development and education of the State Bankers' Association, Minneapolis, August 7, 1912. In this address Mr. Cooper tells of the latest development of the association's effort to get in the closest possible touch with the farmer. The association has divided the state into a number of so-called "districts," each of which comprises from 400 to 700 square miles, or approximately half a county. Into each of these districts an expert agriculturist was located, whose sole business is to show each farmer the very best methods of handling his soil, growing his crops, and getting better yields from his fields. These men have just one object in view, and that is to make farming more profitable in North Dakota, and to make it more profitable just as soon as possible.

There are many features of the work of this association which could be adopted to good advantage by other similar organizations, but one feature, which is of special interest, concerns the business management of the farm. In speaking of this feature of their organization, Mr. Cooper says:

"Then, to take care of the business side of the farm and to appeal to a number of men that we cannot appeal to in any other way, we have what we call our accounting association. We take care of the accounts of a certain number of farmers in the state. They report to us daily, showing the work they have put on their field, showing the work they have put in on certain enterprises, such as livestock, and the money that they have expended for feed and so forth, and we return to them each month a statement showing the expense of carrying on that herd or that enterprise up to date, the returns that they have had from it, and finally, at the end of the year, showing them the profit and loss account. We do this because we realize that there are a large number of men in whose cases you can appeal to their business interests, and we have found through experience that if we once get a man interested in the business side of his farm and show him where his profit and loss exists that it is not very long before he is going to take up more of these better methods of farming; that it is much easier to talk rotation to a man after he has been convinced that the single crop system is unprofitable from the monetary standpoint. It is much easier to talk cows that will give 6,000 to 8,000 pounds of milk to a man after he has been convinced through his accounts that a 4,000 pound cow is not profitable. It is much easier to get a man to use good seed after you have once shown him the financial difference that exisits between fields where good seed has been sown and where poor seed has been sown."

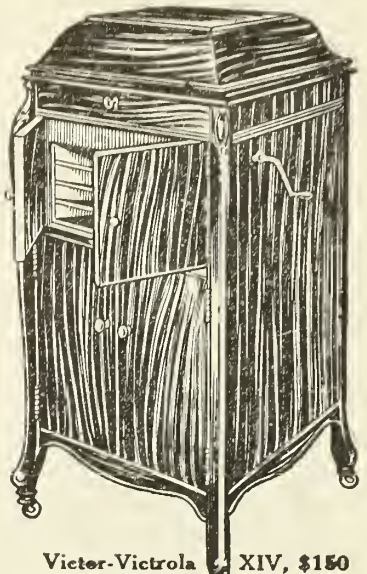
The extension department of the Kansas Agricultural College has established a "clearing house" through which growers and buyers of fruits and vegetables may be brought together. In addition, the agricultural college will send a specialist to any grower in the state who desires it, to show them the best way to pick, pack and grade fruit for market. Geo. O. Greene, horticulturist with the extension department, has charge of this department.

Three new styles



Victor-Victrola XI, $100
Mahogany or oak

Victor-Victrola X, $75
Mahogany or oak
Other styles $15 to $200



Victor-Victrola XIV, $150
Mahogany or oak

The greatest feature about these new instruments is the unequaled tone which has given the Victor-Victrola its supremacy among musical instruments.

There's nothing new about that of course, for this wonderful tone characterizes every Victor-Victrola.

The newness of these three instruments is in the design, and the improvements are really astonishing.

More beautiful, more artistic, more complete—and with no increase in price.

The greatest values ever offered in this greatest of all musical instruments.

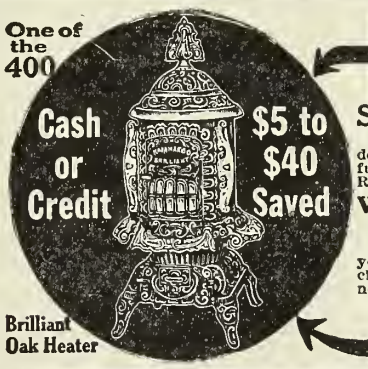
Any Victor dealer in any city in the world will gladly show you these instruments and play any music you wish to hear.

Write to us for the handsome illustrated Victor catalogs.

Victor Talking Machine Co., 23rd and Cooper Sts., Camden, N. J., U. S. A.
Berliner Gramophone Co., Montreal, Canadian Distributors

Always use Victor Machines with Victor Records and Victor Needles—*the combination*. There is no other way to get the unequaled Victor tone.

Victor-Victrola



"A Kalamazoo Direct to You" Trade Mark Registered — And Gas Stoves Too

Shipped Same Day Order is Received

It is not only the saving of money that has given us 200 000 delighted customers. It s the greater beauty, convenience, fuel economy and durability of every Kalamazoo Stove or Range. Also our prompt delivery and liberal treatment.

Write for Catalog of 400 Stoves and 30 Days' Free Trial

Don't pay the middleman $5.00 to $40.00 extra. Let us save you that much. Return a Kalamazoo after a year's use if our claims are not true. What *dealer* will do that? Send postal now for Catalog No. 135, and please mention this paper.

Kalamazoo Stove Co., Manufacturers, Kalamazoo, Mich.
Ask for Furnace or Gas Stove Book too, if interested.

DON'T PAY TWO PRICES

Save $8.00 to $22.00 on

Hoosier Ranges and Heaters

Why not buy the Best when you can buy them at such low unheard-of Factory prices. Our new improvements absolutely surpass anything ever produced. Save enough on a single stove to buy your winter's fuel. Thirty days free trial in your own home before you buy. **Send postal today for large free catalog and prices.**

Address Hoosier Stove Co., 260 State St., Marion, Ind.

Our Classified Advertising Department

For advertisements in this department, of not less than twenty words each, in which no display type is used, we make a special rate of FIVE CENTS PER WORD, EACH INSERTION. If several different advertisements are inserted in the same issue, the charge will be $1.00 for each ad, no matter how small. The first four words of each ad will be set in black type. Every initial and number to count as one word. This department is for the benefit of our subscribers who have anything to sell, including farm lands, fruit farms, dogs, ponies, poultry and eggs, live stock, plants, shrubs, vines, etc. All advertisements for this department must be PAID FOR IN ADVANCE. Count the number of words you send, and remit at rate of 5 cents per word, stamps, currency or money order. This is considerably less than our display rate, and offers a splendid opportunity to reach our readers at a low figure. Send a trial advertisement with remittance at rate of 5c a word THE FRUIT-GROWER, St. Joseph, Mo.

Helps Sell Apples.

The "big red apples" of Kansas have established a reputation all over the country. Buyers in nearly every state in the Union have written to the fruit clearinghouse at the Kansas Agricultural College asking for names of growers in this state. And Kansas apple growers, with hundreds of carloads of the finest apples the state ever has produced, are getting in touch with these buyers through this bureau. The clearinghouse, a department of the extension service of the agricultural college, finds buyers for the growers and growers for the buyers.

One grower in Linn County asked for help to sell fruit from a 1,200-acre orchard another from Nemaha County reported 70 acres of apples for sale; others report from 300 to 6,000 bushels of first grade apples. The growers were advised to sort and grade carefully and store the best apples for the fancy market.

"There never will be a surplus of fancy, good keeping apples," said George C. Greene, horticultural specialist in charge of the clearinghouse, today. "We advise the grading of apples in nearly every case. Buyers from the appleless sections of this state and from nearly every other state have been inquiring about Kansas apples. The demand this year will stand next to the demand for Kansas hard wheat flour. I believe our clearinghouse is solving the great market problem of the Mississippi Valley fruit grower without the expense of a great central selling association. The result of this central market place will be the appearance of Kansas apples in every market in the country as well as in the markets of many foreign countries."

Our Feathered Friends.

The fight of the birds against the insects to save the farmer's grain and the fruit grower's fruit goes vigorously and unceasingly on, while the battle of bird lovers and Audubon societies to save the birds, waxes and wanes. Enough warnings have been voiced by the press to 'spare the birds," and enough legislation enacted by lawmakers, that it would seem every citizen of our country and every boy and girl in the land ought to be wide awake on this subject, and on the right side in this unequal strife. In spite of the efforts of both man and bird to subdue or at least hold in check insect pests, many kinds are on the increase.

Every one of our common birds are insect eaters, and in procuring their natural food destroy thousands of insects and thousands of eggs of insects.

Robin, wren, bluejay, redbird, bluebird, Bob White, larks of several kinds, sparrows of three or four kinds, phoebe, woodpecker, thrush or thresher, catbird and many other species of birds frequent our orchards and groves, and if given adequate protection from cats and mischievous boys, would be much more numerous than they are, and would put up a more equal fight against the common enemy. It is true the birds get a share of the fruit in its season and in some localities, especially the cherry districts, they are quite destructive to the fruit crop; yet in general the good the birds accomplish in destroying insects probably exceeds by tenfold the loss they cause by the fruit they eat.

Then let us all pull together to save the birds. Many species of our Missouri birds have become extinct or left the state. Some authorities say sixty species. Several other kinds are becoming rare. Shall we let them go, or shall we try to keep them? Boys and girls, love the birds; fathers and mothers, teach your children to love the birds. Point out the different varieties to them as they come under their notice and teach them to know each kind by its song. If children get a start in the right direction in this respect while small, they will grow up to feel that the birds are their friends; and many a time in middle and older life they will be cheered and made glad at the sight of the bright plumage and the sound of the sweet songs of the faithful friends.

WINN COMBS.

As soon as the leaves are off the fruit trees is time to begin spraying for San Jose scale. Lime-sulphur is the best remedy. This can be bought from several of our advertisers, or you can make your own with but little trouble. It is a time saver to use the commercial brands, as they are more convenient. Fall spraying with lime-sulphur is good insurance for your trees, whether they have the scale or not. The scale is so small, that it may find its way into the orchard, and be present for a year or so before it is discovered. Locking the barn after the horse is stolen is a poor policy. So is waiting until the scale is in your orchard before you begin spraying for it.

Late celery is most delicious when dug with a ball of earth and packed away in a dark, cool cellar. In two or three weeks the hearts are the most delicious vegetables imaginable.

POULTRY DEPARTMENT

Sheppard's Famous Anconas. The world's best. single or rose comb. First at world's greatest shows, including London, England; Madison Square, and Cleveland. Greatest egg record, 256 average. Catalogue free. Cecil Sheppard, Berea, Ohio. President International Ancona Club.

R. C. W. Leghorns—Pekin ducks. Yearling males and females for sale at prices that will move them Bred from Chicago, Minneapolis, Oshkosh, Fond du Lac winners. Circular. Joseph H. Kitchen, El Dorado, Wisconsin.

Light Brahmas. Winners at Kansas City, Mo; Unionville, Mo. Centerville, Iowa, and elsewhere. Show birds and choice breeders for sale at reasonable prices. Get our prices. K. I Miller, Box G, Lancaster, Mo.

By carefully mating the very best stock obtainable, I have produced a high-scoring winter-laying strain of Partridge Wyandottes. Stock and eggs for sale. W. E. Brockelsby, Lawrence, Kansas.

For Sale—Some choice S. C. W. Leghorns, B. P. Rocks and Mammoth W. H. turkeys. Winners at leading shows. Southern Slope Poultry Farm, Box A, Jacksonville, Ill

Ninety young thoroughbred Rose Comb Reds Utility, breeding, exhibition, layers. Indian Runners, Fawn. White. Quick sale, bargains. Allesthouse, Trenton, Mo.

White Indian Runners. Some extra fine ducks and drakes for sale at reasonable prices A few good pens at $20 00. K. I. Miller, Box G, Lancaster, Mo.

Indian Runner Ducks—Fawn and white or penciled stock for sale, $1.50 to $3 each. J. W. Fretz, Bosworth, Mo.

S. C. B. Leghorns—600 hens for sale at a bargain. R. Hendricks, Washburn, Ill.

FARM LANDS FOR SALE

Arkansas

Famous Springdale Fruit District. Why pay prohibitive prices for raw Western fruit lands when we have ideal orchard lands at $30 acre up—money-making orchards at $50 acre up? 80 acres, close in—good improvements; 15 acres bearing apple, 15 acres peaches, 4 acres strawberries, balance timber and strong grain land. $6,000; include $1,000 apple crop, for quick sale. Free list. Fredricks, Springdale, Washington Co., Ark

Fruit, poultry and general farm: 40 acres, 2 miles from Hiwasse, 1-4 mile from school and church 6 acres good 8-year-old apple orchard, 5 acres cultivation, balance virgin timber This is all the best of fruit and general farm land and all lies fine and tillable. No buildings. Price $1,000, $200 cash and balance on your own reasonable terms. Banks & Adcock. Hiwasse, Ark.

For Sale—1,000-acre Arkansas stock farm, good improvements, 300 acres bottom land, about 200 in cultivation, good fencing and good house. Price $10,000, on terms Polk Real Estate Co., Little Rock, Arkansas.

For Sale—At a bargain. Equity in Oregon apple orchard. Small cash payment, balance runs through eight years. This is a snap; investigate it. W. B. Stark, Rogers, Ark.

Orchard For Sale—120 acres in Arkansas fruit belt; 3,400 trees. Fine community. Telephone, mail route. Near good railroad town. Write Charles Thompson, Pottsville, Ark

Grow strawberries for early Kansas City markets on cheap land in Arkansas. "Homeseekers Guide" free. Porter Land Co., Horatio, Ark.

Arizona

For Sale—A nine-acre deciduous fruit orchard, one mile out of Phoenix Arizona. Part in bearing, house, stable Address Geo. M. Smith, Bide A Wee Place, Phoenix, Arizona.

Cuba

Rich soil, ideal climate. Abundant rainfall, best transportation; 20 acres, $600, $10 monthly Map and literature free. S. O Sanderson, 184 Palace Bldg., Minneapolis, Minn.

Illinois.

Fruit Farm For Sale. 8,000 bushels apples on it now. Would like to sell in orchard. Buyers, come or write for particulars. R. M. Denson, Ursa, Ills.

Twenty acres—Five acres strawberries, 500 fruit trees; best of local markets. For last five years strawberry crop sold for 11 to 14 cents per quart. Full particulars on application. R. M. Sears, La Grange, Ill.

Iowa

For Sale—40 acres fruit farm in Van Buren Co., Iowa. For particulars, write J. F. Loomis, Douds Leando, Iowa.

Missouri

Dairy farm and orchard for sale. Large apple, pear and pecan orchard; eight thousand barrels this year, ideal for fruit, vegetables, dairying and farming. Close to station; 38 miles from St. Louis. J. F. Rauch, St. Charles, Mo.

160 acre stock and fruit farm, $35 per acre: 100 in bottom, 60 in cultivation; good spring, 3-room house, on public road. Write owner. W. A. Estes, Wappapello, Mo.

Bearing orchards our specialty. Great Ozark district. We sell farms everywhere. Wonderful new copyrighted plan. Read these bargains. 20 acres choicest suburban orchard home; apples, peaches, plums, small fruits; 5-room house one mile to town. Only $7,500 cash. Eighty acres fine bearing apple orchard; large part the fancy priced York Imperial. Good house and barn; only 2½ miles from city. One good crop should pay it clear. Only $8,500. Hundreds more. Write us today. Farmers' Co-operative Realty Co., 113 Jefferson Bldg., Springfield, Mo.

North Carolina

Come South. Mountain section, altitude 2,250 feet. Mild winters, cool summers. Dairying, fruit growing, diversified farming. Cheap lands. Information Bureau, Hendersonville, N. C

Oregon

City orchard in Oregon. One of the very best apple orchards in the famous Rogue River Valley, sunny southern Oregon. Three acres of 20-year-old Newtowns and Spitzenburgs in perfect condition, $2,000 crop in 1909. Five blocks to school and church, three more to business district. Best residence city on the coast. Mountain water and scenery. Splendid climate, no saloons, 5,000 population. Refer to T. F. Smith, fruit and orchard inspector, or C. H. Gillette, president fruit association. Price with crop, house and half acre adjoining, $7,500 O. H. Barnhill, Ashland, Oregon.

Get away from the cold winters, hot summers, tornadoes, sunstrokes, blizzards, electrical storms, to a place where they do not occur. Hood River is free from all these conditions. Our scenery unsurpassed, our roads macadam and oiled, ranches electric lighted, good water, we are close to Portland, our fruits command the top price, we are up to date. Send for our printed list of large and small ranches and literature. Guy Y. Edwards & Co., Hood River, Oregon.

Willamette Valley grows any kind of crop successfully without irrigation; mild climate, no droughts, lightning or cyclones. For full information write to Commercial Club, Albany Oregon.

Virginia

Look ahead five years—What's in store for you? Would a pretty home in absolutely healthy climate and comfortable living income every year appeal to you? One of our ten-acre apple orchard tracts, planted with 500 apple trees—which will cost you a few dollars now and small payments monthly—will insure your future home, income and happiness. Write now for descriptive Book 1, Shenandoah Valley Apple Lands Company, Waynesboro, Virginia.

Washington

The Walla Walla Valley has never experienced a cyclone, tornado, hurricane or blizzard, crop failures are unknown, abundant opportunities for successful investments. Write for information regarding fruit growing, truck gardening, dairying and poultry raising. Ask for beautiful free illustrated booklet C, Commercial Club, Walla Walla, Washington.

Washington fruit farm for sale, or will exchange for something at higher altitude. Ten acres, all in fruit, except 1½ acres alfalfa. Trees six years old, small fruit and asparagus between rows. High state of cultivation, good crop on trees. Write for description and particulars A. M. Russell, Kennewick, Wash.

MISCELLANEOUS FARM LANDS

Mississippi, Alabama and Florida farms, highly productive, harvesting something every month in year, where winters don't consume what summers produce; healthy, delightful climate, low prices, easy terms. Land salesmen wanted Big commissions. American Land Company, 1208 Boyce Bldg., Chicago.

REAL ESTATE AGENTS

Cash for your farm or business I bring buyers and seller together. No matter where located, if you want to buy, sell or exchange any kind of property, anywhere, address Frank P Cleveland, 994 Adams Express Building, Chicago, Ill

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace Bldg., Minneapolis, Minn

Sell your property quickly for cash, no matter where located. Don't pay big commissions. Particulars free. Real Estate Salesman Co., Dept. 28, Lincoln, Neb.

MISCELLANEOUS

Free—"Investing for Profit" magazine. Send your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine. It is worth $10 a copy to any man who intends to invest $5 or more per month. Tells you how $1,000 can grow to $22,000. How to judge different classes of investments, the real power of your money. This magazine six months free, if you write today. H. L. Barber, publisher, R134, 20 W. Jackson Boulevard, Chicago.

Consulting horticulturist—J. F. Littooy, Boise, Idaho. Directs orchard operations. Investigates orchard values and operations. Expert for counsel at law.

Free illustrated book tells about over 360,000 protected positions in U. S. service. More than 40,000 vacancies every year. There is big chance here for you. eure and generous pay. lifetime employment. Easy to get. Just ask for booklet A 802. No obligation. Earl Hopkins, Washington, D. C.

Buy no barrel caps until you get a sample of the Appco Snipsafe cap. The deep, close corrugations make them much better for either top or bottom. Write for sample, stating about how many you will use. American Paper Products Company. 300 Bremen Ave., St. Louis, Mo.

Young Man, would you accept and wear a fine tailor-made suit, just for showing it to your friends? Could you use $5.00 a day for a little spare time? Perhaps we can give you a steady job. Write at once and get beautiful samples, styles and this wonderful offer. Banner Tailoring Co., Dept. 739, Chicago.

For Sale—In orchard or delivered on track, 15 to 20 cars of sprayed apples, by The Flat Creek Fruit Growers' Association. A. Frost, Sec'y, Cassville, Mo.

Wanted—Colonists for a co-operative colony in Tennessee. H. E. Sawdon, St. Elmo, Tenn.

For Sale—Hog waterers that won't freeze. Wm. Menefee, Atlantic, Iowa.

NURSERY STOCK

Genuine Nehalesco!—The wonderful, delicious, greenish golden amibered 20 pound bench Valley of Eschol, and other best in the world Edenic location grape vines, grafted on phylloxera resistant roots; $5 each. You can grow them outdoors. Write for information. Order now. Supply on hand is limited. Henry Lee Owens, Burlington, Iowa.

To introduce stock, we will send 10 Yellow Transparent and 10 Jonathan, first-class, one-year apple trees, for $1. Catalogue free. Parker Bros., Fayetteville, Arkansas.

Make $25,000 in spare time. Raise Golden Seal. Circular free. Bowman Gardens, Albany, Wisconsin.

Walter Chappell, rhubarb specialist, Chanute, Kansas.

DOGS AND PET STOCK

Beautiful Scotch Collies, pedigreed. Best breeding, alert, obedient, faithful and refined. Perfectly golden. Sable and white. Female pups, $6 and up. Satisfaction guaranteed. Oakdale Collie Kennel, Missouri Valley, Iowa.

For Sale—Scotch Collie puppies from imported and registered stock. Every fruit grower should own a Collie and for a good one should write D. B. Rice, Marcellus, Mich.

10,000 Ferrets For Sale—Write for price list and catalogue; it's free. Do Kleine Bros., Jamestown, Michigan Box 12.

LIVE STOCK

Milch Goats—Swiss and Spanish breeds. G. H. Wickersham, 1244 St. Francis Ave., Wichita, Kansas.

HONEY

Finest quality new clover honey in thirty-pound cans; price for one can, $3.45; two or more cans, $3.30 each. Sixty-pound cans, $6.30 each. Send for price list. M. V. Facey, Preston, Minn.

SPORTING AND TRAPPING MAGAZINE

Fox and Hound and Trapper's World—Monthly magazine about hunting, trapping, outdoor life and dogs; has good Beagle and Pit Bull departments; sample free; $1 00 per year. Address Fox and Hound, Desk F.-G., Decatur, Illinois.

SITUATION WANTED

Wanted—By man with small family, a position as manager on fruit ranch or hay and grain ranch; thoroughly understands either, including stock and machinery. Am 25 years old, sober and energetic, have eight years experience of actual ranch work. Prefer Colorado or the Northwest. Please give full particulars in first letter. R. S. Dreher, Clifton, Colo.

Situation, by young man of considerable experience in fruit growing. Would like place with chance of advancement and where ability counts. Will be open for engagement January 1, 1913. References T. B. S., care Fruit-Grower and Farmer.

AGENTS WANTED

Wanted—Agents, male or female, to sell our new book, just from the press, "How to Make a Dollar Stretch." Big profits. Sample copy, 144 pages, illustrated, 50 cents in stamps, postpaid. Address F. M. Van Etten & Co., publishers, Buffalo, N. Y.

Wanted—Local agents, in every city and village in the United States, to sell a first-class household article. Sells for one dollar. Agents double their money. Write today to F. M. Van Etten & Co., Manufacturers, Buffalo, N. Y.

PATENTS

Valuable Free Book on Patents, telling how to protect and turn your ideas into gold; sent free. Fitzgerald & Co., 821 F St., Washington, D. C.

Don't Wear a Truss

FREE STUART'S PLAS-TR PADS are different from the truss, being medicine applicators made self-adhesive purposely to hold the parts securely in place. No straps, buckles or springs—cannot slip, so cannot chafe or compress against the pubic bone. The most obstinate cases cured. Thousands have successfully treated themselves at home without hindrance from work. Soft as velvet—easy to apply—inexpensive. Awarded Gold Medal. Process of recovery is natural, so no further use for truss. We prove what we say by sending you Trial of Plapao absolutely FREE. Write TODAY.

TRIAL OF PLAPAO

Address—PLAPAO LABORATORIES, Block 220 St. Louis, Mo.

NEVER BEFORE

PROBABLY NEVER AGAIN SUCH WONDERFUL BARGAINS

S-M-A-S-H Go Roofing, Wire, Lumber, Building Material Prices!!!

SPECIAL

This advertisement illustrates six of our leading complete House Designs.

Our building proposition is the most wonderful ever presented. We furnish the material needed to construct any of the houses illustrated for price quoted.

All material guaranteed brand new, exactly as represented. Our guarantee noted elsewhere in this advertisement is so broad and binding, that you cannot possibly make a mistake when you deal with us.

No money down—not one cent of cash in advance. We will ship you a complete carload of building material, or all the material needed to reproduce any of the designs shown in this advertisement, and you need not pay us a single penny of the money until the material reaches destination, and you have found it in accordance with our representations.

Ask for our Special Building Terms. Our offer is the most wonderful ever published. Our Book of Plans contains 96 designs of modern homes, bungalows, barns and buildings; mailed free. Fill in coupon.

The Chicago House Wrecking Co., has been in existence 20 years and has offered remarkable bargains and sold millions of dollars worth of merchandise and supplies.

Our prices have always been lower than anyone else has been able to quote, but for this great Fall and Winter sale we have literally "smashed" and "busted" prices—absolutely the lowest prices ever offered in the history of merchandise and building lines.

Our Company is known as the World's Bargain Center, and as the great "Price Wreckers", and if you want to see exactly how we earned these titles, write today for some of our remarkable "Price Wrecking" literature. Fill in the coupon below and we will send you any of these books without any obligation of any kind.

Don't you buy a single thing until you have written for our wonderfully low prices—you will be surprised at our prices on every single article needed to build, construct or improve; also for articles in the household and furnishing goods line. Our stock includes practically everything "under the sun". Even if you have no intention of buying now, get in line with us just the same. Send for our literature and be prepared to take advantage of money-saving opportunities that will probably never again occur.

We will sell you a carload of building material without one cent deposit. We know full well that our goods will give satisfaction, and if we had the least doubt of the quality, we would not dare to make this remarkable offer.

YOU CAN BUY A CARLOAD OF BUILDING MATERIAL WITHOUT A CENT IN ADVANCE

GUARANTEE

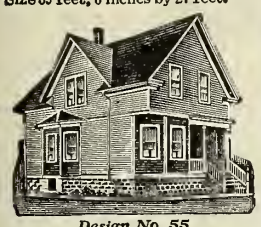
The nature of our guarantee is so broad and binding that no one can possibly go wrong in dealing with this company. Our capital stock is $2,000,000. We have been in business for 20 years, and our honest dealings of the past has earned for us hundreds of thousands satisfied customers and friends.

If you buy goods from us, and they are not satisfactory in every way, we will either take back such unsatisfactory merchandise and refund the full purchase price, or will make satisfactory adjustment. Should our goods fail to come up to our representations we not only take them back, but will pay freight charges both ways; you are to be the judge. We want to enjoy your fullest confidence and we will gain it by giving you a square, honest deal at all times.

We refer you to the publisher of this or any other paper; to any bank or banker; to any express company and to the mercantile agencies; they all know us, and will attest our honesty and uprightness.

Design No. 117

$635 Six Rooms and Bath. A Modern Bungalow. Excellent Interior. Size 39 feet, 6 inches by 27 feet.



Design No. 55

$655 Six Rooms and Bath. All rooms convenient and roomy. Size 22 feet by 31 feet.

Design No. 134-A

$858 Eight rooms and bath. Splendid porch; every convenience. Size 30 feet by 30 feet.

Design No. 50

$872 Eight rooms and Bath; very attractive exterior. Five closets. Airy balcony. Size 28 feet by 28 feet.

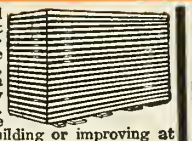
Design No. 131-A

$877 Eight rooms and bath. Ample closets; an exceptionally well designed house. 28x28. Large porch.

Design No. 53

$960 Seven Rooms, Bath, Large Living and Main Bedroom. Modern in every respect. Size 27x36 ft.

LUMBER



Prices smashed. Yes, absolutely busted to pieces. Notwithstanding the fact that lumber prices are higher than ever before in the lumber and building material industries, our quotations are the same as previously offered by us. Send your building material list, and we will name you a freight prepaid estimate which will mean a a decided saving to you.

Every stick of lumber is brand new; quality guaranteed exactly according to the Manufacturers' Official Grading. You will find it better than the same grades handled by anyone in the United States. We can fill your entire order for every item used in building or improving at one time, from our headquarters in Chicago. No one dare duplicate this statement.

Our proposition is open-and-above-board. Do not be confused by anyone's prices unless they can tell you the same as we do, that the entire order is shipped from Chicago in one carload.

MILLWORK

Nothing better manufactured. Every article guaranteed absolutely brand new and in accordance with our descriptions and representations. For the Fall of 1912, we are offering some remarkable bargains, for instance:

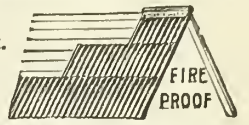
Lot SM-39—4-panel painted Door, 2-ft. 6-ins. by 6-ft. 6-ins. at 98c. Screen Doors, at 86c each. Lot SM-22—161 doors, 2-ft. 6-ins. by 6-ft. 6-ins., 1⅜-ins. thick, 2 panels below, 4 lights above, similar to our "Rockbottom" glazed $1.80 Lot SM-23—188 Doors, same as above, except 2-ft. 8-ins. by 6-ft. 8-ins. $1.85 Lot SM-149—1,200 Solid Turned Porch Columns, 5-ins. diameter, 8-ft. long, clear fir, each 90c. Lot SM-150—800 Porch Columns, same as above, except 6-ins. diameter, 10-ft. long, each $1.50. Lot SM-112—177 Windows, 12-ins. by 36-ins., 1⅜-ins., 4 light check rail, glazed, S. S. A. glass $1.20. Lot SM-122—190 Windows, 24x36, 1⅜-ins, 2 light check rail, glazed, S. S. A. glass $1.28. Lot SM-102—70 Doors, 2-ft. 6-ins. by 6-ft. 6-ins., 1⅜-ins. thick, 3 cross panels below glass, 1 cross panel above glass, D. S. A. similar to our "Poppy" painted $1.80. Lot SM-133—91 Front Doors, 2-8x6-8, 1⅜-ins. thick, 3 panels below glass, No. 2 Western Pine Glazed, D. S. A. similar to our "Tulip", price $2.00. Lot SM-144—72 Front Doors, 2-8x6-8, 1⅜-ins. thick, 4 panels below glass, made with 12-ins. top rail and extra heavy bottom rails, glazed, D. S. A. No. 1 White Pine $3.50. Our Building Material Catalog will save you money on all purchases. No one can compete with us. Write for your free copy today.

Galvanized Roofing

Fire, Water and Lightning Proof

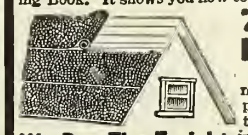
We bought 20,000 squares of this **Corrugated Iron Roofing** which we offer at this remarkably low price. It is new, perfect and first-class in every respect, but light weight. The sheets are 22x24x1¼ inches corrugated. Our price of $1.25 per square is not freight prepaid, but F. O. B. cars Chicago. When ordering this item, specify Lot No. AD-700. This is not galvanized, but black steel roofing.

$1.25 Per 100 Sq. Ft. Buys best Steel Roofing



Outlasts Any Other Kind

Write us today for our special **FREIGHT PREPAID PRICES** on new, galvanized roofing. We are offering prices lower than anything ever offered in the roofing business. Galvanized roofing is $2.50 per square and up. Write for free samples and mail coupon below for a copy of our *Roofing Book*. It shows you how to save money on all your Roofing, Siding or Ceiling purchases.



75c Per 108 Sq. Ft. Buys Best Rubber Surfaced "Ajax" Roofing

Here, again, we show the lowest price ever known for roofing material. This smooth surfaced roofing we are offering is our one-ply "Ajax" brand, and the price includes necessary cement and nails to lay it, and at this remarkably low price

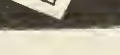
We Pay The Freight in full to any point east of Kansas and Nebraska and north of Ohio river. We also furnish 2-ply at 90c, 3-ply at $1.05. This "Ajax" roofing is guaranteed to wear as long and give as good service as any Ready Rubber Surfaced Roofing on the market. It is put up in rolls of 108 square ft., and contains 3 or 4 pieces to the roll.

We have other grades of Ready Roofing which we offer at prices easily 30 per cent below regular quotations. Samples free. Get our free Roofing Book before buying roofing of any kind.

Barb Wire, Less Than 2c Per Rod

New, galvanized, heavy weight Barb Wire, put up on reels about 100 lbs. to the reel. Lot 2-AD-26, per 100 lbs. $1.95.

Galvanized Barb Wire, light weight, first grade, best made, put up exactly 80 rods to reel, 2-point barbs. Lot 2-AD-28, reel $1.40.



Never before have such low prices been offered on Barb Wire. Now is the time to place your order while our stock remains.

Smooth Galvanized Wire

Per 100 Pounds, $1.25

Suitable for fences, stay wires, grape vines or for any ordinary purpose where wire is used. This galvanized wire is irregular in lengths—from 50 to 250 ft. $1.25 is our price for No. 6 gauge. Other sizes in proportion.

Combination Tool, $2.85

Anvil, vise, pipe cutter, drill and hardie combined in one tool. Easily adjusted; vise jaws open 6 ins. width of jaws 3½ ins.; top of anvil case hardened; jaws of vise faced with case hardened steel. Lot 4-AD-101, price $2.85. Just the tool you've been looking for. This price means a material saving if you buy now; only 250 in stock.

Galvan'd Steel Tank, $2.50

Capacity 1¼ bbls. heavy, 20 gauge galvanized steel, round end tank, strongly braced and guaranteed. Only 100 in stock. Lot 4-AD-100, $2.50 each; others from 2½ to 50 bbls., at correspondingly low prices. Washington Firstock or storage tank, heavy flat, galvanized hoops and lugs, 4 ft. diam. by 2 ft. high, 1.3 gal., $6.57. Lot 4-AD-102. Others up to 10,000 gallons.

Handy Bolt Assortment 45c

Consists of 17 lengths and sizes, ⅜ to 5-ins. long, ¼, 5-16 and ⅜ in. diameter, including nails, bolts, etc. Well cut threads. A fine, handy assortment for every farmer, mechanic or blacksmith. Lot 4-AD-103, price 45c.

750-Piece Assmort', 50c

Greatest bargain ever offered—will pay for itself many times over in a year. Contains carriage, machine, tire and plow bolts; flat and round headed screws; flat, round button and cone head steel rivets; flat and round head brass rivets and washers—750 pieces. Lot 4-AD-105, price 50c.

Best Quality Premier, Michaelson Ready Mixed House Paint, Per Gallon $1.05

Our paint department is under the personal supervision of Mr. V. Michaelson, for 30 years the foremost paint man in America. His picture has appeared on over 8,000,000 cans, and his name is known from ocean to ocean. Paint of quality is his specialty. Every gallon has our strongest guarantee. Our Ready Mixed Barn Paint at 67c per gallon will outlast any similar paint produced. If you want quality paint, write us; or write to Mr. Michaelson if you prefer. Finest, most valuable paint book ever published sent FREE. Send coupon.

PLUMBING

$26.50 Buys This Complete Bath Room Outfit

Here is a saving to you of 50%; a high grade, perfect white enameled bath tub, 5 feet long, all nickel plated trimmings, including double bath cock for hot and cold water; lavatory of latest design, with high one piece back, all white enameled, big size, nickel plated basin cocks, nickel plated trimmings.

Closet is latest, most sanitary Syphon acting, vitreous closet bowl; hardwood seat and cover, nickel plated hinges; fitted with hardwood, copper lined, low down tank, latest style, easy working, noiseless working outfit. Easily worth $50, but for this great Fall Sale we have literally cut the price in two. When you order this outfit, mention Lot 5-AD-100.

$13 Buys Complete Bath Tub

White enameled, cast iron, one piece, heavy roll rim bath tub 5 feet long; fitted with latest style, nickel plated trimmings, including Fuller double bath cocks for hot and cold water, nickel plated connected waste and overflow, and nickel plated supply pipes.

In ordering, mention Lot 5-AD-101.

$6 Buys Complete Wash Stand

Finest enameled, cast iron, one piece lavatory built; graceful in shape; can be furnished either for straight wall or corner of room; trimmed with best nickel plated fittings. Lot 5-AD-104, price $6.00. 40 other styles at proportionately low prices.

$8.50 for a High Grade, Sanitary, Complete Closet

We have 200 of these outfits. Closet bowl latest sanitary construction, syphon acting, vitreous bowl, fitted complete with hardwood seat and cover, with nickel plated hinges. Low down, latest style, copper lined tank. Outfit is Lot 5-AD-105. Write for prices on other styles, also our Plumbing and Heating Catalog.

Enameled Sink at 75c

One piece, seamless Kitchen Sink, blue enameled inside and outside, size 18x30 or 18x36. Price includes strainer and collar to make connections. Lot 5-AD-106, price 75c. At $14 we furnish you latest and most sanitary, white enameled, full length, one piece Kitchen Sink; back, drainboard and end piece all cast in one piece. Fitted with nickel plated faucets for hot and cold water and trap to floor. Finest outfit manufactured.

Write today for Free Plumbing Catalog. Fill in coupon below.

$42 Buys Water Supply Outfits

This wonderful offer means that any man can obtain city comforts at a trifling cost. So simple that any man with ordinary intelligence can easily install it. An up-to-date air pressure outfit, every part guaranteed. Can be furnished with either vertical or horizontal tank. At this price we include our special Chicago Air Pressure Tank, capacity 145 gals. with our special combined air and water pump, double acting, with brass lined cylinder. Also includes all necessary gauges, valves and connecting fittings, together with necessary pipe cut and threaded to connect pump to tank.

Our plumbing experts will give you information covering any phase of water works or plumbing quotations. We have specially prepared literature which we mail you without any obligation of any kind. Even if you have no immediate intention of purchasing, write us at once and let us make you a proposition.

Heating Plants

For this great Fall Sale we are offering a warm air heating plant large enough for the ordinary 5-room house, with all necessary blue print plans and complete instructions for installation of same for $45. Send us your sketch and give us information as to the construction of your building and we will make you a quotation on any kind of heating plants, steam, hot water or warm air. Every heating plant sold under a broad and binding guarantee of 365 days free trial. Write for a copy of our Heating Catalog containing information of priceless value.

15-Gal. Feed Cooker $4.32

Jacket extra heavy steel; kettle best quality, gray cast iron. Fire and smoke pass around kettle before going into smoke stack, bringing entire bottom of kettle in contact with flame—a quick cooker. Guaranteed to hold actual number of gallons specified. Big door permits large chunks of fire wood. 4-C-1999, 15 gallon, $4.32; cover, 57c extra. Other sizes to $13.58.

Heavy Hand Lift Pump

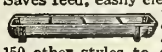
$2.05 Best, strongest pump made, suitable for wells of any depth. Revolving head, hand can be operated at any angle. 6-inch stroke, fitted for 1½-inch pipe, strong iron brace. Price quoted is without cylinder. Lot 4 AD 106. Write today for Special Pump List—free. We have a complete line of Pumps for every purpose.

Circular Cord Wood Saw

$2.90 Made for use on cord wood and pole sawing machines. Special grade of steel—best wood saw made. Filed, set and sharpened ready for use; 20-ins. diameter, 13 gauge, 1⅜-in hole. Lot 4-AD-107. Other sizes at correspondingly low prices. Also high grade Premier Circular Saws and Premier Inserted Tooth Circular Saws in all sizes. Write us your needs whether for circular, two-man, or one-man saws.

Indestructible Hog Trough

$1.95 Strongest and best made; ⅛-in. thick, can't break. Saves feed, easily cleaned; length 5-ft., width 12-ins. depth 6-ins. Lot 4-AD-108. Over 150 other styles to select from at prices cheaper than common kind.

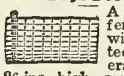


Complete Hay Carrier Outfit

$7.92 Consists of a double swivel Hay Carrier; 12 rafter hooks 4 floor hooks, 12 hanging brackets, 1 short tine double harpoon hay fork, necessary pulleys 100 ft. ¾-in. manila rope, 40 ft. ⅝-in. manila sling rope. Designed to run on wood track which you can make. Lot 4-AD-109, Price $7.92.

This is one of 30 different outfits described in the special circular just issued. We save you from 20% to 50% in the purchase of these complete outfits. We carry all kinds of appliances, tracks, hooks, forks, pulleys, cable, etc. Write for complete information.

15c Per Rod Buys Best Hog Fencing



A high grade, perfect fence, No. 9, 11 and 12 wires, perfectly adapted for hogs and general farm purposes. 26-ins. high, square mesh. Lot 2-AD-31, per rod 15c. Other heights in proportion. Full stock Poultry Fencing, Gate and Lawn Fence and everything in the wire line.

Galvanized Fence Staples, $2.00 per keg of 100 pounds.

Wire for reinforcing concrete, crimped, just the thing for making fences or other general purposes. All gauges from 6 to 14, cut to length in bundles of 100 pounds.

Lot 2-AD-32, price per 100 lbs. $2.25

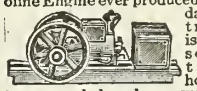
Wire Nails, Per Keg, $1.50

10,000 kegs, put up in 100 lbs. to keg, mixed all kinds, regular, such as made by factories. Lot 2-AD-33, per keg, $1.50.

1,000 kegs of 10 penny-weight, regular new wire nails, 100 lbs. to keg, per keg, $2.00, while they last.

1½ H. P. Gasoline Engine

$24.75 The lightest, strongest and most compact Gasoline Engine ever produced. Thirty days' free trial. It is 4-cycle, self-contained, horizontal, hopper cooled; on heavy wood skids, with battery box; shipped complete; weight 250 pounds. Has automatic governor, easy to start. Send for Special Gasoline Engine Catalog.



Iron Pipe

Rejuvenated Pipe complete with threads and couplings, suitable for gas, oil, water and

conveyance of all liquids. 1¼-inch, per ft. 4c. 1-inch per ft. 3c. Use coupon below.

CHICAGO HOUSE WRECKING CO., Dept. N-22, CHICAGO, ILL.

Mail This FREE Coupon Today

Chicago House Wrecking Co., Dept. N-22 35th and Iron Sts., Chicago

I am interested in the following:.....

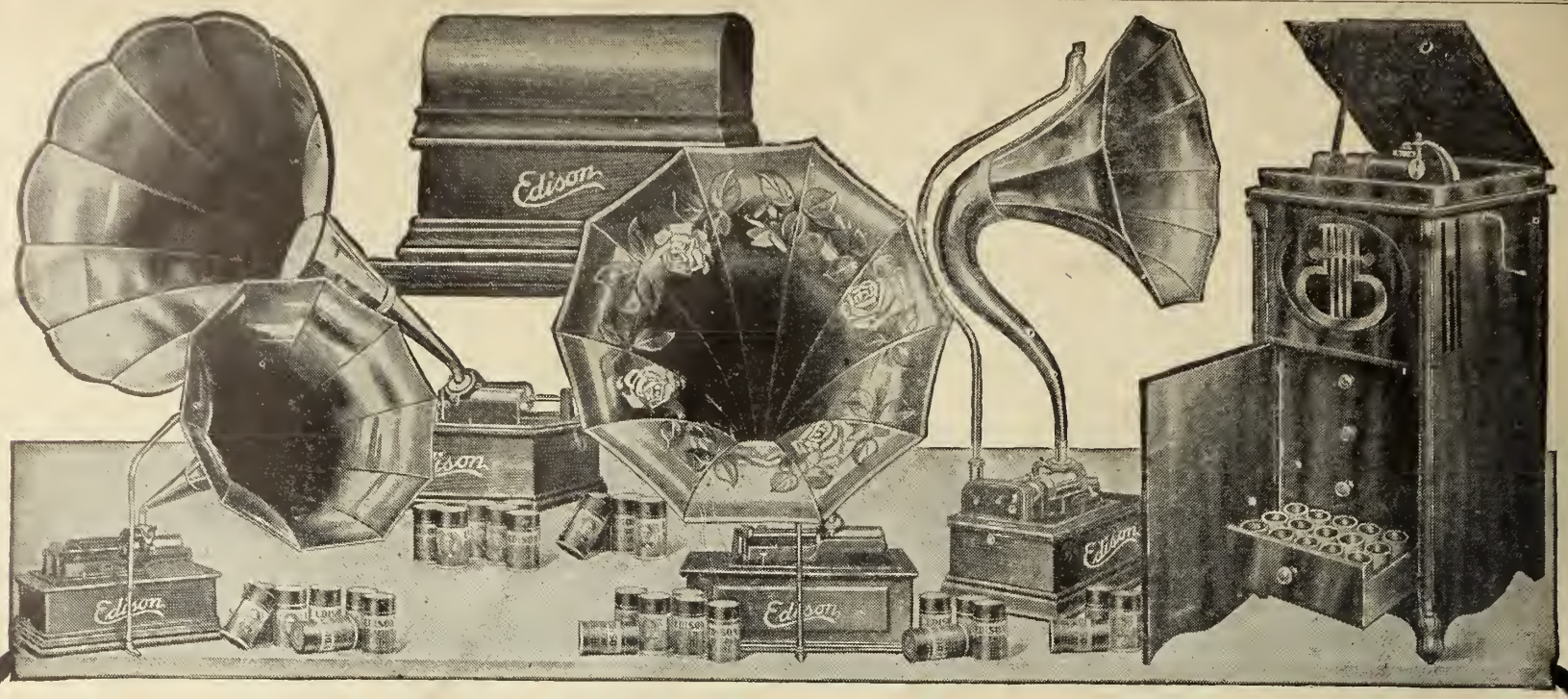
.....

Send me free of all cost, and without obligation, the catalog marked with an "X".

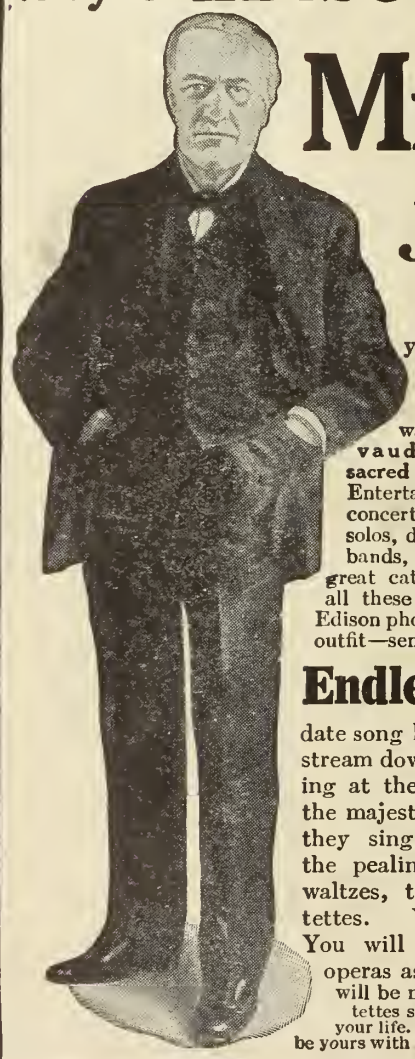
Lumber and Mill Work	☐	Heating and Plumbing Catalog	☐
Book of House Plans	☐	Paint Catalog	☐
Wire and Fence Catalog	☐	Roofing Book	☐

My Name is.....

Address.....



YOUR CHOICE
Of These Wonderful New Style EDISONS Shipped FREE



Mr. Edison Says:

"I want to see a Phonograph in every American Home."

Just Take Your Choice

You Don't Have to Buy Anything

The Edison Offer: We will send you a New Model Edison Phonograph and your choice of all the Amberol records on an absolutely free loan—no obligations, no deposit, no guarantee nor C. O. D. to us whatever. We want you to have all the **waltzes, two-steps, vaudevilles, minstrels, grand operas, also the sacred music, etc.,** by the world's greatest artists. Entertain your family and your friends. Give plays and concerts **right in your own parlor.** Hear the songs, solos, duets and quartettes, the pealing organ, the brass bands, the symphony orchestras, the choirs of Europe's great cathedrals, the piano and violin virtuoso concerts—all these we want you to hear **free** as reproduced on the Edison phonograph. Then—when you are through with the outfit—send it back to us.

Endless Fun Such a variety of entertainment! Hear the latest up-to-date song hits of the big cities. Laugh until the tears stream down your face and your sides ache from laughing at the funniest of funny minstrel shows. Hear the majestic choirs sing the famous anthems just as they sing them in the cathedrals of Europe. Hear the pealing organs, the crashing brass bands, the waltzes, the two-steps, the solos, duets and quartettes. Yes—an **endless** variety of entertainment. You will sit awe-stricken at the wonderful grand operas as sung by the world's greatest singers. You will be moved by the tender, sweet harmony of the quartettes singing those dear old melodies that you have heard all your life. Take your choice of any kind of entertainment. All will be yours with the Edison in your home. **Send coupon today.**

Our Reason: Why should we make such an ultra-liberal offer? Why should we go to all this *expense and trouble* just so *you* can have these free concerts? Well we'll tell you. We are tremendously proud of this new instrument. When *you* get it in your town we *know* everybody will say that nothing like it has ever been heard—so wonderful, so beautiful, such a king of entertainers—so we are sure that at least some one—if not you, then somebody else, will want to buy one of these *new style* Edisons (*especially as they are being offered now at the most astounding* **rock-bottom price**—*and on easy terms as low as* **$2.00 a month**). Perhaps you yourself will be glad to keep this outfit. But even if nobody buys we'll be glad *anyway* that we sent you the new Edison on the free loan—for that is our way of advertising quickly its wonderful superiority.

Free Catalog Coupon

Edison Phonograph Distributers

For the free catalog address the Vice-Pres. and Mgr., **F. K. BABSON**

Dept. 3667 Edison Block Chicago

Without any obligations on me whatsoever, please send me your new Edison Book and full particulars of your new special free loan offer on the new style, improved EDISON Phonograph.

Name_____

Address _____

Now Then Get Free the New Edison Book

We will send you our handsome new Edison book and full particulars of our wonderful free loan offer absolutely free and prepaid. You should see our grand new Edison book. It will give you the list of the thousands of records and all the machines that you have to choose from. Write today—do not delay. Get the free book and learn about this wonderful free trial offer. Send postal or letter, or just the coupon without any letter—but WRITE NOW!

Edison Phonograph Distributers

For the free catalog address the Vice-Pres. and Mgr., **F. K. BABSON**

Department 3667, Edison Block, Chicago

Western Office—65 Post St., San Francisco, Cal. Canadian Office—355 Portage Ave., Winnipeg

VOLUME 23 NOVEMBER, 1912 NUMBER 11

The Fruit-Grower and Farmer

The National Farm Magazine ST. JOSEPH, MO.

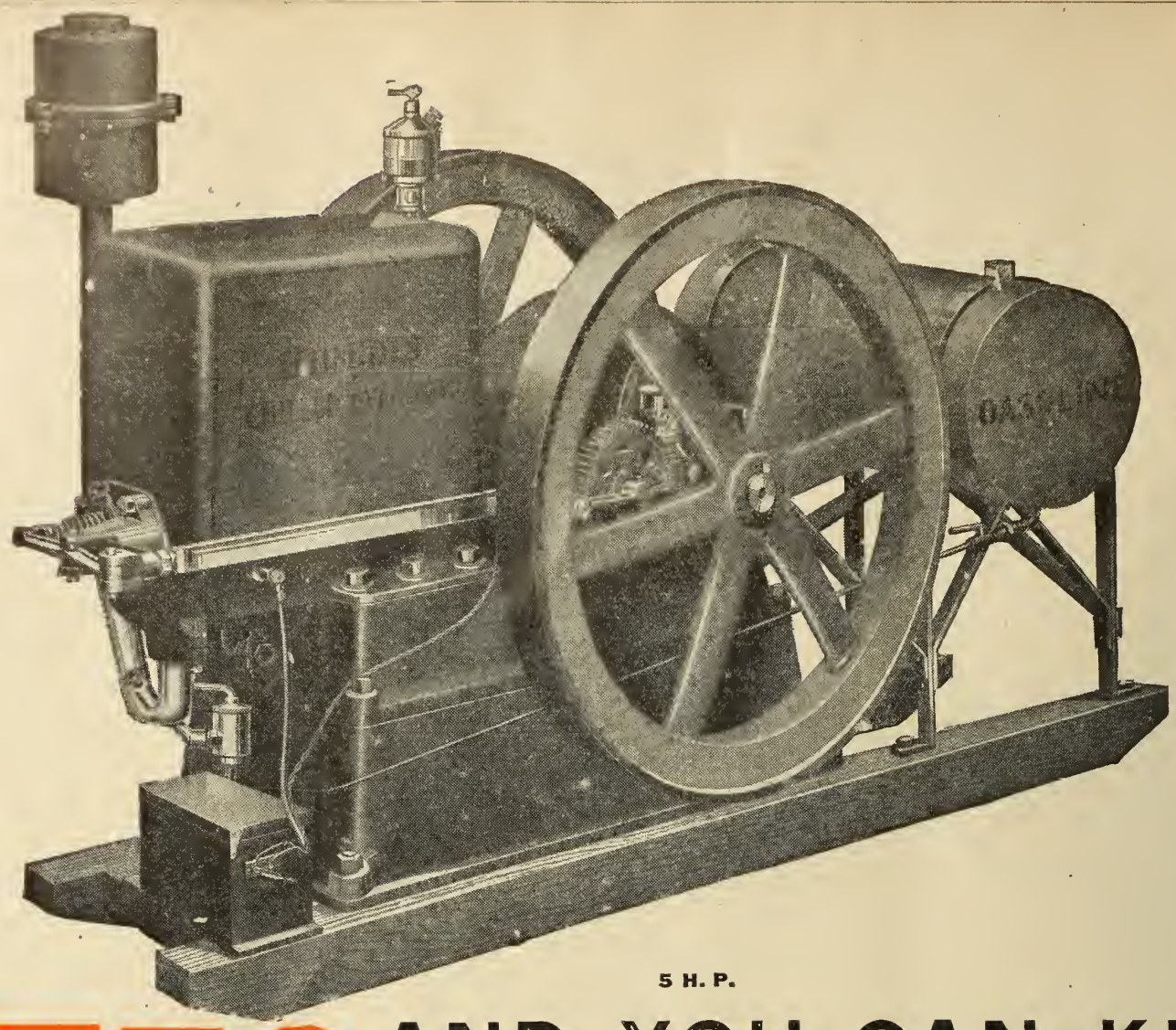
IN THIS ISSUE:

Reclaiming a Run-Down Farm Page 5
A Big Michigan Market Page 6
Rejuvenating a Neglected Orchard Page 12

Trade Mark, Bro. Jonathan

Ten Cents a Copy
One Dollar a Year

Title Registered in U. S. Patent Office. Copyrighted by The Fruit-Grower and Farmer, St. Joseph, Mo.



5 H. P.

$7.50 AND YOU CAN KEEP THIS GREAT ENGINE

Yes sir. That's my proposition. If you want to keep this Chilled Cylinder Engine of mine after you have tried it out for ten whole days you can do it by sending me $7.50. If you want a larger engine or a smaller engine **I will give you the same sort of a record-breaking proposition.**

No other manufacturer ever dared make an offer like this. But I know what my engines are made of. I make them myself. I watch every bolt and nut and piece of steel and brass put together. I know what the Chilled Cylinder is, because I have worked years to perfect it. I know what my engines will do. I have a Chilled Cylinder Engine on my farm. Part of my factory is being run by Schmidt's Chilled Cylinder Engines. I am so sure of my engines that **I do not hesitate to send any one of them out for an absolutely free trial lasting ten days.** I take the risk—you don't. If you are not satisfied with it after ten days trial, send it back to me **at my expense.**

Don't Send Me a Penny

I Want to SHOW You First

All Kinds of Accessories

We carry a complete line of engine accessories—pulleys, shafting, pumpjacks, belts, sawing outfits, washing machines, feed grinders, etc. You may have your choice of any of them—all at the rock bottom price. Pay for them on the easiest kind of payments. Send the free coupon for our big catalog.

I don't want you to send me a cent. **I want you to SEE my engine do all the work on your place before you decide to buy one.**

See the new oiling device and the wonderful valveless carburetor that I have put on the horizontal engines. See how the governor regulates the supply of gasoline so that it is impossible for the engine to use more than the minimum amount. See the spark retarder and all the devices which go to make my engine the most simple and the most efficient in the world. It's the simplest piece of machinery you ever laid your eyes on. Your boy, your girl, your hired man—anybody—can run one of Schmidt's Chilled Cylinder Engines. Send the free coupon and let me tell you more about the big offer. Besides, I want to send you my book, "How to Use Power."

Rock Bottom Prices

If you decide after the free trial that you want a Schmidt Chilled Cylinder Engine, remember you can get it from me without any middleman to jump in and grab a profit. I am the manufacturer. You get the engine at exactly the **same price that the wholesale dealer has to pay.** No middleman—no dealers—get any profits when you buy a Chilled Cylinder Engine on this offer. **I guarantee these engines and the largest bank in Iowa backs up this guarantee.**

Easy Payments

Take your time about paying for the engine. Payments so small that you will never miss them—and all the time you are having the use of the Great Chilled Cylinder Engine on your own place. Send the Free Coupon now.

FREE Power Book Coupon

Ben. L. Schmidt, President, SCHMIDT BROS. CO. ENGINE WORKS
Department 3668, Davenport, Iowa

With the understanding that I amnot buying anything nor paying for anything, you may send me your free book "How to Use Power," and full details of your free trial offer, with easy payments, on your Chilled Cylinder Gasoline Engine.

Name.....

ADDRESS.....

.....

Send Me This Free Coupon

Do not delay an instant! Just fill out the free coupon and mail it to me at once while my big offer lasts. I will send you my new book, "How to Use Power." It gives dozens of pointers everyone interested in Gasoline Engines should have. Even if you do not expect to get a Gasoline Engine yet let me send you my book anyway. I'll guarantee you get a lot of good out of reading it. If you don't want to cut the paper just say, "Send me your free Power Book and all about your offer," on a postcard and I'll have the book in your hands by the first mail. Write today. Get in while the offer lasts.

BEN. L. SCHMIDT, President
Schmidt Bros. Co. Engine Wks. Dept. 3668 DAVENPORT, IOWA

Alfalfa in the East

There will be a big extension in the acreage of alfalfa in the Eastern section of the United States in the near future. In many places in that section there is much the same feeling toward alfalfa that the farmers of the West had toward the westward extension of clover. Many have the idea that it can't be grown, and that ends the matter, in their minds.

One of the principal troubles with Eastern soils is they are deficient in humus and nitrogen. Nitrogen for most crops and on most land can be obtained by the growth of legumes much cheaper than it can be purchased. In the growing of legumes, select the one that will produce the best returns in feed, under most conditions. Alfalfa is the best legume to grow where it will do well. It will produce more feed that has a higher feeding value, on land that is adapted to its growth, than any other legume.

Of course, alfalfa will not grow where the soil is acid or wet or where the subsoil is too hard. If you have soil that has any of these things the matter with it, you would do well to attend to it if you desire to grow crops of any kind that are worth while.

There is no reason why alfalfa should not be the principal leguminous crop in the East, on most soils, just as it is in the West. And the returns of the farmers in the Eastern section of the United States would be much greater if a larger acreage of this crop was grown.

A Famous Cow.

Maid Henry is a thirteen-year-old Holstein owned by the Kansas Agricultural College. She has made a net profit of $562.56 for her owners in the last ten months. Her output in that time was 17,066 pounds of milk, or 8,532 quarts, which sold in Manhattan for eight cents a quart. It would have made 726 pounds of butter.

This cow was not fed anything that any Kansas cow could not have. She ate this every day: Corn chop, bran, oil meal, a few ground oats, alfalfa hay, and corn and cane silage. The average cost of her feed was about forty cents a day. That makes $120 for the ten months. The total value of her milk, at eight cents a quart, was $682.56. A student, who buys her milk from the college, is making his way through college selling it and other milk to 200 customers in Manhattan.

Another student who is operating a two-cow dairy in connection with a boarding house, is earning his way and making a little money beside. The boarding house keeps him and his cows and pays him $1.25 a week.

Seed Corn Must be Well Dried.

As a result of the interest aroused in the state regarding the selection of seed corn during Seed Corn Week, many thousands of bushels of seed corn were picked. Ray P. Speer, Minnesota College of Agriculture, says this ought to help materially in securing maturity and in raising the yield of corn in Minnesota next year.

In order to obtain satisfactory results when this seed is planted, however, it will be necessary to cure the corn well this fall before the freezing weather comes. Otherwise the moisture stored up in the ear, no matter how dry it may appear to be, will not be removed in time and the germinating power of the seed will be injured. In fact, the curing of seed corn is as essential as its maturity and selection.

There are several practical ways of curing seed corn. Big seed corn dealers often have large kilns where they dry their corn with artificial heat. This practice is not economical for the average farmer, however, and simpler methods must be employed. Who is there who will forget the long strings of corn that used to hang in grandfather's garret, where so many happy days were spent in play? This old-fashioned method of curing corn is still a good one, if the windows are opened wide during the good days to let air circulate in the room, thus drying the seed.

A corn tree made of an upright 4x4 set on a standard and in which are driven tenpenny casing nails upon which the ears are impaled, is another good method of curing seed corn. The corn tree may be placed in the garret, or any other out-of-way place in the house or shed. Seed corn may also be cured by placing it on racks, or by scattering it about thinly on a floor in a dry place where the mice or rats will not bother it. There are many different farm methods of storing corn, all of which are good. The thing which must be impressed, however, is the fact that corn should be cured well. No matter what the method is employed good air circulation must be secured. It is an indispensable necessity, if high germinating power in the seed is aimed at.

Spraying Machine Contest.

A novel and educational feature has been added to the events of the Fifth National Apple Show, at Spokane, November 11 to 17, in the shape of a contest of spraying machines. Space will be allowed free of charge to machines entered, and each will be given all tests known to orchardists. The results will be given on a special score card arranged by Professor W. S. Thornber, horticulturist of the Lewiston-Clarkston School of Horticulture, who will have charge of this competition. The contest is another feature of the educational program which will be the keynote of the apple show. Although no prizes will be given to the winners, diplomas will be awarded showing the performances of the spraying machines. Professor Thornber will be at the show throughout the week, and will direct the boys' and girls' apple judging contest, another new feature of this year's exhibition.

Cannas, dahlias and gladiolus bulbs should be lifted as soon as the tops are killed by the frost. Cut off slightly above ground so that the stalk left may be used in carrying and handling the bulbs. Leave on top of the ground a few hours until the roots and soil dry, then place in a cool, though not moist, storage place. If it is necessary to place them under very dry conditions, they should be covered with dry sand or some material that will prevent the tuber drying out.

What Will 5 Years Do?

By R. E. Olds, Designer

Any car will run well when you buy it. But the question is: What will five years do?

I've watched automobiles for 25 years, and I know what the years will do.

And, because I know, I build Reo the Fifth to meet that test of time.

$200 Extra

I could easily save at least $200 by skimping on this car. And, for a year, you might not even know it.

But you would probably lose, in upkeep cost, three times that saving, in the course of time.

Let me tell you some of my careful ways which cost me this $200.

Things That Cost

On Reo the Fifth the tires I use are 34 x 4. On my new model, out Oct. 1, I added 22 per cent to the tire size. I did that because this extra cost will add 65 per cent to the average tire mileage.

I use in this car 190 drop forgings, which average twice the cost of steel castings.

I use 15 roller bearings—11 of them Timken. They cost five times as much as the common ball bearings, but they stand the strain.

I use chrome nickel steel for the axles, vanadium steel for connections, manganese steel for the crankshaft.

Every driving part, for big margin of safety, is made sufficient for a 45-horsepower car.

The centrifugal pump, to give positive water circulation, costs nearly $10 extra.

I use 14-inch brake drums for safety. I use wide, long, seven-leaf Sheldon springs.

Costly Care

I test my springs to stand 100,000 vibrations.

My gears are tested in a crushing machine, to prove that each tooth will stand 75,000 pounds.

My steel is twice analyzed, before and after treating.

Each engine is tested 20 hours on blocks, and 28 hours in the chassis.

My carburetor is doubly heated, and I use a $75 magneto. Thus I save engine troubles.

There are fully a thousand tests and inspections applied to every car, so no errors can creep in.

Center Control

I use on this car a new center control. All the gear shifting is done by moving a handle only three inches in each of four directions.

I use the left-side drive.

The body finish is 17 coats. The deep upholstering is of genuine leather, filled with the best curled hair.

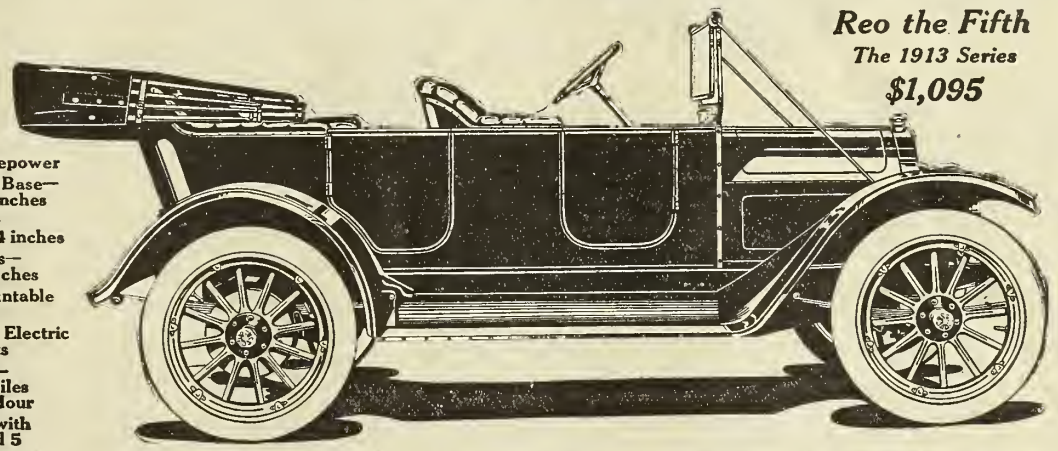
Thus I give you a car which is roomy, exquisite, safe, comfortable and strong.

Men who know best look for cars of this class. I had contracts from dealers for over 10,000 before we shipped the first car of the 1913 series.

Write for our fall catalog, and the name of our nearest dealer.

R. M. OWEN & CO. General Sales Agents for **REO MOTOR CAR CO., Lansing, Mich.**

Canadian Factory, St. Catharines, Ont.

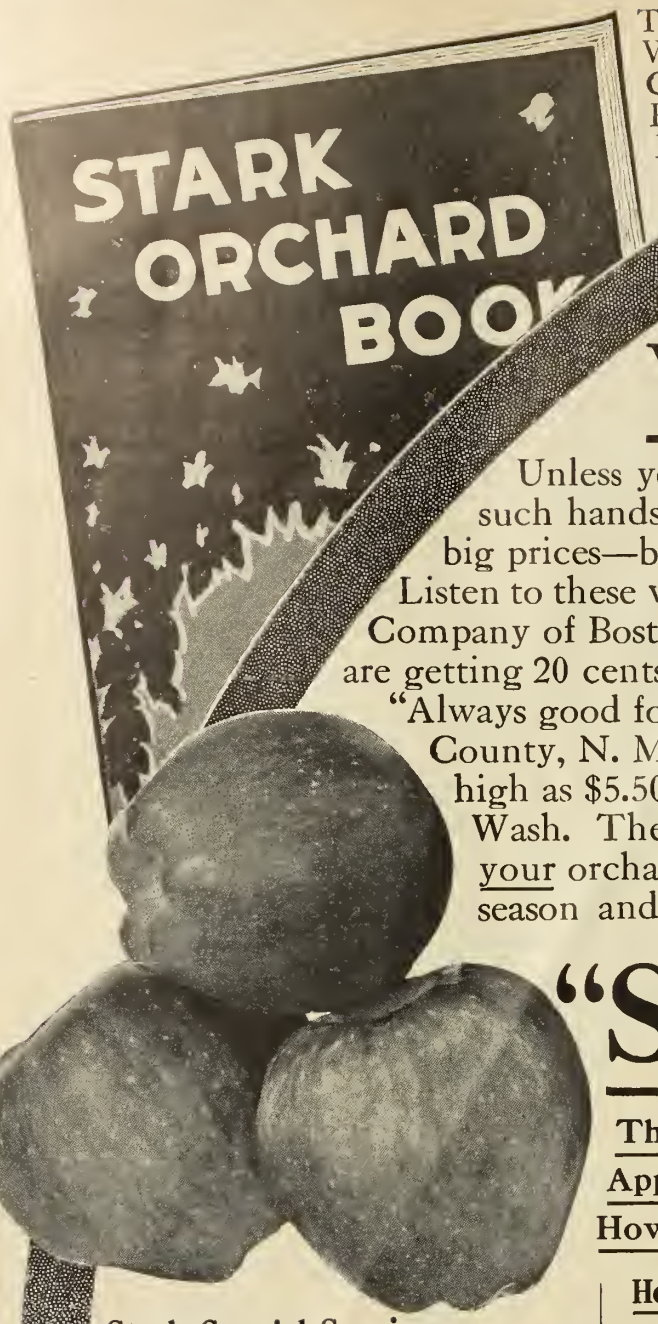


Reo the Fifth
The 1913 Series
$1,095

30-35 Horsepower
Wheel Base—112 inches
Tires—34 x 4 inches
Wheels—34 inches
Demountable Rims
Three Electric Lights
Speed—45 Miles per Hour
Made with 2 and 5 Passenger Bodies

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip cover, windshield, gas tank for headlights, speedometer and self-starter—all for $100 extra.

(114)



This is the Big FREE Book We are Mailing to Fruit Growers or Anyone Planning to Plant.

Did You Get $56.60 Per Tree for Your Apples This Year?

Unless you had Stark Delicious Apples you probably didn't clear such handsome profits. Some orchardists, however, did get these big prices—but they are the men who knew the right trees to plant. Listen to these words of praise for the Stark Delicious Apple: "The Ginter Company of Boston have Stark Delicious Apples in their windows. They are getting 20 cents for each, says A. D. Birchards, Suffolk County, Mass." "Always good for $2.00 to $4.00 per box", says P. D. Southworth, Chaves County, N. Mex. "Stark Delicious our best payer. Have received as high as $5.50 per box for them", says M. E. Stewart, Chelan County, Wash. These are some of the many Stark Delicious successes. Make your orchard a bigger profit payer. Plant Stark Delicious Trees this season and get the highest prices for your apples another season.

"Stark Delicious"

The World's Best Apple—The Biggest Money Maker in All Apple Regions—Let Our Free Service Department Show You How to Grow Dollars—Not Disappointments in Your Orchard

Stark Special Service Department—All Advice Free

A department for **your** benefit—and profit. The "know how" and accumulated expert knowledge of fruit growers from all over the country. We are giving you absolutely free of charge the full worth of our 100 years of experience as nurserymen and orchardists. We can make it easily possible for you to grow **more** dollars from your land, no matter what your net profits are now. Are you interested in such a proposition? Then just let us tell you what kind of service we give you **free**—and

What We Can Actually Do for Your Orchard

1. We advise you on conservative, proven lines from the day you buy your land, whether you intend to make it a commercial, home or local market orchard. 2. We give you scientific methods of preparing your soil for **biggest results.** 3. We show you how to lay off your orchard in the way that will prove **most** convenient. 4. We tell you how many trees to buy. 5. Tell you simply, yet thoroughly, how to prune your trees, at planting time and in later years. We tell you the best methods of cultivating. We tell you how and when to spray. We give you a service from the very start to the time you ship your apples—and by this advice we can help you make your orchard profitable.

How a Dollarless 20-Acre Orchard Cleaned Up $4,000

Just two miles from our office is a 20-acre orchard that, up to two years ago, never paid the owner a single dollar. At that time the orchard was leased by a man who **knew his business.** He waded into the orchard with a saw and an ax, chopped out the superfluous wood, opened up the middles, and let in the sunlight. He cleaned out the weeds, brush and accumulations of years and started the spray wagon up and down the rows. **This** season he produced 1,000 barrels of extra fancy apples—and he will get $4.00 per barrel for them.

This year the apple orchards of the United States put millions and millions of gold dollars into the pockets of their owners. Yet some did not reap their share of the profits because they either did not know how to care for their trees or neglected them. To make these orchards profitable, we have established the Stark Special Service Department. Let us make **your** orchard pay.

You **know** that apples will pay you bigger profits than anything else you can grow. That's why you should want our Free Service and the Free Books that go with it. Faulty apples don't bring best prices. Weak trees produce faulty apples. Good, healthy trees produce **good** apples—good apples bring highest market prices.

Stark Delicious Apples Would Have Netted You Handsome Returns This Year

You could have "cleaned up." You could have gotten **a bigger price** than anybody, for Stark Delicious apples are the preference of all. Judge Adam Thompson of Buchanan Co., Mo., refused $4.50 per barrel for his Stark Delicious on the sorting table. Ben Davis and other varieties were not in demand.

Get the Stark Orchard Book and other literature. Annually we will issue books on orchard subjects. These are all **free**—also the Stark Special Service Department's advice. Plant Stark Delicious trees now.

Don't Be On The Slim Side Of The Ledger Next Year—Fill In The Coupon Now

by just tearing off this coupon and mailing it to **us,** the book shown above, and other valuable orchard literature, will be immediately mailed you **absolutely without cost.** If you are planning to plant an orchard the selection of best varieties is the big problem—upon correct selection depends your success.

Stark Delicious should be your leader, of course. Then some Stark King David, Stayman Winesap, Senator, Jonathan, Grimes Golden, Black Ben and Rome Beauty. This is the **cream** of the winter apple list. In buying trees **don't think of price** first. Don't plant a cheap, inferior tree, whatever you do. It's expensive economy. Buy the best trees you can find—and those trees are **Stark** trees. Tear off the coupon **right now**—and mail it in.

Stark Bro's Nurseries & Orchards Co.

Louisiana, Missouri

A Record of 100 Honorable and Successful Years in Business

COUPON STARK BRO'S NURSERIES & ORCHARDS CO., Louisiana, Mo. Box 300.
Gentlemen: I am interested in your Stark Special Service Dept. and ways of improving my orchard. Send me the free books and all information about the Stark Delicious apple. Am also interested in the following varieties.
I expect to plant ..... trees this coming season.
.....
.....
.....
Name.....
State.....
P.O.....

WM. G. CAMPBELL
General Manager
JAMES M. IRVINE
Managing Editor
ERNEST H. FAVOR
Horticultural Editor
FLOYD B. NICHOLS
Agricultural Editor

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri

The Fruit-Grower and Farmer

"THE NATIONAL FARM MAGAZINE"

AN ILLUSTRATED MONTHLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Subscription $1.00 a Year

ADVERTISING RATE: 50 Cents Agate Line; $7.00 Inch

Volume 23 | St. Joseph, Missouri, November, 1912 | Number 11

Reclaiming a Run-Down Eastern Farm

Getting Thirty-Four Bushels of Wheat Where Only Eight Grew Before. The Part That Was Taken By Lime and Legumes

By Floyd B. Nichols, Agricultural Editor

Will agriculture come back to its own and once more be the paramount industry of the South? The answer of J. B. Andrews and his son, T. J. Andrews, of Roanoke, Va., is "yes." They are demonstrating the truthfulness of their answer.

They own a 371-acre farm in the Shenandoah Valley, three miles from Roanoke. The soil was so poor nine years ago, when the first section was purchased, that it wouldn't produce crops that would pay for the labor of cultivation. The first cutting of alfalfa this year averaged three tons to the acre. Wheat averaged thirty-four bushels. The corn produced a good crop, considering the long drought in that section.

How has the fertility of the soil been improved? Mostly by the intelligent use of crop rotation, legumes, manure, phosphorus and lime. Some bonemeal was used to supply needed nitrogen until the soil was improved to a point where the legumes would grow well. Practical, money-making methods have been used in every case.

The top ten inches of land is chocolate loam. The subsoil is clay loam. That section of Virginia has been settled more than 125 years. Most of the land was granted in colonial times, by the King of England, to prominent persons, and some of these grants still belong to the descendants of the men who received them. The country did not become thickly settled until after the revolution.

Most of the land has not been farmed properly, and some of it is in bad condition because of vicious cropping methods. Especially is this true on the slopes, where the ground has been washed by heavy rains. Much of the land is acid, where lime has not been used.

It is not an easy matter to take a "run down" farm in that section, grow big crops and make a good profit from them. Men who can do it must have plenty of intelligence and skill. J. B. Andrews, in addition to caring for business interests in Roanoke, has been a careful student of soils and crops all his life—yes, he has been a subscriber to The Fruit-Grower and Farmer for many years, and so has his son. T. J. Andrews, the son, has attended the University of Virginia, the Virginia Agricultural College and the North Carolina Agricultural College. He knows the science of farming as well as the practical application of these principals.

Soil Needed Nitrogen and Humus.

When Mr. Andrews bought the farm, he realized the two greatest needs of the soil were lime and humus. He began to haul manure from town, and has kept one and sometimes two teams hauling most of the time for the last nine years. He buys the manure in Roanoke for from 50 to 75 cents a two-horse load, which is about a ton. The three miles of roads to the farm are good and are macadamized most of the way. Mr. Andrews believes he has made a good profit from the manure. In speaking of this, he said: "The soil was so poor when we bought the land that we could not do very much with green manure crops or a crop rotation, because the crops would not grow well. It was essential to get humus and available plant food in the soil promptly, so we used manure and large quantities of fertilizers rich in nitrogen.

"Now that our land is much higher in fertility, we shall quit the use of nitrogen in commercial form, but we will continue to use large quantities of phosphorus. Now that we can grow legumes well, we can produce our nitrogen much cheaper than we can buy it. We have not used potash on our land, for I do not think potassium is deficient in our soils.

"Raw bone meal, our nitrogen fertilizer, costs from $31 to $33 a ton. Most of it comes from Chicago. Acid phosphate costs from $12 to $14 a ton. Quick lime costs $4.33 a ton for the best grade, and $2.25 a ton for a second grade. I believe the best grade is the most profitable to use. Ground limestone costs $2.25 a ton. All these prices are on board cars at Roanoke.

"Lime at these prices is too expensive. I believe, judging from my observation and from the experiments at the Pennsylvania Experiment Station, that ground limestone is superior to quick lime for correcting soil acidity. But it ought to be sold for at least half that price. In this section we have big limestone ledges and an immense need of the material on the land. There is a chance for a profitable investment here for some man who will put in a mill for crushing limestone.

"We have been applying acid phosphate and bone meal at the rate of about 200 pounds each, with our grain and meadow crops. The bone meal has been expensive with that application, and we now expect to quit its use."

The Lime Problem.

From six to eight carloads of lime are applied every year. Quick lime has been used, mostly, but they are substituting the ground limestone. In speaking of this, T. J. Andrews said: "Calcium, which is the element we are after to correct the acidity, is cheaper in the form of ground limestone, taking the usual run of prices the country over. Then, quick lime is very disagreeable to handle. We haul it out to the farm and put it in our lime houses, which are placed away from the other buildings to guard against fire. We then let it slack before we apply it. We use several methods of spreading it. Sometimes we use the lime hood on our manure spreader, and sometimes we spread it directly from the rear of a wagon box, by hand. Then, we sometimes haul the quick lime directly to the fields, put in piles, and cover these piles with a little dirt. We spread these piles later, after they have had time to slack.

One hundred and fifty acres are in permanent pasture. Blue grass and orchard grass are the principal pasture grasses. The remainder of the farm, except the land in the hog lots and around the barns and houses, is under this rotation: corn, crimson clover or cowpeas, wheat and then a hay crop. Usually, this hay crop consists of a mixture of mammoth clover, timothy, herd's grass and alfalfa. The seeds are mixed in equal proportions and the mixture is sown at the rate of twenty-five quarts to the acre.

"This is a good mixture for our conditions," said Mr. Andrews, "but we also grow considerable alfalfa. We started to grow this legume three years ago, and we now have fifty-three acres. It is producing splendid returns. We shall increase the acreage rapidly.

"This talk about it being hard to

(Continued on Page 36)

THREE-YEAR-OLD ALFALFA FIELD ON THE FARM OF J. B. ANDREWS.

A Market That Aids the Middleman

The Systematic Management of a Big City Market Where Producers Meet to Sell Their Crops. The Need of Co-operative Selling.

Six million dollars' worth of fruit and vegetables were sold last year in the city market of Grand Rapids, Michigan. Three hundred wagons, on an average, are at the market every morning. The number of wagons, however, is often twice that, and sometimes more.

The market covers ten acres. The land is divided into "streets," which are cement walks along which the wagons are backed. These streets are divided into stalls, which are seven feet wide; there are marks on the cement where the wagon wheels must be. By placing the wagons properly, in this way, it allows a passageway between the wagons. Every class of growers and every class of buyers has a place of its own. The hucksters, grocers, fruit-growers and truck-growers each has a place, and each class must stay on its street. A grower is allowed, however, to bring both fruit and vegetables.

Grocers and hucksters pay a rental of $5 a season for the stalls. The growers pay from $8.50 to $28.50, depending on the location. Part of the fruit section is covered, and the stalls in the shed bring the higher prices. If the growers do not desire to rent the stalls for a season, and many of them do not, a rental of 25 cents a day is charged. In this case, the grower cannot, of course, have a permanent stall.

All fees and rents go to the city treasury. The receipts for this season were: April, $2,263.90; May, $1,046.50; June, $1,796.95; July, $901.75, and August, $1,028.05. The money for the salaries of those who have charge of the market, and the other running expenses, is appropriated out of the city treasury.

Why the Retailer Gets the Profit.

Five persons are employed to keep the market running—the superintendent, two assistants, bookkeeper and a boy. Michael Kerwin is superintendent. The salaries and other expenses do not take all the receipts, so the city makes a profit. The market is well into town, so the value of the land is considerable, and it is right that the city should make some profit.

The market is mostly a wholesale proposition. Some fruit and vegetables are sold at retail in small quantities, but as the grocers and hucksters have the retail end well in hand, they get most of the business. The growers mostly sell direct to the retail dealers and to the commission men. In general, the retail dealers are getting only a good living profit. The consumers probably are "skinned" as little in Grand Rapids as in any city in the country.

The market opens at 4 o'clock and most of the sales are made before 5:30. This is of advantage to the growers, because it allows them to dispose of their produce promptly. If they sell to a commission firm they have time, in many cases, to return home and to get another load by afternoon, for carload shipments. The wagons begin to arrive on the market soon after midnight.

A TYPICAL HUCKSTER WAGON IN THE GRAND RAPIDS MARKET.

This early selling is of advantage to the wholesale buyers, because it allows them to get their supplies in plenty of time for the day's retail trade. The fruit and vegetables usually are in good condition, for they were picked the afternoon before. But this early market is of disadvantage to the consumers who wish to buy on the market. Not many persons will arise with or before the sun to wend their way down to the market to purchase a small amount of produce. City folks prefer to sleep, and to call up the groceryman on the 'phone, later, and tell him their wants. This, by the way, is one of the many causes of the high cost of living.

An effort was made some time ago to encourage the retail end of the market. The city street car company put on special cars early in the morning, that were run to the market. Every effort was made to get both the producers and the consumers interested, but without much results. As Mr. Kerwin said: "There were two good reasons why the effort to encourage the retail end of this market was not a success. In the first place, the farmers will not stay until a reasonable time in the morning for the city people to get down. They prefer to sell their produce direct, and go home. Then, the number of city people who will come down is not large. We found, after a trial, that it don't pay to go to any special effort to encourage the retail end."

An Average Day's Business

In the last week in September, when a representative of The Fruit-Grower and Farmer was on the market, the number of wagons was averaging about four hundred and fifty. On September 27, with an average day's business, the sales, with the average prices, were: Apples, 1,050 bushels at 75 cents; Irish potatoes, 825 bushels at 50 cents; grapes, 590 bushels at 75 cents; tomatoes, 410 bushels at 60 cents; plums, 150 bushels at $1.50; pears, 75 bushels at $1.25; peaches, 50 bushels at $2.50 and 25 bushels of crab apples at $1. No complete record is kept of the sales of vegetables. However, it is known the sale of vegetables will run to a higher sum, this year, than the sale of fruit.

Peaches were almost a failure around Grand Rapids this year, and that accounts for the high price. However, farther south, in the Michigan fruit section around Benton Harbor, the peach crop was good. The normal production of peaches in the Grand Rapids section is not so large as it used to be.

The fruit sold in the market is usually not well graded before it is sold. Some of it is bought by commission men who grade and pack it, and ship it to other markets. This aids in relieving the congestion of the market at times, but it has the objection that the fruit goes out under the name of the commission house. Thus the community is not establishing the reputation for good fruit that it would establish if the fruit was handled by a co-operative association and every box, basket and crate properly labeled.

The Rules of the Market

The rules governing the market are strict, and they are well enforced. The principal ones are:

There shall be no driving faster than a walk on the market.

No one will be allowed to re-rent a stall or give permission to others to use the same at any time without the consent of the Committee on Public Markets.

Visitors with teams who are not classified will take stand on the south end of the market, or apply to the superintendent for a place.

No stalls shall be rented to anyone unless all arrearages due from him shall have been paid in full.

When renting stalls at least one-half of price shall be paid down by the lessees, and the balance not later than July 6. If balance is not paid by that time, said stall can be declared vacant by the Committee on Markets. Any stall holder who has not satisfied his account with the Superintendent of the Market by said date will be charged entrance fee until the balance is paid.

No sales shall be made on the street of the Market, and sales shall only be made at the stalls or places designated by the Superintendent of the Market for such sales.

Hucksters and grocers must not leave their goods on the walks or in

(Continued on Page 40)

Where Trees Are Grown By the Million

Twenty-Five Hundred Acres in Nursery Stock in the Sandy Soil of the Ocean Front. Methods Which Have Been Successful in Building Up a Mammoth Business

By Floyd B. Nichols, Agricultural Editor.

Twenty-six years ago J. G. Harrison, a southern lumberman, bought 167 acres of land in southern Delaware for $3,000, giving a mortgage for two-thirds of this amount. On this farm were 100 Smock peach trees, twenty years of age. Mr. Harrison sold the first crop for $262, and started in the orchard and nursery business. In order to get desirable trees, it was decided to grow the peach seedlings, and to use buds from two desirable trees on the place. The seedlings were grown, an expert budder was hired, and Mr. Harrison's two sons, George and Orlando, did the tying. From this lot of trees they sold 100 for $5.00, to J. F. Hobson of Philadelphia. That was the beginning of the nursery business of the Harrisons.

Today two thousand five hundred acres are used for growing nursery stock by J. G. Harrison and Sons, Berlin, Maryland. There are more than ten million fruit trees on this tract. Five million trees were sold last year, and their business has doubled in the last three years. About 250 acres have been added to the nursery every year for the last five years, and the size of the packing house has been doubled this year. In addition, they own several thousand acres of land along the coast and are interested in orchards containing more than 400,000 trees.

Berlin is seven miles from the Atlantic ocean, and forty-four feet above sea level. The cool ocean winds make the temperature uniform, and lower on an average than at points farther inland. The soil is a deep sandy-loam, with a clay-loam subsoil which allows good root development. The land originally was ocean bed.

Many Varieties Are Grown.

Apples and peaches are the great specialties of this nursery, although practically all deciduous fruits and many ornamental and shade trees are grown. About one million apple trees and one and a half million peach trees were sold last year.

The apple trees are sold at one and two years of age. The price is uniform for all varieties, and varies only with the size. Ninety varieties are grown. Some of the principal ones are: Baldwin, York Imperial, Yellow Transparent, Stayman's Winesap and Jonathan. There has been an especially heavy demand for the Yellow Transparent and Stayman's Winesap recently.

One hundred and sixteen varieties of peaches are grown, the principal ones being: Elberta, Ray and Belle of Georgia. The prices are uniform, depending on the size, except for the Ray, which is slightly higher. There is a heavy demand for this variety. It was one of the most popular fruits with the commission men in New York City last summer. This variety

has been one of the leaders in the Harrison line, and they sold 150,000 trees of it last year. The original tree still is alive.

Pears are grown extensively, Kieffer being the leader. The soil around Berlin is splendid for pears. The Harrisons own a large commercial orchard of pears, mostly Kieffer, inter-

J. G. HARRISON.

planted with LeConte to aid in the pollenization.

Strawberries are an important line. Two and a half million plants were sold last year. Forty-five varieties are handled. There is a large acreage of strawberries grown along the coast, so there is a market for the plants near home.

All of the important deciduous fruits are grown extensively. Then, in the last five years, there has been a great extension of the work in ornamental trees, plants and shade trees. A man from Holland was hired to come to Berlin and take charge of this department. Ornamental planting is further advanced in Europe than it is in America.

Incidentally, they have a block of 120,000 Norway Maple trees that are remarkably fine. These trees were bought in Holland and set in 1909 to 1911, and they now are 10 feet high on an average. They will be grown one or two years more. There is a big demand from city parks for trees of this variety, that are about three inches in diameter. California privet is handled extensively, for which there is a good demand in the cities.

In propagating the fruit trees, budding is used much more extensively than grafting. Most of the demand for grafted trees comes from the Mississippi Valley. A force of 110 men and boys, on an average, worked at budding all summer, beginning June 18. The champion "budder" has been budding 4,700 peach trees for a day of ten hours this summer. This work is done by people who live near Berlin, most of whom have done this work for many years.

New Budding Method.

One of the features of the work of budding as handled on this farm is the way the buds are kept on ice. This plan was originated by George Hale Harrison, a son of Orlando Harrison, and used last year for the first time. In speaking of the system, he said: "Our results, because of the different lengths of time between the time the buds were removed from the tree and when they were used, were not uniform before we invented this system. I knew low temperatures would keep the buds dormant and in a good uniform condition. So, on a small scale, I tried keeping them on ice, and the results were very good. We then built a large box, which we haul on a wagon, in which ice is kept. The buds are placed in this box at least five hours before they are used, to get the heat out of them. They are left there until we get ready to use them. The buds are not out long before they are used."

This year, on the larger peach trees they tried the experiment of cutting off the tops so the loss of sap would be through these wounds and not in the bud wounds. This plan was used on the larger trees and was very successful.

Buds and grafts are practically all cut from bearing trees. The Harrisons own a large acreage—about 400,000 trees in commercial orchards, so there is no difficulty to get good trees to furnish buds and grafts. This work is under the personal charge of G. A. Harrison, and it is one of the features of the way the nursery is handled. In other words, before the Harrisons use a bud or a graft, they find out what the tree that produced it has done.

In speaking of the question of budding or grafting, Orlando Harrison said: "We bud most of our trees. Budding is better than grafting. Budded trees cost us more than those that are grafted, when you consider the extra year we must grow the budded tree. I think superior trees can be produced by budding."

While piece-root grafts are used, for the trees that are grafted, Mr Harrison says: "Whole root grafts make the fastest growth and are the most profitable for us to grow. Time is money in this business."

The land around Berlin has been farmed for a long time, much of it for 100 to 150 years. The place on which Admiral Stephen Decatur, one of the naval commanders of the war of 1812, was born and raised is a part of the nursery.

How Fertility is Maintained.

Cowpeas are used extensively to keep up the fertility of the soil. More than four hundred bushels of clay cowpeas were planted this year. Between every two rows of apple seedlings is a row of cowpeas, and this crop is grown in many other places on the farm. The vines are allowed to mature, and are left on the ground over winter as a cover crop, to be plowed under in the spring. Mr. Harrison considers this plan important for "plenty of nitrogen and humus in the soil are essential for good tree growth. We can grow nitrogen much cheaper than we can buy it. Then it is a good idea to have a cover on the ground in the winter and the mature vines are good for this purpose.

"Stable manure is used on the land extensively. In addition to that produced on the place, fifty thirty-ton cars are bought in New York City every year. This manure costs $3.00 a ton on board cars at Berlin. The freight charges are about half of this sum, I believe."

About 110 tons of commercial fertilizers are used every year. This consists of nitrate of soda, which is used mostly on peach seedlings, fish meal and bone meal. Bone meal costs about $33 a ton. More than $10,000 was spent for fertilizers in 1911. Considerable lime is used.

A rotation of crops is practiced. Mr. Harrison said, in speaking of their rotation: "It would not do to keep the land in trees all the time. So we change the crops and grow cowpeas, corn, rye and many other crops to fill in the rotation. We grow a large acreage of rye for use in packing trees."

The trees are cultivated carefully until the latter part of August, when all cultivation is stopped so the plant can get in a mature condition for winter. Every effort is made to get the land in the best condition before the seedlings are planted. It is put in fine physical condition and they make sure there is plenty of available plant food present. According to Mr. Harrison, "We have found it pays to get the soil in perfect condition before planting seedlings, for the labor and expense of the future cultivations is decreased markedly."

A Mammoth Packing Shed.

The capacity of the packing houses has been doubled this fall. The main houses now are 400 feet long and 150 feet wide. The new part of the house is constructed of cement blocks with an iron roof. The blocks are made of one-third cement. They cost six cents each and have a face of 8x16 inches.

All stock is shipped as soon as it is packed. Just before the plants are packed, the roots are dipped in the "mud holes," which are depressions in the cement floor that are full of mud and water. This covers all of the roots with soil. No stock is packed in the fall and winter to be shipped out in the spring. The Harrisons believe that stock packed in this way does not reach customers in the best of condition.

A FEW OF THE ONE HUNDRED AND TEN BOYS IN THE BUDDING GANG.

However, this method of making up the orders is used as much as possible. The early orders are filled in the winter and then are heeled-in inside the building, if the weather is cold. When a warm period comes, the plants are removed outside and heeled-in. If the weather is warm, they are taken outside when the orders are made up. With the increased packing house space, this method of filling orders can be used to even better advantage in the future.

There is a railroad switch of thirty-five car lengths along the packing houses. The floors of the cars and the packing house are on the same level, and the boxes easily are loaded into the cars.

Many carloads of seedlings are received every year right in the rush of the winter's work. The storage of this stock has been a problem in the past, but with the increased house-room it will be much easier.

Solving the Packing Problem.

One of the features of the way the Harrisons run their packing and shipping business is the way they have reduced overhead expense. All lumber is sawed by their own sawmills, from logs cut from their own land. What sawdust is needed is obtained from these mills. The lumber is made into crates and boxes by the aid of power wood-working machinery in this department of the packing house. One hundred acres of rye are grown every year for packing purposes. What hay is used is cut on low ground near Berlin, and packing moss is hauled from nearby swamps. About the only direct expense on the packing proposition is the labor bill.

The stock is fumigated before being shipped. The wagons are run directly in the fumigation rooms and are fumigated without unloading. Hydrocyanic acid gas is used, the length of the fumigation depending on the trees.

Labor is cheap at Berlin. From two hundred to five hundred men and boys are employed on the farm. The average number is 325. About 120 mules and horses are used. About nine-tenths of these are mules. The men are paid 90 cents a day, without board, for most of the common labor. Boys are obtained for much less. They are paid from 30 to 75 cents a day. There are several farm subdivisions in the nursery, and resident foremen are in charge.

Land around Berlin sells for from $20.00 to $50.00 an acre, with an average of about $35.00. The principal crops are strawberries, Irish and sweet potatoes, corn and tomatoes. Many pear, apple and peach orchards have been set in the last few years. That section has the advantage of favorable freight rates, for the haul to the central markets is short.

The Secret of Success.

The nursery is run as a family business, and is owned absolutely by the Harrisons. J. G. Harrison, who now is 74 years old, and Orlando Harrison, his son, started the business twenty-four years ago.

The third generation is now coming along. George Hale Harrison, a son of Orlando Harrison, is now a student in horticulture at Cornell University. He was one of the representatives of the Harrison Nurseries at the meeting of the American Association of Nurserymen at Boston in June.

The Harrisons believe that a man who is in the nursery business should grow fruit. In addition to the money in fruit production, it will give him a different viewpoint, and teach him where he can aid the fruit grower with his nursery work. Then good buds and scions may be cut from bearing trees in these orchards.

And it also has this advantage: If a man desires to plant a certain variety of fruit, he can go to the Harrisons and find out just what that variety is doing, for they have trees of most of the standard varieties in their bearing orchards.

In addition to the large commercial orchards near Berlin, they are interested in 400,000 trees at Martinsburg, Keyser, Berkley Spring, Foblers and North Mountain, W. Va.; Hancock, Easton and Hurlock, Maryland, and at Seaford, Millsboro and Nassau, Delaware.

What is the secret of the success of this big nursery? It merely is that they have a belief in fruit and in fruit growing, and have gone at the proposition in an intelligent manner. "High quality" fruit and tree products, produced in an intelligent manner is the secret of the success of the Harrison Nurseries.

Orcharding in Western New York

The Way Trees Are Cared For on a Highly Successful Farm. The Place For the Dwarf Pear Trees.

By W. H. Jenkins.

One of the best features of the New York Fruit Growers Association's summer field meeting is the opportunity given to visit noted fruit farms. The automobile trips are so planned that one can spend some time in the most scientifically cared for orchards in the world, for there is no other place where orcharding on a large scale has produced larger crops than in the Ontario fruit belt. I have at different times visited most of the successful orchards and, having seen so much of the fruit section, I can say that conditions are somewhat like those in the dairy farming sections of the state, i. e., only the few are getting the large margins of profits. These few sometimes get a profit that is close to $1,000 per acre. These summer field meetings are arranged so that we can see these orchards and learn how they are managed.

In parts of the country where dairy or diversified farming is practiced, the family orchard is often left to take care of itself. Generally the branches are dying with fire blight, the leaves on the trees are covered with fungus so they cannot perform their function and fully develop and ripen the apples. The few apples these orchards produce are wormy and imperfect, because the codling moth and maggot have not been controlled, and they are not well colored because right pruning, that lets the sunshine through the branches, has not been done.

Enormous Old Trees.

I should like to have taken the owner of one of these neglected orchards with me on the trip I recently took through Orleans county. There are special advantages in the Ontario fruit belt, which is the strip of land along the southern shore of Lake Ontario which was once the lake bottom, for extensive commercial orcharding, but about all the progressive methods practiced there can be used for apple culture in most parts of the country with good results.

The fruit farm I will describe, because typical of the best in Orleans county and because of the diversity of orcharding which has lessons for both the grower of standard fruit trees in the family or commercial orchard and for those who must practice intensive tree culture in the family fruit garden, is the one known as the Albert Wood farm in the vicinity of Albion. When our party in the auto arrived at the farm, we found several other autos standing near the fine residence, waiting for their occupants to see the orchards. I have found such farm houses on these farms, and in almost every instance the owner possessed one of the expensive touring cars that takes considerable money to buy and operate. It is scientific orcharding that pays for the many conveniences, luxuries and comforts that are in evidence in a farm home like some of these near Albion.

First we went to the apple orchard and saw the Baldwin apple trees in their bearing season. They were old trees that were planted forty feet apart, and their branches touched through the centers of the rows. Let my readers think for a moment what this means—a bearing surface forty feet in diameter and over 120 feet in circumference, with a height of tree that may range between twenty and thirty feet, and the branches thickly set with apples. An estimate of the large crop on one tree could hardly be believed by the farmers I know in my home in southeastern New York. When I was told that apples to the amount of $1,600 had been sold from one acre of one orchard in western New York, I could believe it only after I saw this apple orchard on the Wood farm.

THE HIGHLY CULTIVATED AND PRODUCTIVE DWARF DUCHESS PEAR ORCHARD ON THE WOODS FARM.

The Way the Trees are Cared For.

Now, we want to know why the trees were so large, healthy and vigorous, that not hardly a diseased twig or blighted leaf could be seen on them, and they were able to mature and ripen the immense crops they bore. The main essentials of successful orcharding had been complied with, as cultivation, feeding, protection from insect parasites, and right pruning. All summer, up to about the first of August, clean cultivation had been practiced, and an earth mulch had been kept around the trees. I do not know whether a gasoline traction cultivator had been used in this orchard, but I have seen them in successful operation in other orchards in the Ontario fruit belt. I also know it is quite a general practice to cultivate these orchards more thoroughly than most farmers do their corn and potatoes, and to subirrigate the trees by keeping the mulch on the surface, causing water to rise to the roots of the trees by the force of capillary attraction. It is evident that such great trees, with their great loads of succulent fruit, must have large quantities of water to ripen large, juicy apples and develope their true flavor.

Another essential in scientific orcharding is obtaining food from the atmosphere to feed the trees by the means of a legume cover crop. Clover is the best one of the plants that takes nitrogen from the air and stores it in its roots and stem. Then, in the form of decaying humus, this cover crop, supplemented with some chemical fertilizer or stockyard manure, feeds the trees.

These western New York fruit growers practice most thorough spraying. First, early in the spring, when the trees are dormant, the trees are sprayed with lime-sulphur for scale insects. Again, when the buds are opening, with lime-sulphur or bordeaux mixture and arsenate of lead for fungus and maggot. This same material is applied a second time after blossoms fall, and again after intervals of two or three weeks. When the trees are dormant they are pruned so as to let in the sunshine to all the branches.

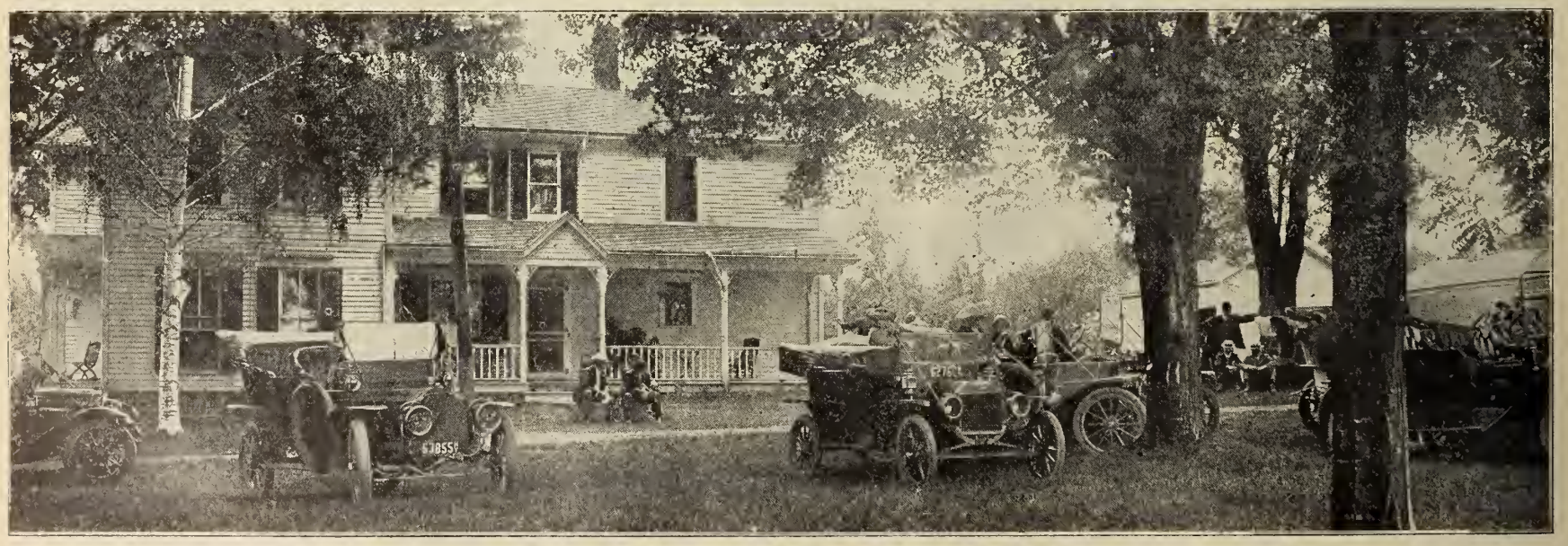
It will not be necessary to describe in detail the treatment of pear, plum, peach or cherry orchards, because the cultivation and feeding of the trees is practically the same as with the apple orchards. The main difference in spraying is the substitution of bordeaux mixture for lime-sulphur wash.

The Place for the Dwarf.

The large orchard of dwarf pears on this farm is of special interest to those who wish to grow tree fruits for family use in the garden. This orchard on the Wood's farm is an old one, but under their plan of high culture is still thrifty and productive. The trees are about ten feet apart each way, so about twice as many trees are set on an acre as with standards. The dwarfs are supposed to come into bearing earlier than standards, which is in their favor for the garden.

My own experience with dwarfs and standards, and that of many growers, also the New York State Experiment Station, is that where one has room to grow standards, they are more profitable in commercial orcharding, and that the right use of dwarf pears or apples is for intensive and very high culture in the family fruit garden. These trees on the Wood's farm prove that by heavy feeding and thorough cultivation, dwarf trees can be made fairly profitable and long lived.

On this farm I found more trees of the Baldwin apple than of any other variety. I only wish that an apple that has so many good quali-



SOME OF THE AUTOMOBILES OF THE NEW YORK FRUIT GROWERS WHILE MAKING THEIR VISIT TO THE WOODS FARM.

ties in the way of productiveness, hardiness, etc., was good to eat. I suppose as long as growers can sell Baldwins for good prices they will grow them. When men are actuated more by the golden rule, they will plant more of the kind of apples they enjoy eating, and we shall be able to buy in the markets plenty of such high flavored dessert apples as Northern Spy, King, McIntosh, Newtown Pippin, Spitzenberg, etc., and if not so many barrels can be grown per acre, men will plant more acres. Those who eat them will want two or three times as many and so the demand for good apples will be increased.

How much does this progressive scientific orcharding pay? I have quoted somewhere in my reports of Western New York Horticultural meetings the words of a well known horticulturist who said there are many acres of orchards in western New York that the profits of one acre in one year will buy a good automobile, i. e., in the bearing year for the trees, but it will be understood that this is the best orcharding, not the average. Conservative fruit growers place the profits on good producing orchards, with a valuation of $1,000 per acre, at ten percent of this amount. I do not think it will be as easy to make maximum profits in extensive commercial orcharding elsewhere as in the Ontario fruit belt or perhaps the Hudson River Valley, where there are special conditions of climate and soil that are natural assets in fruit culture. But without question, there are few localities in our country where an abundance of the best apples cannot be grown for home use, and growing for market be made more or less profitable. The methods of western New York can be in a measure used on the average farm, to make the old, neglected orchard yield a large supply of better fruit for the family, for one of the needs of a higher civilization will be "more and better fruit."

Fighting the Bugs

Insects That Damage Orchard and Farm Crops. Where to Find Them and How They May Be Controlled

By W. C. O'Kane, New Hampshire Agricultural College.

One of the encouraging things that turn up occasionally in the eternal warfare against insect pests is the fact that some remedy or other that is recommended is also an ordinary feature of good farm practice.

It is that way with fall plowing. Half a dozen troublesome insects of field and garden happen to be in such location in the late fall that we can reach them by stirring the soil. One or two of them can be fought in almost no other way.

The Corn-Ear Worm and Its Work.

The pest that hits the mark most closely is the corn-ear worm, or cotton boll worm—for these two are really one and the same thing. In fact, there is a third name, the tobacco false budworm, and a fourth, the tomato fruit-worm, all applied to this one trouble-maker, according to the place where it is found at work.

It is a rather dark worm, an inch to an inch and a half long, and often more or less obscurely striped. The colors and markings vary a great deal, but always it is naked and somewhat greasy looking, like some of the common cutworms.

When infesting corn it eats its way along within the husk, devouring the young and tender kernels and some of the silk, and filling the cavity with excrement.

On cotton the worms become troublesome after corn has become so mature that the kernels are no longer "in the milk." A hole is bored into the boll, and the worm feeds more or less within.

Green tomatoes are attacked in much the same fashion; and so are the buds, flower-stalks and seed-pods of tobacco.

There are two or three generations of the worms in the course of a summer, but we are concerned here only with the last one before cold weather comes on, as we shall see, shortly.

The Peculiar Exit-Gallery.

No matter on what plant the worm has been at work, after it has completed its growth it descends to the ground and goes beneath the surface of the soil to transform to a pupa or "chrysalis," getting ready to issue later as an adult moth. Here is where its peculiar habit and ingenuity are its undoing, in the case of fall plowing.

As it works its way down into the ground the worm fills the hole behind it with soil. But once at a depth of three or four inches, it turns and makes a short, open gallery, part way to the surface. Then it retires to the bottom of this, and soon has transformed to the inert pupal stage, in which it remains until made over into a moth. The open gallery toward the surface is constructed to provide a means for the moth to get out. Soft-bodied, tender, and without means of digging far, the newly emerged adult moth needs this provision for its safe start in life. In the gallery thus provided the pupa of the last generation remains all winter. The moth does not come out again until next spring.

How Fall Plowing Interferes.

Now send a plow through the field in late fall, and you will surmise the result. The carefully-made exit galleries are destroyed. The pupa is buried beneath solid earth, which later is compacted by winter or spring rains.

Potato ruined by the wire worm.

When the season arrives for the moths to come out they are effectually imprisoned, and never reach the surface to lay eggs and start the life round once more.

It does not follow that it is always feasible or possible to fall plow a field that has suffered from the ravages of this pest, whether the attack has centered on corn, cotton or tobacco. Weather conditions or the demands of crop rotations may well make it out of the question. But if it can be done, there is much to be gained by it.

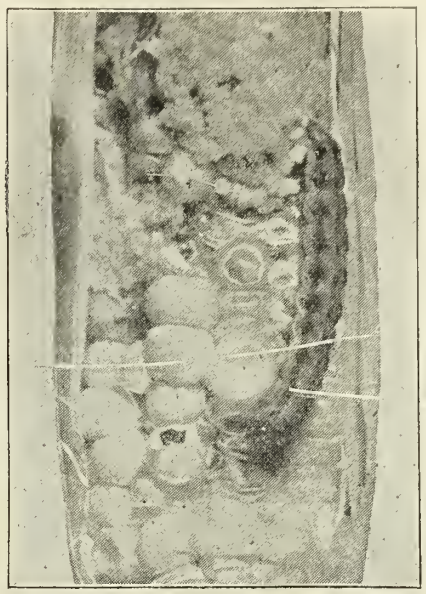
Other Pests Caught by the Plow.

Not only the corn-ear worm, but other pests may be subdued, partially at least, by the same operation. The corn-root louse is one of these. It is a tiny, soft-bodied, fragile creature and depends for its existence on the care given it by the little black or brown ants always found with it. Late cultivation breaks up the nests of the ants at a time when they are sluggish and unable to gather together again. The colonies of lice, left without their keepers, cannot survive the winter.

Wireworms and white grubs spend the winter in the ground. The former are slender, cylindrical worms, yellowish or brownish in color, tough and wiry-looking. The latter are white and thick-bodied, with the end of the abdomen somewhat dark and swollen. Cutworms winter in the soil as half-grown worms. Grasshoppers are in the egg stage; forty or fifty eggs in pod-shaped masses, an inch or so below the surface. In the garden the squash-borer is in a silk cocoon in the soil. All of these are disturbed by late plowing, buried deep or left on the surface for birds to find or frosts to kill.

Cleaning Up the Vineyard.

In the vineyard cleaning up rubbish and leaves is a good precaution. At least three serious pests may be greatly reduced by this means. The grape berry moth winters in little folded-over sections of the leaves. These sections are attached at first, but later drop away from the rest of the leaf. To reach them effectively it is necessary to plow or cultivate in addition to cleaning up. The grape

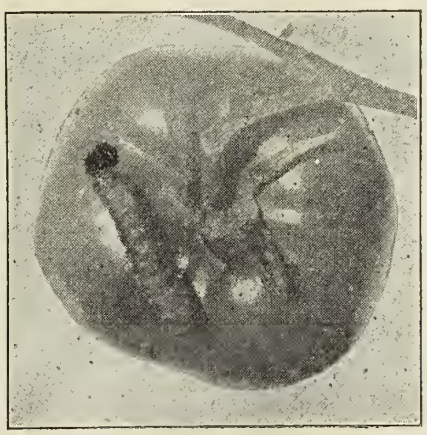


Corn-ear worm at work, eating the silk and young kernels.

leaf-folder uses a whole leaf instead of a piece of one. A general cleaning up will dispose of these over-wintering forms. The grape leaf-hopper hides away in rubbish of any kind in or near the vineyard. Like many other pests, it may thus be reduced in numbers if trash and fallen leaves are plowed under, or raked up and burned, though with this insect the treatment should extend to nearby fence-rows and the like. The same treatment will have an appreciable effect on another pest of the vineyard, the grape-vine flea-beetle, which winters as an adult in any convenient shelter.

Dodging the Trouble-Makers of Spring.

Where you can do it without going contrary to other important matters, give the field or vineyard a final cleaning up and turning over, provided, of course, that the weather conditions are not unfavorable. Espe-



The corn-ear worm in the role of the tomato fruit worm.

cially does this apply in the case of plats that have been troubled this summer by any of the pests mentioned above. Other measures may be necessary next spring or summer, but this will be a good start.

Very often the first pests in the field in spring are the ones that are most to be feared. With many species these overwintering individuals come out with the first warm weather and lay eggs for a host of destructive progeny later. One adult female less now may mean five hundred descendants out of the way.

(To be Continued)

Harvesting and Storing Cabbage.

Professor K. A. Kirkpatrick, Minnesota Extension Horticulturist, says: "The average farmers put forth an unbalanced effort in directing too much attention to producing a large crop and too little to marketing advantageously. The cabbage for example. For the past few years it has been marketed and harvested at from $5 to $7.50 per ton. The purchaser has stored it and sold it during the late winter for $50 or $60 per ton. This eight or tenfold advance in value might be justifiable if storage were vastly more difficult than production.

"Cabbage storing is rather simple and easy. The shrinkage is small. A cheaply constructed bank or hillside root cellar, or a basement under almost any farm building, is the only storehouse necessary. This should not be too dry and should be a place which could be kept at a temperature of about 40 or 50 degrees Fahrenheit in the early part of the season. This is often accomplished by opening the doors to let in the cool night air and closing them to keep out the warmer air during the remainder of the day. Later, of course, the doors must be kept closed continuously to prevent freezing.

"When harvested, the cabbage should be graded. Heads weighing seven or eight pounds each are preferred and should be grouped together. The remainder of the crop should be graded according to size.

"Only winter varieties should be stored. Among these the Danish, Ballhead and Holland are very good.

"In storing, most people place the heads in a cellar with all leaves and roots attached. Many market gardeners have a better plan. They cut off the stalk as though preparing the heads for market, but leave two or three rough leaves to protect the more tender parts. They then pack in ordinary cabbage crates and rack these crates up in the storage place, leaving a gangway every third or fourth tier for air circulation.

"This work is not particularly difficult or hazardous, and will certainly pay the grower well if it increases the selling price of his production eight or tenfold."

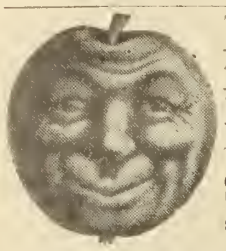
Fall Care of Alfalfa Fields.

Since an alfalfa field gives its best yields after the first year, it is necessary to obtain the best results, to have the plant pass through the winters successfully. A mistake that is often made in handling an alfalfa field is to pasture it down close or to cut it close late in the fall of the same year the alfalfa is sown. It should not be cut or pastured lower than four to six inches after the middle of September the first year, and it will be better to follow this practice during succeeding years. Under no circumstances should straw or strawy manure be applied to an alfalfa field with the idea in mind to protect the plants. Such applications usually kill out the alfalfa plants. There will be no harm come from the application of a light dressing of rotted manure carefully spread; but unless the soil on which alfalfa is planted is very poor, manure can usually be used to better advantage by applying it preceding some cultivated crop, such as corn or potatoes.

Plant outdoor bulbs, such as tulips, crocuses and daffodils. They should be set in a well-drained soil about three inches deep. Cover with strawy mulch as soon as the ground freezes.

The Fruit-Grower and Farmer

"The National Farm Magazine" St. Joseph, Missouri



Trade-Mark "Brother Jonathan" and Title Registered in U. S. Patent Office. Copyright, by The Fruit-Grower and Farmer, St. Joseph, Mo.

Address all communications and make remittances payable to The Fruit-Grower, and Farmer, Eighth and Charles Streets, St. Joseph, Mo.

WM. G. CAMPBELL, General Manager E. H. FAVOR, Horticultural Editor
JAMES M. IRVINE, Managing Editor F. B. NICHOLS, Agricultural Editor
C. R. GREISEN, Traveling Advertising Manager

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....J. C. BILLINGSLEA...First Nat'l Bank Bldg.
New York Office.....A. H. BILLINGSLEA.....No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS..821 New York Life Bldg.
St. Louis Office.....A. D. McKINNEY.....Third Nat'l Bank Bldg.
Minneapolis Office.....ROY. R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents an Agate Line. $7.00 an Inch. Fourteen lines to an inch.
Special Rates—Quarter Page, $78.75; Half Page, $147.00; Full Page, $280.00.
No advertising in class generally termed "objectionable" accepted under any conditions. Editions mailed first day of month. Forms close 20th of preceding month, i. e., January forms close December 20th, etc.

The Fruit-Grower and Farmer will place you in touch with over One Hundred Thousand of Most Prosperous Farmers in America

SUBSCRIPTION RATES—One Dollar a Year; Three Years, $2; Five Years, $3; Ten Years, $5—In Advance.
Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list. Write for Special Terms and Cash Commissions to Agents.

Remit Coin, Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 NOVEMBER, 1912 Number 11

Did You Lose Your Nerve?

Have we realized the price for apples this year which we expected or which we should have had? Have we done our best in selling our crop, or have we been frightened by the big crop stories and let the dealer make the price?

Not long ago I listened to a discussion about the probable prices for apples among some fruit growers in a neighborhood meeting called for the purpose. One fruit grower made a long talk, the essence of which was to not get frightened by the wonderful stories which were appearing in the daily papers of a nearby city, telling of the enormous crops and the great oversupply of apples. This grower went on to tell about the probable quantity of fruit which would be dumped on the market this fall on account of being of poor quality, and of the amount of better fruit which would be put in storage. This fruit grower also told how easy it would be to beat the buyers at their own game, and scoop in the big prices by holding the apples until the poor stuff was off the market.

It was an entertaining and convincing talk, but just like in the old story about the doctor who did not like to take his own medicine. This fruit grower went home and on that same day sold his crop at a price which was equivalent to 50 cents a barrel and did the hauling besides. By selling at this ridiculous figure this grower influenced, or frightened one other grower into selling a crop of extra fine apples at almost the same low figure. I know of several growers who have been led into selling their crops at small figures by the exceedingly low prices which are offered by the dealers, simply because they lost their nerve.

Fruit growers are just as bad as wheat growers; in fact, they are worse, when it comes to their inability to resist dumping their fruit on the market when harvest comes. Selling fruit is a cold-blooded business matter, and while farmers as a rule are regarded by merchants as able to drive a hard bargain when it comes to buying implements or supplies, they are "easy marks" when it comes to selling the crops they raise. What is the use of working hard for a season producing a crop of fruit and then sell it at a price which will give the grower less actual money after his bills are paid than he would have received had he spent the same amount of time working on the streets of a city or in a railroad section gang? Tell me, what is the use of it?

It is a demonstration of the fact that the one who does such is practicing extremely bad business methods.

There is not the least excuse for most of the wild scramble to sell the apple crop in the fall. The crop reports in this paper have shown the condition of the apple crop all over the country. They are the reports from people who are growing fruit and have been in almost direct contradiction to the big crop stories sent out broadcast by the dealers. In view of these reports there is no excuse whatever for any grower being led into believing the apple crop is so tremendously large. When the barrels are counted it is very doubtful if it will total much more than last year, and who got the money then? Did you? No, the dealer got it, as usual.

Shall We Sell or Consign?

Last summer a grower told me of a little experience he had had in consigning a small shipment of apples to a commission house in a nearby city. This grower had put the best of his fruit in cold storage. The fruit had been well grown, well graded and well packed. He had sold the bulk of his crop, little at a time, direct to the consumer, but as it was late in the season he wanted to clear up his storage space and sent this small shipment to be sold on consignment.

Before doing so, however, he wanted to be sure of the condition of his fruit. He opened every barrel and made a careful examination of its contents. The stock had been in storage for several months, and was not as bright and fresh looking as when it was removed from the trees, but it was in good merchantable condition and showed only a little scalding. The barrels were removed from the cold storage plant and immediately placed in a refrigerator car and shipped to the commission man in the city.

The fruit arrived promptly, and in due time the grower got a letter from the commission man telling him that the apples had arrived in bad condition, that the fruit in some of the barrels had sunk fully a third and the remainder were in very bad condition and practically unmarketable.

A berry growers' association decided that they would sell only f. o. b. on a strictly cash basis. A few lots of their earliest berries were sold in that way, but as the quality and the packing were poor, the buyers failed to realize the prices they expected. As a result they did not take any more of the stock from that association. But the crop ripened quickly. Cars were loaded, but the buyers failed to show up. Frantically the association telegraphed here and there naming their price, but no sales were made. No arrangements had been made for consigning the fruit and before an outlet was found the berries had rotted. Some of the growers decided to send some of their fruit to a few responsible dealers to be handled on commission, but the railroad company, badly in need of cars, refused to furnish them as promptly as they were desired, because of the failure of the association to dispose of the first ones, which had been standing on the track several days only to have their contents dumped and return no profit to the owners of the equipment. Small shipments were made by express, but because of mismanagement only losses were received.

Shall we sell or consign our produce? That is a big question and cannot be answered in one word. Good results are obtained by both methods. Just when we should sell and when consign is a matter that must be answered by each individual, and almost for each shipment. Commission men are frequently looked upon as crooks. Some of them are, and when they are found out they pay the penalty for their crookedness. The commission man is a necessary evil. Many accounts are handled to better advantage for the consumer where a crop is handled on account by some reputable commission firm than when sold outright. Many of the sins which we lay at the door of the commission man are our own fault, and one of the greatest of these is laying open the temptation for wrong doing.

Some men cannot resist this temptation. A shipment of fruit is received from a distant party. It is received in good condition and sold for a good price. The commission man, knowing the distance that lays between him and the shipper, yields to the temptation. He reports the shipment as arriving in bad order and selling for the freight charges or less and pockets all the money, trusting to good luck and distance that the consignor will never find out the difference. Many times they are never caught, but frequently they are and then they pay the penalty of the law.

Selling a crop f. o. b. for cash has the advantage of giving an immediate return, while consignments are always speculative. When good prices can be obtained by selling for cash, then sell. When such are hardly probable, it is far better to take the matter up with some of the good commission men in the market one desires to reach, have the shipment handled on consignment. It pays every association and every independent shipper to have an acquaintance with the commission men. Every business man knows that he gets better results in his transactions when he has an acquaintance with the party with whom he is doing business. Personal acquaintance is best, but to know each other by correspondence answers quite as well. It is only natural for us all to treat our friends with greater consideration than people we do not know or never heard of.

What Is the Remedy?

Successful manufacturers know to a cent what it costs them to make the various articles they manufacture. Printers and publishers know exactly what it costs to produce a printed page and what it costs to set a line of type. The printing business has been reduced to a systematic basis so that there is no guess work about how much any given job costs. The figures are down in black and white on the cost of production account, on top of which the profit is added. By having a systematic cost system and keeping it up, the printer or the manufacturer can tell on a moment's notice whether he is making or losing money, and where the profit or loss comes.

How about the fruit grower? How many of us who are producing orchard crops know what that fruit costs? If we did, we would not let buyers frighten us with their bugaboo stories of tremendous crops and glutted markets. The remedy is simple enough and is simply the application of common sense business methods to the business of selling the fruit we produce. By knowing what the crop costs we are in much better position to make a selling price, and know whether we are losing money or making a profit. Then the better we are in salesmanship the better we are equipped for selling our produce at a better profit.

A fruit grower who told me he sold cheap because he did not want to "hog the whole thing," had the wrong idea altogether. It is a good policy to "live and let live," but I insist that it is wrong to let the dealer double his money more than twice on the produce he buys from us.

Why the Paper Was Late.

The October issue of The Fruit-Grower and Farmer was very much behind time because of difficulties which were encountered in getting the paper printed on the new press. These difficulties were not altogether unexpected, but the loss of time caused a long delay in receiving the papers.

It is a big job to get a complicated piece of machinery, such as this new press, in perfect running order. There are considerably over a thousand separate pieces entering into the make-up of this press, and it takes considerable time to get every wheel and cog so that it does its duty properly.

We regret the delay in the October paper very much. Many of our subscribers have been greatly inconvenienced in selling their apples by not having access to the crop reports. "Proofs" of the crop report pages were sent to many subscribers who wrote us that they had not received their paper on time and who were anxious to see the reports. Many others wrote, wanting to know why they did not get their paper on time. The delay was unexpected. We are sorry it happened, but it was unavoidable, but we do not expect it to occur again.

Don't Sell the Corn.

About this time in the fall, there always is the temptation to sell corn "from the field," and accept the prices dealers are willing to pay when the rush to move the crop is on. Corn should not be sold from the farm in the first place, but if you do intend to sell, plan to get the best prices possible. And it is certain you will not get the best prices if you "dump" the grain now.

Hold the corn, for if this season works out according to the law of the average, you will make more easy money by holding it than you did growing it. There is not a great shrinkage in the winter in corn in the crib, at least not a shrinkage that is anywhere near the difference in price of the feed now and later. Put the corn in the crib, and get some benefit yourself of the market manipulation that is sure to take place.

RIFE RAMS
Reduce Cost of Irrigation
Rife Rams give higher efficiency than any other system of pumping water by water power—60 to 90 per cent.
Cost little to Install—nothing to operate.
Raise water 30 feet for every foot of fall.
Land above ditches watered at little or no expense. Pump automatically day and night, winter and summer. Fully guaranteed.
If there is a stream, pond or spring within a mile, write for plans, book and trial offer, FREE.
RIFE ENGINE CO.
2521 Trinity Bg., New York
RIFE RAM

Comments About Small Fruits

By L. R. Johnson, Missouri

Happy are those growers who have an unlimited supply of good mulching material. Here the wheat area is moving farther and farther from town and in diminishing quantity, and there is nothing to take the place of straw except manure from livery and private stable. This, fortunately, is still cheap, but the competition for it is growing keener yearly. Cheap manure would be best of all were it not for its weed and grass seed. To fill a hedge row of canes with a set of timothy and numerous kinds of weeds is to entail much expensive work or cut short the usefulness of the plantation.

Plenty of mulch is the secret of big, plump, juicy berries in all the small fruit tribe and in various ways excels cultivation, for a good mulch means not only the essential moisture, but fertility as well and a constant supply of humus in the soil that will keep it loose and open to air and water.

The first few years the Eldorado did not greatly recommend itself here, but, planted in another place, it has done much better the last two seasons. This year, especially, it was loaded with fine berries that were the first to ripen among the main crop varieties, and for the first time I feel like it had earned a place among future plantings. It resembles Taylor's Prolific in some respects, but its young canes have a pinkish hue while those of the former are yellow.

Now when we talk of a sterling old variety we certainly have it in Taylor's. This grand standard does not receive the encomiums to which it appears to be entitled. It is hardy as an oak; I never saw it rust; it ripens the bulk of its berries after the main crop; it excels every variety except the Early Harvest in productiveness; it is a rampant grower; its fruit is unusually sweet-flavored. I have heard the Taylor criticised for being thorny, but we have never experienced any trouble from that cause here. I should not fail to include it in any planting for market.

How close do you set your blackberry rows? I have tried various distances with the result that my present practice is to set them just as closely as will permit free passage for the pickers. Anything more than this I consider a waste of ground. Just how many feet this implies depends on the habit of growth of the variety. The Early Harvest is a moderate upright grower and can be managed with a minimum space between rows. Taylor's would demand a third more room, and so would most of the main croppers. From five to seven feet would be sufficient, I should say, depending in some measure on the richness of the soil. But these narrow middles necessitate an extra wide row at regular intervals, say at every fourth or every sixth row, for the passage of a wagon from which manure or mulch can be thrown to every row, and which is required to haul out the prunings as well as to carry the spray barrel. This middle for wagons should be laid off ten feet wide and at every sixth row there would be three rows on each side to reach with the manure fork, the fartherest being only the distance of two middles.

I find the demands for blackberries to be steadily on the increase, and if a careful record be kept of expenses, I believe this fruit would be a strong competitor for leading place among profitable small fruits. Its care is so simple and it has practically only one enemy, and that is rust, to which, however, some fine varieties are almost immune, so that by proper selection this risk can be eliminated. It is very rarely indeed that there is anything approaching a failure on the part of the blackberry; in fact, I have never known a complete failure, and their prices have g ne up along with everything else.

A Fruit-Grower reader from near Lincoln, Neb., writes to say that he has tried Campbell's Early grape and that its first and second crops were very promising. After that, though showing great vigor and hardiness, it failed to make good and returned only one-third or one-half crop. He says it was planted on a very rich soil. He asks how many buds I leave on a four-year-old vine. To this question I reply that the number of the buds should depend on the vigor of the vine as indicated by the preceding year's growth of new wood. On an average, I prune to twenty-four buds on four arms, two on first and two on second wire. If there has been a feeble growth, signifying too heavy a crop or a lack of fertility, I reduce the number according to judgment. This reference to the amount of wood growth is very important, and if not followed, may result in very uneven yields as well as damage to the vines. The new wood is an indicator that should always be first consulted before using the pruners.

Another interesting letter comes from Russellville, Ark. The writer of it relates that his Campbell's Early bore their first crop this year and that they "were far ahead of any other variety on his place," and he is so pleased that he will extend his planting of them. He describes the grapes as being "as large as plums, and the flavor leaving absolutely nothing to be desired." Commenting on varieties, he say that the Green Mountain is a fine grape, but finds it a poor seller on account of size. This is natural where people are not acquainted with the quality. Here I find the Delaware itself disdained by customers who judge only by the size. He has tried Munson's Headlight, "small in bunch and berry, the earliest in season by three weeks, will hang on a month, red when ripe, turning to almost black, never shells, flavor fine, but size is against it, though its very early season compensates to some degree."

Black rot and the leaf folder are the only two grape enemies of importance that he has to combat. A good many grapes shelled off last spring when the size of birdshot. I can only surmise that this was due to lack of pollination, aided, perhaps, by too heavy a set of fruit. He began spraying after blooming time and repeated every two weeks, but still lost many by the rot. Next spring he intends to begin when vines are dormant and again before blooming. I think spraying must depend on the season, whether dry or rainy. So far, I have found two sprayings sufficient, both applied after blooming.

Potato Storage.

According to K. A. Kirkpatrick, Extension Horticulturist, University Farm, St. Paul, Minn., the potato crop is large this year. The market is unsettled and many growers are in doubt whether to market or store. In many districts there is a great deal of scab, fusarium rot or second growth.

Under these conditions it hardly seems advisable to store unless the grower has good storage facilities at hand and a crop of unusually good quality. Potatoes must be in good condition and well ripened if they are to be stored advantageously. To store green potatoes is to court disaster.

Doubtless potatoes will advance in price as the winter progresses. The question is, can they be put on the market at the time when the demand is keen? For example, to store a few carloads some distance from the market and be unable to get them on the market when some cold snap or other condition sends prices up would be a losing proposition to the grower.

With regard to seed stock there is not so much doubt. Good, pure type seed will probably be very valuable property by spring because so much of the seed in this section is affected by rot, scab or other bad condition. To the writer, the best place to store this seed appears to be some such central point as Chicago. Here the cost of storage is not high. If well ripened seed of proper quality is selected, the gain of holding will undoubtedly more than offset the cost of storage.

"GOOD STUFF"

A Confirmeid Coffee Drinker Takes to Postum.

A housewife was recently surprised when cook served Postum instead of coffee. She says:

"For the last five or six years I have been troubled with nervousness, indigestion and heart trouble. I couldn't get any benefit from the doctor's medicine, so finally he ordered me to stop drinking coffee, which I did.

"I drank hot water while taking the doctor's medicine, with some improvement, then went back to coffee with the same old trouble as before.

"A new servant girl told me about Postum—said her folks used it and liked it in place of coffee. We got a package, but I told her I did not believe my husband would like it, as he was a great coffee drinker.

"To my surprise he called for a third cup, said it was "good stuff" and wanted to know what it was. We have used Postum ever since and both feel better than we have in years.

"My husband used to have bad spells with his stomach and would be sick three or four days, during which time he could not eat or drink anything. But since he gave up coffee and took to Postum, he has had no more trouble, and we now fully believe it was all caused by coffee.

"I have not had any return of my former troubles since drinking Postum, and feel better and can do more work than in the last ten years. We tell everyone about it—some say they tried it and did not like it. I tell them it makes all the difference as to how it's made. It should be made according to directions—then it's delicious."

Name given by Postum Co., Battle Creek, Mich. Read the book, "The Road to Wellville," in pkgs. "There's a reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

Great Majestic Malleable and Charcoal Iron Range

The Range With A Reputation

Buying a new range is a matter worthy of your most careful consideration. It is a mistake to buy from pretty pictures and glowing printed descriptions—very inferior ranges are plentifully applied with both. Before deciding upon a range, the wise woman will go to the local dealer handling them and examine closely into the superior points of merit of the *Great Majestic*—the range with a reputation, built on honor—of the best materials

Won't Break or Rust Like Steel—Outwears Three Ordinary Ranges

It is the ONLY range made of malleable iron and charcoal iron. Charcoal iron won't rust like steel—malleable iron can't break, and while the first cost of a *Great Majestic* may be more than others, *it outwears 3 ordinary ranges.*

All Copper Movable Reservoir

Heated through copper pocket stamped from one piece of copper, setting against fire. Holds 15 gal. By turning lever, frame and reservoir—moves away from fire—patented feature only on *Majestic.*

Perfect Baker—Fuel Saver

The *Majestic* is put together with rivets—joints and seams remain air tight.

The oven is lined with guaranteed *pure asbestos board,* put there to stay covered with an iron grate—*you can see it.* Uses but half the fuel used in other ranges, gives an absolutely even dependable baking heat.

Other Exclusive Features

All doors drop down and form perfect and rigid shelves. No springs anywhere to get out of fix. *Malleable oven racks* slide out automatically, holding anything they contain. *Open end ash pan*—no more shoveling ashes out of ash pit. *Ventilated ash pit* prevents floor from burning. *Ash cup* catches ashes. It's the best range at any price, and should be in YOUR kitchen. *All Malleable front insures the Majestic 300% greater strength at a point where all other ranges are weakest. One piece body, no seams. It's worth your while to investigate.*

The *Majestic* is for sale by the best dealers in nearly every county in 40 states. Write for our booklet, *"Range Comparison."*

Majestic Manufacturing Co., Dept. 92, St. Louis, Mo.

It Should Be In Your Kitchen

SPRAY

Let Us Send You Free Spraying Calendar and Directions

Building spraying machines is not a side issue with us. It is the whole of our business. For many years progressive fruit and vine growers have been looking to us for spraying machines rightly adapted to their needs. We not only build the best sprayers, but our book gives you valuable pointers on how and when to spray, the mixture to use, how to prepare, etc.

The Empire King Sprayer

Favorite with Thousands of Fruit Growers

Easy and simple to operate, gives strong spraying force and throws fine mist spray. Liquid is stirred automatically. Automatic brushes keep strainers clean so there is no clogging. A sprayer for fast, thorough, economical work.

We make Bucket, Barrel and Knapsack Sprayers, 4-Row Potato Sprayers and beyond all question the finest Gasoline Engine Orchard Spraying Rigs ever built. Gasoline Engines are all-purpose powers—can be used wherever power is needed on the farm.

Send for free catalogue and particulars.

FIELD FORCE PUMP COMPANY
58 11th St., Elmira, N. Y.

FIELD FORCE PUMP CO. The Leader "OSPRAYMO" LINE OF SPRAYERS ELMIRA, N.Y.

Reclaiming a Big Orchard

How an Old Orchard Was Reclaimed. Net Profit First Year Was $1600

By George W. Hood, Michigan Agricultural College

Does it pay to reclaim old orchards? Are the many thousands of trees in the old, neglected orchards of this country worth the time and trouble to reclaim them? Many leaders in fruit growing do not believe it will pay, and they can point to many examples where such work has not been a success. Usually, the men who have made the failures in this work have not had a proper knowledge of the work they were trying to do.

I was asked to give my opinion, recently, on reclaiming an old orchard that had received no care for nine years. The orchard was in Licking County, Ohio, two and one-half miles from Union Furnace. At one time it was called the "Summit Fruit Farm," now the "Apple Dale Fruit Farm." It contains 411 acres. All the land had been planted to fruit trees, but many had died. It was impossible to see the entire orchard from any one viewpoint, because hills and ravines alternated with one another.

As we drove over the place, hundreds of dead trees could be seen. Cherry, peach, plum and pear trees all stood as silent victims of disease and insect ravages. On we drove, picking

WATER FOR THE SPRAYERS WAS OBTAINED FROM PONDS MADE IN THE RAVINES.

our way through the growth of sassafras saplings, briars and dead trees, and many times the vehicle was entirely held off of the ground by brush. As we approached the south side of the place and came up on a crest, there, in the shadow of the hill seemed to be an impenetrable jungle. Here was the apple orchard I was to inspect. As I surveyed the surroundings, taking into consideration the details, my heart fell at the sight of so much neglect. Up and down the valley, and on the two hillsides were two thousand apple trees. It was impossible to distinguish any rows or any alignment of the trees. The hillsides and valleys presented the appearance of a second-growth of timber. There were sassafras trees six inches in diameter that towered ten feet above the orchard trees. Young maples, hickory, walnut, buckeye, oaks, and all trees native to that section were in abundance. Trailing vines, brambles and weeds filled up the rest of the ground. It was impossible to drive farther, so I stepped out of the carriage and began a more critical inspection.

Much to my surprise, the trees gave evidence of being in fair shape. The bark was green and healthy. No scale, the dreaded enemy of the orchardist, was present. The trees were thick with limbs, water sprouts were abundant, and the need of pruning was much in evidence. The trees were from fifteen to twenty years old, and never had produced a crop. Most of the trees were Ben Davis, Gano, Grimes and Wealthy. A few cankers were seen, but aside from this, they apparently were healthy and would yield profitable crops if given a chance. I advised the reclaiming, and work was begun.

The Problem of Rejuvenating.

The problem of how to rejuvenate orchards that have been neglected is important. Many people find upon the farms they have bought, perhaps an "abandoned farm," a half-acre or more of home orchard, planted many years before. More than likely it is in sod; perhaps it was cropped for a few years, or has been planted to grain in later years. The trees are stunted, under size and yet fairly healthy. They loose their leaves in summer from fungous diseases. The trees' tops are dense with water sprouts and interlacing branches. Worms of all kinds eat the fruit and foliage, and what fruit sets is scabby, knotty and undersized.

Such orchards are numerous, and only need cultivation, pruning, spraying and scientific methods applied to make them profitable.

The first questions that arise are what trees are worth saving, and how can we detect the healthy trees? To begin with, see whether all the limbs are alive; look close at the general condition of the trees and the color of the bark; note the growth that has taken place at the tips of the branches, and look closely for San Jose scale. By carefully summing up the above points, a conclusion can easily be reached, which will determine whether a tree is worth saving.

Cleaning Up Apple Dale

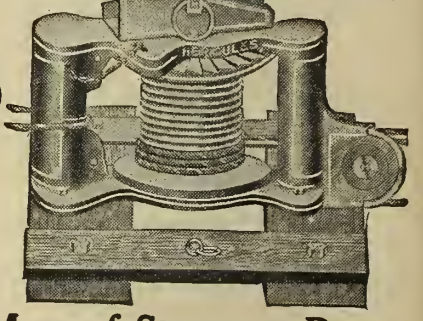
The work of reclaiming was a hard and hazardous undertaking, which took both energy and money. The large, second growth timber added greatly to the expense and inconvenience. From twenty to twenty-five men were hired, and the work of "cleaning up" was started. Things moved with more or less smoothness, and by the end of two months the orchard had been "dug out" of the forest, and gave a fair prospect of producing a crop. It must be remembered the work was delayed by bad weather, and the number of men varied from time to time. The saplings all were cut and piled in large windrows in the ravines, and between the rows. The problem of disposing of the brush soon became quite serious because of the lack of space for piling, and the added expenses of dragging out of the orchard. By planning and figuring, however, it all was disposed so it was possible to get through with a spray rig. After the larger brush was removed, a mowing

Stump Land Is the Richest Soil You Have

Pull Out the Stumps and Gain $1281 on 40 Acres the First Year

Look at the two photographs in this advertisement. The top photograph shows a field of stumps—40 acres. The bottom photograph shows the same field after the stumps have been pulled. In the top photograph the land is worth $20.00 per acre—or $600.00 in all. The bottom photo shows a crop of corn raised on the cleared land—land which has increased to double its former value—or a total *increase* of $600.00. On the cleared land, which is *virgin soil*, the owner raised a 1500-bushel crop of corn. At 50c per bushel—$750.00. And he will *continue* to raise a $750 crop of corn or wheat or oats *every year*—*netting money* that he would not get if he didn't pull out the stumps!

Write For Grand Book and Price!



HERCULES

All-Steel, Triple Power

Stump Puller

Pulls an Acre or More of Stumps a Day

It pulls the biggest stump, green tree or bunch of hedge in 5 minutes or less. It turns your stump land, *failure* land, into *money* land.

Wonderful Profits

It nets you at least $100.00 profit for every $1.00 invested. It clears your land once for *good*—takes out the roots and *all*. It enables you to farm *all* your land—all the land you own and pay taxes on.

30 Days Free Trial

Let me send you a Hercules on 30 days free trial. Pull the biggest stumps with it. See how it works. Note its many features—single, double or triple power—the *only* all-steel puller made—stump anchored or self-anchored—built low to the ground, polished and turned for lightest draft. Then—after the hardest trial for 30 days—send the Hercules back if it isn't all we say.

3 Year Guarantee

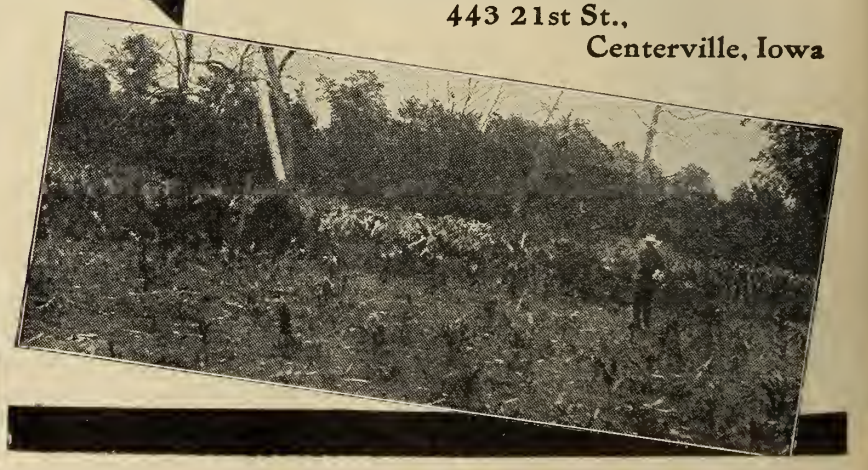
Beyond the trial, we back every Hercules with the strongest guarantee ever placed on *any* article for farm use. *If any casting of your all-steel Hercules should break, at any time within 3 years, return the broken part to us and we will promptly replace it free of charge.*

There are no conditions. The breakage may be your fault or the fault of construction or material. Whatever the cause—we replace the broken part.

Write Me a Postal NOW!

I am making a special price offer right now. I want to get at least one Hercules in every locality. Send me your name and I'll quote you a figure that will save you about 50% of the regular catalog price. My book will certainly interest you. It's a beauty. Shows photographs and letters from owners of Hercules machines. Send me your name now. A postal will do. Address

B. A. Fuller, President
HERCULES MFG. CO.
443 21st St.,
Centerville, Iowa



machine was run over the orchard, cutting all briers and tall grass. The trees then showed up fine. Thus the "reclaiming" of the fruit trees from the second growth timber was completed.

The pruning of two thousand trees, from fifteen to twenty years old, which have been neglected for ten years is no small undertaking. The trees were pruned quite severely, because they were dense with water sprouts and interlacing branches. The tops were opened so the sun and air could reach the inner branches. Many trees were cut back, or "headed-in," especially those which had grown tall in endeavoring to get above the rapidly-growing sassafras. All such trees were severely "topped back," and thinned out sparingly. In pruning of this kind it is inadvisable to remove all the extra wood the first year. The best time to do severe pruning is in the late winter or early spring, while the trees are still dormant. An important consideration in the pruning of a tree is to know where and how the cut should be made. Since the movement of prepared food is mainly from the leaves toward the roots, it follows that when a branch is cut off at some distance from the member that supports it, the wound usually will not heal unless there are leaves beyond the wound to manufacture food for the healing tissue. The cut should, therefore, be made close enough to the supporting member so it can be healed from the cambium of the latter. In all woody plants there usually is a more or less distinct swelling about the base of the branch, produced by the cambium of the supporting limb. Just beyond this swelling, a more or less distinct line marks the point where the cambium of the branch and of the supporting member unites. In a healthy tree, a wound made by cutting off a branch of reasonable size at this line usually will heal over promptly, but if the cut is made much farther out it will not heal. Wounds so large that they cannot heal promptly should be painted with white lead.

A GANG OF WORKMEN BEGINNING THE WORK OF CLEANING UP THE ORCHARD.

Spraying.

After the task of pruning was completed, our next step was a thorough cleaning out of all insect and fungous diseases. The way to do this is to have an effective sprayer, and use it. This we did.

Before the spraying could be done, the water problem confronted us. The land was rolling, with deep ravines between the hills. In three or four of the deeper valleys small creeks or streams were flowing during the greater part of the season. Four convenient sites along three streams were selected, and dams were built. Trees and brush were cut and thrown across the ditches, after which a team and scraper were used to cover them with soil. One pond was used to supply water the entire season, while the smaller ones went dry as the season advanced. Every dam was a paying proposition. A filler pump was used on the spray rig, and all that was necessary was the placing of the end of the hose into the pond, and two hundred gallons of water could be lifted to the tank in six minutes.

Four sprayings were given, the first just before the buds began to swell. This was with lime-sulphur, one to ten. The three remaining sprayings also were lime-sulphur, one to thirty-five, with three pounds of arsenate of lead to fifty gallons of water. The lime-sulphur was used to control fungous diseases, while the arsenate of lead was for the codling moth, canker worm and all leaf eating insects.

The Cultivation.

Owing to the hilliness of the orchard, it was practically impossible to cultivate to any extent. A block of ono hundred trees, which was on comparatively level land, was cultivated. The trees were Ben Davis, and were among the largest and oldest on the place. Cultivation was continued until July, when a cover crop was planted. The contrast between the cultivated and the uncultivated sections was remarkable. Of the one hundred trees on the cultivated plat, the average yield was fifteen bushels to the tree, while several trees produced as high as twenty-two bushels. The average was less than five bushels for the uncultivated trees.

Perhaps the most important consideration in any enterprise is: does it pay? Here are our results: The orchard contained two thousand trees. Owing to severe crowding and neglect, only 1,100 of the trees set fruit the first year, the remaining trees having many fruit spurs but lacking the vitality to produce flowers. From the trees that set fruit, all were so full that the fruit had to be thinned. About 5,500 bushels of apples were harvested, or an average of five bushels to the tree. Five bushels of apples from a fifteen or twenty-year-old tree is a small amount when the tree has been well cared for, but when a tree has been buried in a forest for ten years and it produces five bushels of apples the first year it is cared for, it is a good yield. It is just the beginning, and when a tree responds as quickly and with that amount of fruit the first year, what will it do later? Besides, even at this small quantity, and with only one-half of the trees bearing, the orchard paid for all improvements, tools and horses, and then gave a net profit of $1,600 the first year.

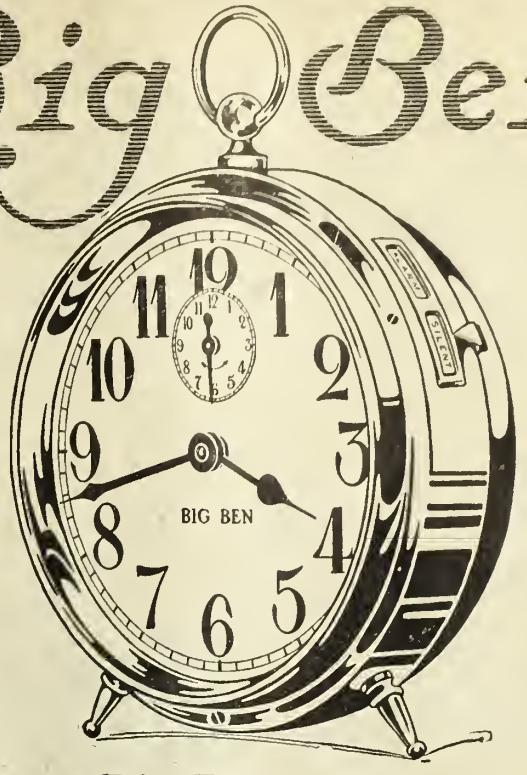
Apples were selling for $2.25 a barrel, which gave $4,100 for the crop. The outlay in equipment, horses, sprayer, pruning, cleaning, spray materials and in labor amounted to about $2,500, which, deducted from the total, gave a net return of $1,600. Think of it! Previous to this the orchard had never produced a marketable apple. Sixteen hundred dollars profit was made the first year after reclaiming, and when only half the trees bloomed. This coming season the enterprise gives promise of producing a ten to fifteen thousand dollar crop, and will continue to produce so long as care and attention are given it.

Look at your old trees, and get busy and see that they produce something. It can be done, and it is being done every year. This is only one example which serves to show what care and attention to old, neglected orchards will do.

Carefully clean seeds which are to be used next year, such as plums, melons, cantaloupes, pumpkins, high-bush cranberries, sandthorn and apples. These seeds may be sown in sandy soil this fall or put between layers of sand and kept until next spring. It is better to keep seed of this sort over winter in sand to prevent their drying out or becoming too wet if the ground is heavy, as where seed is planted in the fall in clay soil, the soil will be apt to pack over the seed, making it difficult for the seedlings to break through in the spring.

Many times a dollar's worth in a year's subscription to The Fruit-Grower and Farmer.

Big Ben



Big Ben ends the over-sleeping of Farm Hands

Will you spend Two-Fifty to insure yourself *for years* against that everlasting bother—*getting the farm hands in the fields on time?* Will you spend it to insure *a full days work* from each man six days out of every seven.

Then, spend it for Big Ben. He's doing it on thousands of farms every day right now. More than a million people have spent it for Big Ben to help them get to work on time. Don't you want to join the Big Ben Army. Don't you want your farm hands to be members?

Alarms are sold at $1.00 and $1.50 less than Big Ben costs but such alarms are merely things to *wake up* by, not to wake *on time* with. They enable you to make a *guess* at the right time, that's all.

Big Ben enables you to *know* the right time. *When he* wakes you he does it at the time you *want*, the *right time.*

Then, cheap alarms *may* last a year but Big Ben *actually* lasts for years *and* years. He's built of *steel.* He's a handsome *clock* plus a punctual alarm. You can use him all day long in any room for he fits bed room, parlor, dining room or hall.

The city man can get the right time of his neighbor or by picking up a telephone but that's not so convenient for *you.* You need a reliable timekeeper always in the house. That's why you need Big Ben more than you need a plain "alarm."

Big Ben rings just when you want and either way you want *five straight minutes* or *every half minute during ten minutes unless* you flag him off. His big keys make winding easy and his great open face and large hands tell the time plainly across the largest rooms.

Big Ben is sold by 18,000 jewelers. His price is $2.50 anywhere in the States. $3.00 anywhere in Canada.—If you cannot find him at your jeweler's a money order sent to *Westclox, La Salle, Illinois,* will bring him to you express charges paid. Put him right now on your Xmas list.

Prune 3 Trees

while your Neighbor Prunes One

Work from the ground, without ladders and without bruising the limbs, stripping the bark or injuring the trees. With the

MONARCH PRUNER

you work three times as fast and do better work. One stroke severs a stout branch. Cuts smooth and close, leaving no stubs or ragged wounds. Saw blade (attached in 10 seconds) cuts largest limbs. Lasts a lifetime. Pays for itself first day. *Money back if you say so.*

Write today for circular and prices.

We want one agent in every county. Splendid opportunity and exclusive territory for live men. Write today for terms that mean money for you.

THE MONARCH PRUNER & MFG. CO.
Dept. B Cincinnati, Ohio

Rubber Stamps

You need Rubber Stamps for marking berry boxes, crates, stationery, etc. Send for free catalogue.

Gardner Office Supply Co. SPRINGFIELD MISSOURI

Growing the Himalaya Berry

The Cultural Methods Which Are Essential to Success With This New Fruit

The Giant Himalaya Blackberry is not like ordinary blackberries, and this must be kept in mind in growing it. The vines are, perhaps, more like grape vines, for they have a perennial growth. One of the most distinctive features of this vine is the wonderful growth it makes. The canes often grow twenty-five feet in a season, and sometimes farther.

The plants do not reach their full development until the third year. The berries are jet black. When the vines are making a great stem growth they are not producing fruit spurs, and the vines must be pinched back if fruit production is the principal aim. When the vines are up on trellises, the central cane should be five feet long. The canes are small the first year, but after that they increase in size rapidly and they become quite large. The berries are small the first year, and they do not reach the maximum size or quality until the plants are three years old.

A. Mitting, Holland, Mich., has been prominent in introducing the Giant Himalaya Blackberry. He owns a farm on the shore of Black Lake, which is an inlet from Lake Michigan, and has another in the northern part of the state. The Giant Himalaya Blackberries did not winter-kill at Holland last winter, although many of the other varieties did. Mr. Mitting and his son planted a large acreage of this berry last spring to use for the production of berries to sell in city markets.

Berries Are Good Shippers.

The berries stand shipping well. If they are to be shipped long distances, they should be picked as soon as they are black. If they are to be shipped a comparatively short distance, they may be left on the vines until about three days after they have become black. They then will be larger than if they had been picked sooner, and the quality will be better. When the berries are intended for home use, they should be left on the vines until they are dead ripe. That is an important point, for the berries do not have so good a quality when they are just turning ripe as they have later. The Giant Himalaya berry will do best in a rich, sandy loam soil, with a south or an east exposure. The soil should be prepared at least six months before the plants are to be set, so there will be a large amount of available plant food. The vines should be planted five feet apart in the rows, and the rows should be ten feet apart. At this rate of planting, it takes 900 plants an acre. If the soil is fairly rich, there need be no application of fertilizer the first year, but the second year stable manure should be applied between the rows and cultivated into the soil.

In speaking of fungous injury, Mr. Mitting said: "I never have seen any appreciable injury to this berry either by insects or diseases. They never have attacked the plant. But to guard against fungous diseases, I would advise spraying with lime-sulphur mixture every spring."

Pinch Back the Canes.

In speaking of the care of the vines, Mr. Mitting said: "The plants should be left on the ground with the first season's growth, until they commence to grow the following spring. They then should be pruned back to where they have branches on the main cane. Then put up the trellises. Use good posts and put them one rod apart. Put the first wire sixteen inches from the ground, and two wires above this. Tie the new growth every week, and when the canes are five feet long, pinch them off. This will encourage the growth of fruit spurs. This pinching of the canes is essential, as the fruit comes from side branches and not from the main stem, and it is essential that there be plenty of side branches if there is to be a good formation of fruit.

"The first crop lasts about four weeks. Here at Holland, the vines commenced, this year, to bloom June 29, and the first berries were picked one month later. The picking season for this crop is about four weeks. The picking season for the crop the second year is about eight weeks. The reason for this is the crop the second year has the second set of branches that begin to bloom at about the time the first branches are maturing their fruit. The highest production of berries is not reached until the third year. A quart of Giant Himalaya berries weighs one pound two ounces."

The vines should be set in the spring, and if you desire to produce more plants, put the tips of the vines under the soil about September 1. You can continue, however, to put the tips under for several weeks. Dig up these tips the following spring.

The important thing to remember about this berry is its remarkable habits of growth, and you should understand the methods of culture fully before setting out a plantation.

MR. MITTING'S THREE-YEAR-OLD HIMALAYA BERRIES ARE HEAVY PRODUCERS.

SIX-FOOT STAKES CARRYING THREE WIRES ARE USED BY MR. MITTING AS A TRELLIS FOR THE HIMALAYA BERRY.

Teach Ice Cream Making.

Butter and cheese makers must keep up to date. They cannot leave their work for a long period. The Minnesota University has therefore provided expert practical dairymen to give the four weeks' course.

A new feature added this year is instruction in the making of ice cream as a side line to butter making. Dairy Hall, in which the strictly dairy portions of the course are given, is equipped with the latest apparatus. All students get actual practice in using and caring for the machinery and utensils. One season or more of experience in a creamery or cheese factory will be required for admission.

The lectures given include the latest and most reliable knowledge on co-operative dairying, creamery and cheese factory management, farming, judging and marketing dairy products, the chemistry of milk, dairy bacteriology, dairy engineering, animal hygiene, the breeding and feeding of dairy stock, economical milk production, forage, grain crops, management of pastures and meadows, management of barns, stables and yards and the construction of silos.

The next term of the dairy school will open November 11, 1912. Those who desire to enroll for the course will receive full information on application to Prof. T. L. Haecker, University Farm, St. Paul, Minn.

A DOCTOR'S TRIALS.

He Sometimes Gets Sick Like Other People.

Even doing good to people is hard work if you have too much of it to do.

An overworked Ohio doctor tells his experience:

"About three years ago, as the result of doing two men's work, attending a large practice and looking after the details of another business, my health broke down completely, and I was little better than a physical wreck.

"I suffered from indigestion and constipation, loss of weight and appetite, bloating and pain after meals, loss of memory and lack of nerve force for continued mental application.

"I became irritable, easily angered and despondent without cause. The heart's action became irregular and weak, with frequent attacks of palpitation during the first hour or two after retiring.

"Some Grape-Nuts and cut bananas came for my lunch one day and pleased me particularly with the result. I got more satisfaction from it than from anything I had eaten for months, and on further investigation and use, adopted Grape-Nuts for my morning and evening meals, served usually with cream and a sprinkle of

"My improvement was rapid and permanent, in weight as well as in physical and mental endurance. In a word, I am filled with the joy of living again, and continue the daily use of Grape-Nuts for breakfast and often for the evening meal.

"The little pamphlet, 'The Road to Wellville,' found in pkgs., is invariably saved and handed to some needy patient along with the indicated remedy."

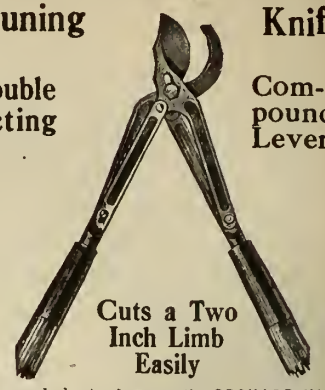
"There's a reason."

Name given by Postum Co., Battle Creek, Mich.

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

Orchard King Pruning Knife

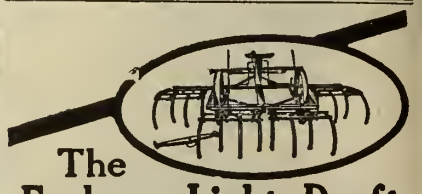
Double Acting — Compound Lever



Cuts a Two Inch Limb Easily

Ask your dealer to show you the ORCHARD KING KANSAS IMPROVED HAPPY THOUGHT and DETROIT PRUNING KNIVES. If not in stock, write for descriptive circulars and prices. Investigate, as nothing will substitute to your good.

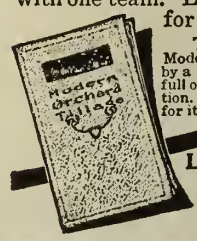
INTERNATIONAL TOOL CO.
171 Brooklyn Ave. Detroit, Mich.



The Forkner Light Draft Harrow

Hangs low and has great extension—you work right up to trees without disturbing boughs or fruit. With it you can cultivate 20 to 30 acres a day with one team. Low-priced, but built for long, hard service.

THIS BOOK FREE
Modern Orchard Tillage, written by a practical orchardist, chock-full of valuable information. Write for it.



Light Draft Harrow Company
607 E. Nevada St., Marshalltown, Iowa

NURSERYMEN

Notice=For Sale

Graft wood from the famous Rose Cliff Orchard, Waynesboro, Virginia. Free from scale and fungus troubles with bearing record unsurpassed. York Imperial, Winesap, Stayman Winesap, Ben Davis, Albemarle Pippin, Smith Cider and the famous Lowry. Write for quotations. Orders booked and filled in rotation.

ROSE CLIFF FRUIT FARM, Inc.
WAYNESBORO, VIRGINIA

40 ACRES OZARKS-$5

MONTHLY. IN BEST PART OF MISSOURI, 150 miles S. W. St. Louis, 10,000 acres sub-divided. Take your pick; fine fruit, grass, grain, vegetable land. Price $10 to $20 per acre, one-tenth down, balance easy payments. Your chance for home or investment.
LOTT, "THE LAND MAN"
307 Finance Building Kansas City, Mo.

Pure Cultures For Vinegar Making

By Walter G. Sackett, Colorado Agricultural College

In driving through the fruit growing sections of Colorado, one cannot fail to be impressed with the quantities of peaches and apples which go to waste annually, and more particularly during the season when prices are low, owing to an over-production. Such a practice would be condemned, most certainly, by any commercial firm, and rightfully so, as a most extravagant waste and far removed from any principle of scientific management. Talk to any captain of industry, and he will invariably tell you that the largest profits in his business accrue from the complete utilization of the waste products.

If this is true in other lines of commercial activity, is it not equally true for the fruit grower and farmer? It cannot be otherwise. With a comparatively small investment, this refuse fruit could be turned into a marketable product, vinegar, for which we pay forty cents per gallon in the retail market, and even at that price we often obtain a very inferior article with no assurance of its being pure cider vinegar.

Successful vinegar making has come to be regarded, by those who profess to know, as being as much of an art as any of the fermentation industries; yet, we continue to try to make vinegar at home by the same uncertain and unscientific methods that have been employed for hundreds of years. It is not at all uncommon to hear the complaint that certain cider will not make vinegar. This failure may be due to a variety of causes, such as unsuitable temperature, lack of sufficient sugar in the cider, vinegar diseases, dirty barrels, etc., but equally important, if not more important than any of these, is the absolute necessity of the presence of the proper micro-organisms to convert the cider into vinegar. This last factor in vinegar making is to often lost sight of, and to it alone many failure are directly traceable.

MR. A. MITTING IN HIS ONE-YEAR-OLD HIMALAYA BERRY FIELD.

In producing cider vinegar of superior quality, two distinct changes must take place in the sweet cider before vinegar is formed; first, the sugar must be converted into alcohol and carbon dioxide gas, resulting in the formation of hard cider; second, the alcohol formed in this manner must next be oxidized into acetic or vinegar acid. Both of these fermentation are accomplished by microscopic plants; the former by a yeast and the latter by an acetic acid germ. Now, under conditions of successful vinegar manufacture, these micro-organisms are either supplied by the air or they are added in a pure state by the vinegar maker in forms known as "pure cultures." It goes without saying that when we trust the air for these starters, we are very apt to get many undesirable and even detrimental forms, which will result in low grade vinegar of inferior quality and flavor. On the other hand, if pure cultures which have been shown experimentally to be particularly adapted to vinegar making, are employed, a high grade product of extra quality is practically assured, provided the other necessary precautions are taken.

The Bacteriological Laboratory of the Colorado Experiment Station at Ft. Collins will supply pure cultures for vinegar making at fifty cents per set to those who care to give them a trial. Full printed directions for their use are included. No guarantee, either expressed or implied, goes with the cultures, since it is not the purpose of the Experiment Station to exploit these products, but rather to distribute them at the cost of production for experimental purposes. Inasmuch as one of the cultures is to be added to the sweet cider, they should be obtained a few days, not longer, before the cider is to be made.

Don't Forget the Repairs.

As you are putting the machinery away this year, be certain you look every implement over carefully, and see the parts that are about worn out. One of the besetting sins of many men is they will not repair farm machinery until machines break down. That of itself is not so bad, if the parts have been ordered so repairs can be made quickly. Usually, time must be taken to telegraph to some central house to order the parts, and some valuable time and often crops must be lost while the men and the power are killing time waiting for repairs.

Make up your mind to cut out this "bonehead" time and energy this year. There is no reason why you should not have your machines in good condition next summer when you start into the season's work, if you will go to the trouble to attend to them this fall. Such work can be done much better when you are not rushed than it can in the midst of the season's campaign.

Rhubarb for winter use may be dug just before the ground freezes hard in the fall. Leave the plants on top of the ground, slightly covered with hay, or something to prevent their drying out, and allow them to freeze for several weeks. About Christmas time the roots may be taken into the cellar, or other dark, moderately warm location, and buried in just enough soil to cover the roots. Water and allow the plant to grow.

A Million Persons

Breakfast every morning on

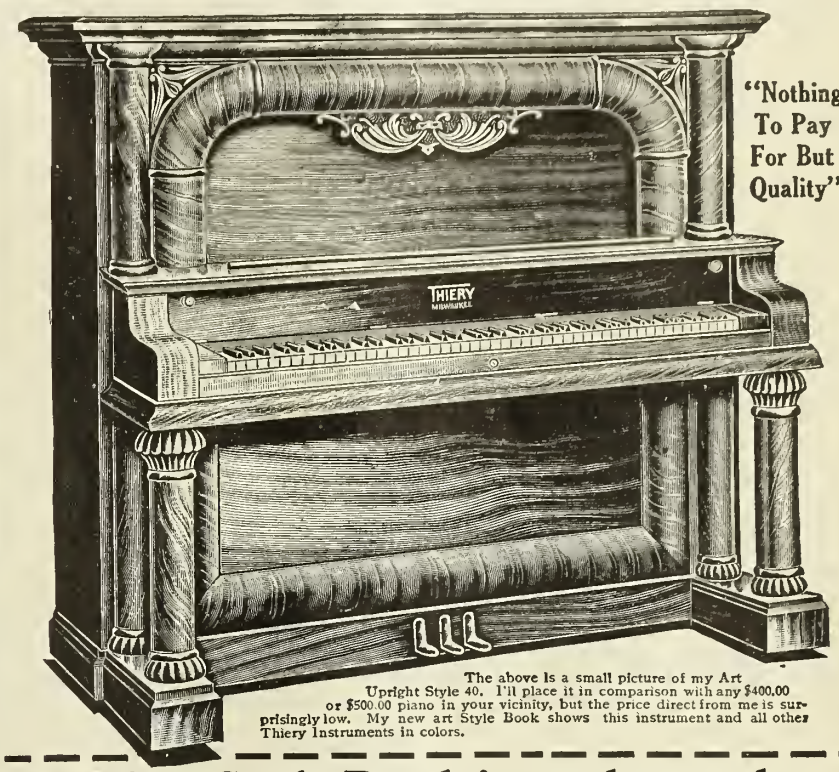
Post Toasties

Suppose you try the food with cream and sugar, as part of breakfast or supper.

You may be sure it will be a delicious part.

"The Memory Lingers"

Postum Cereal Company, Ltd., Battle Creek, Mich.



"Nothing To Pay For But Quality"

The above is a small picture of my Art Upright Style 40. I'll place it in comparison with any $400.00 or $500.00 piano in your vicinity, but the price direct from me is surprisingly low. My new art Style Book shows this instrument and all other Thiery Instruments in colors.

My New Style Book is ready—and my 1913 Buying Plans and Straight-to-You-Prices.

Just like finding money when you buy a Thiery Piano—"Nothing-to-Pay-for-but-Quality"—no tidy profits to pay to agents or dealers—thirty days real free trial—all freight paid—no money in advance. Just fill out the coupon below and send to me.

More than half the pianos made are like cheap watches—they are merely good looking cases with the inside quality LEFT OUT! There is no chance for you to be satisfied with a piano like that—the odds are all against you.

Don't start a deal anywhere—don't even think of buying a piano from an agent anywhere until you get my book and plans. Just fill out the coupon below and send it to me. What you will receive by return mail will surprise you.

"Nothing to pay for but Quality" when you buy a Thiery Piano because no agents to deal with—no fancy profits to middlemen.

FREE

Just fill out the coupon below and send it to me and my new 1913 Style Book goes to you at once postpaid together with special letter and direct to you prices and terms.

If you are an organ buyer, you can get my organ book, printed in colors. It will interest you and show you how you can save $25.00 to $50.00 on an organ.

Any Thiery Piano you choose from my Style Book is yours, freight prepaid, nothing to pay in advance—no deposits—nothing to do but try and test it at my expense for thirty days and merely ship back if you are not glad that you ordered it. If you are not a cash buyer, you can have all the credit you need. A hundred and one ways to purchase. Not the commonly advertised so-much-a-month-plan, but a hundred and one different ways. Quarterly—semi-annual or annual payments—my special letter will tell you all about them.

Every Thiery Piano is fully warranted, not just for a few years, but by a real guarantee, which warrants the piano just as long as you keep it, against any defect in material or workmanship. The new 1913 Thiery Pianos all have genuine ivory keys, not celluloid or imitation. They all have double veneered cabinets both inside and out, in genuine mahogany and burl walnut. They have polished brass hinges and trimmings and the pedals are the best quality brass. They have Empire Grand Tops—nickel plated tuning pins and copper overstrung strings in bass. And, without extra charge, you can now have Thiery Pianos in the new and popular Art Finish.

I pay the freight

30 DAYS FREE TRIAL

Thiery Pianos are quality pianos and they are the greatest values offered direct to the home today. Many readers of this paper have them in their homes and with my book you will receive scores of testimonial letters. Send the coupon now—the book is all ready to go to you post-paid.

J. B. THIERY The Piano and Organ Man **Milwaukee, Wis.**

J. B. THIERY, The Piano and Organ Man, Milwaukee, Wis.—Without slightest obligation on my part, please send to me at once, postpaid, your beautiful New 1913 Style Book, with Special Letter, Net Price List and full particulars of your 1913 buying plans and offers, as advertised in Fruit-Grower and Farmer.

☐ PIANO STYLE BOOK

☐ ORGAN STYLE BOOK 45

NAME _____

PLACE AN (X) MARK IN SQUARE OPPOSITE BOOK YOU WANT

Apples in Shenandoah Valley

Varieties Planted—Manner of Improbing the Soil and Holw the Fruit Is Marketed

By James Craig, Virginia

Twenty years ago I bought a twenty-acre winter-apple orchard, situated near Waynesboro in the Shenandoah Valley, and started in to improve it according to what was then the standard for cultivation and pruning. I learned something every month, and ten years ago, when I was planting my second orchard of ten acres, I adopted the modern method of low heading and open center tree. Now that I have this shaped tree in full bearing, I find that I get more apples, better colored apples than on trees of other shape. They have brought me $8 a barrel in the London market.

Today I have in my "Rose Cliff" orchard of ninety-seven acres, 3,500 apple trees, ranging in age from seven to twenty-five years. The varieties are the ones that I found are best suited to this section, such as York Imperial, Winesaps, Albemarle Pippins, Stayman Winesaps and our new Virginia apple, the "Lowry." It is the best of all. My trees are planted in blocks in relation to the pollination of the bloom of the different varieties. The crop now on my trees is the seventeenth consecutive one and the only improvement I know of to aid to the fertility of the bloom will be honey bees. We have never failed to have a full setting of buds, and although I have never lost a crop of apples from frost, two years ago I installed orchard heaters which I used for three nights, raising the temperature from 24 to 38 degrees. Frost protection is necessary in part of my orchard, which is located on flat land along the bank of the Shenandoah river.

Improving the Soil.

I practice clean cultivation between all of my trees, starting with the winter plowing, followed in March and April with the harrowing, and continue to the 15th day of July. At this date we sow among the young trees, under five years of age, cowpeas to add to the soil the required plant food to make strong fruit wood. This method, coupled with scientific summer pruning, results in making the apple tree bear a profitable crop at the fifth year after planting. For instance, my Lowry orchard, now seven years old, has borne three crops as follows: At the fifth year, one-half box to the tree; at the sixth year, three and one-half boxes per tree, and this year, the seventh, I estimate three and three-fourths boxes per tree; fifty trees to the acre.

We use a limited quantity of fertilizer, principally phosphate, as my soils do not require any other fertilizer other than phosphorus. I turn the ripened pea vines under with a plow so as to secure the humus in the soil, and I am a strong believer in red clover as a cover crop in an orchard where the soil needs humus and nitrogen.

We prune thoroughly every year, aiming to leave an open head, not the extreme, but with ventilation for air and sunlight that will not admit too much hot sunshine on the fruit that we have learned to grow on the large limbs inside the tree. I have been very successful in obtaining a setting of fruit throughout all of the main limbs, from the trunk to the terminals. I like a setting of fruit through the center of the trees, as I find that the fixed cost to spray, thin and pick is lessened thereby. In our younger trees we have adopted the vase system and will continue to maintain low heads and prune our trees to get full benefit of the sun and air.

We thin all of the fruit on our trees in June, leaving no two apples touching, as I have proved the results in better quality of fruit pays me handsome dividends for this branch of orcharding.

"No Foliage, No Fruit."

Just as it is true that "no foliage, no fruit," so true is it that commercial orchards must be thoroughly sprayed. I spray all of my trees in the dormant season, November to March, with lime-sulphur, 8 to 50. As the buds are opening, we spray with lime-sulphur 1¼ to 50 to prevent scab and fungous trouble. We have no scale, so our winter spray is for fungous trouble, and as a scale preventive. After the bud period and at the time to spray for codling moth, we use lime-sulphur, 1 to 40, containing one pound of arsenate of lead in dry form. I find this to be a very satisfactory method, as it is much easier to get the mixture by using the dry lead than in the paste form. The dry lead gives a more uniform quantity throughout the mixture. Our second spray for the moth is about fifteen days after the first spraying, then again about the 1st to 10th of July, with the same mixture and about the 20th of August we use the same quantity of arsenate of lead with bordeaux mixture. This last spray is found very beneficial in preventing bitter rot and brown rot, and my experience has been that apples sprayed with bordeaux keep much better in storage than under the lime-sulphur spraying.

I grade my apples to uniform size, making the "extra fancy grade" two and three-fourths inches and upward. I pack nothing under two and one-half inches, and this grade has to be perfect, free from all blemishes, and of full color. I have built a concrete packing house and installed a home-made grading machine and for several years have had expert packers from the Pacific Northwest handling my box apples. I box my fancy varieties, which are the Lowry, Winesap, Stayman, Pippin and Rome Beauty. I formerly used the California box, but intend this season to use the regular Oregon box. We line our boxes with white paper, wrap our apples in carefully selected wrapping paper. We use nothing but the white wood boxes, the best we can buy. My aim is to grow the best fruit and place it on the market in the most attractive packages, and the prices that I have been receiving indicate that our grades are uniform and that the packages and packing are acceptable to the large Eastern city markets.

I am a mile and a half from the two freight depots at Waynesboro. All of my fruit is hauled on spring wagons and everything is done to get the apples into cold storage in the minimum of time. The record so far is eighty-five minutes from the time the apple is picked off the tree to the time the packed box is placed in the railroad car.

Fruit Brings Premium Prices.

I keep track of the sales in a dozen city markets and aim to place my fruit in the city where the highest

Inter-State

"Car Service and Car Convenience"

The Long Stroke Motor

The Inter-State long stroke motor answers to your urging with a full inch longer step.

That longer step means more power—steadier power—less effort—less heat—less oil—less gasoline.

Multiple Disc Clutch

The tremendous Inter-State engine power is transmitted through a multiple disc, cork insert clutch.

The clutch engages smoothly, eliminating sudden jerking and straining on the engine and axle.

Full Floating Rear Axle.

The Inter-State full floating rear axle needs no expression of merit.

It is the highest type of axle made and embodies the best principles of the entire axle industry.

Electric Self-Starter.

It had already reached its highest development before it was even considered as an Inter-State specification.

The Inter-State electric starter is operated by turning a switch at the driver's seat.

It will revolve the motor continuously for 50 minutes—or until the motor picks up under its own power—at which time the apparatus becomes disconnected as a starting device, and operates as an electric generator, used to furnish storage for ignition and lighting.

Electric Lights.

The Inter-State is equipped throughout with electric lights.

The powerful searchlights, capable of throwing their piercing rays 1,000 feet—two handsome sidelights—one tail and one speedometer light—all operated by turning switch at the driver's seat.

Automatic Tire Pump

Every Inter-State car is equipped with an automatic motor driven tire pump which sends clean, fresh air into the tires without any exertion whatsoever on your part.

Equipment

Your Inter-State comes to you as "distinctively complete" as any automobile manufacturer knows how to make it.

Mohair top, side curtains, automatic wind shield, speedometer and clock, complete kit of tools, are only a part of what we consider full equipment.

40—Five Passenger Touring Car	$2400
41—Four Passenger Demi-Tonneau	2400
42—Two Passenger Roadster	2400
50—Five Passenger Touring Car	3400
51—Four Passenger Demi-Tonneau	3400
52—Two Passenger Roadster	3400

You may pay more, but you cannot buy better value than the Inter-State.
Write Today for the Name of the Inter-State Dealer in Your Territory.

The Inter-State Automobile Co., Muncie, Indiana
1011 FIRST STREET

Unequipped and without Self starter—30A $1700—32B $1750

The Marlin Model 20
REPEATING RIFLE

You can buy no better gun for target work and all small game up to 200 yards.

Without change of mechanism it handles .22 short, long or long-rifle cartridges perfectly. The deep Ballard rifling develops maximum power and accuracy and adds years to the life of rifles.

The solid top is protection from defective cartridges—prevents powder and gases from being blown back. The side ejection never lets ejected shells spoil your bead and allows quick, accurate repeat shots. With simple take-down construction, removable action parts,—least parts of any .22—it is the quickest and easiest to clean. A great vacation rifle. Ask any gun dealer.

The 136 page *Marlin* catalog will help you decide what rifle best suits your individual desires. Send 3 stamps for it today.

The Marlin Firearms Co.
139 Willow Street New Haven, Conn.

THE SOUTHERN FIELD
FACTS ABOUT THE SOUTHEAST
FREE ON REQUEST

Farm Lands Average Less Than $17 Per Acre.
Undeveloped tracts sell from $6 up. Beef, pork, dairying, poultry, sheep and horses make big profits. Large returns from alfalfa, corn, truck, cotton, apples, fruits and nuts. Growers command good local and Northern Markets.

The Southern Railway Mobile & Ohio Railroad or Georgia So. & Florida Ry. territory offers the finest conditions for farms and homes. Plenty of rain, mild winters, enjoyable summers. Promising *industrial openings* everywhere. The Southern Railway has nothing to sell; we want YOU in the Southeast. The "Southern Field," state booklets and all facts free.
M. V. RICHARDS, Land & Industrial Agent, Room 33 Washington, D. C.

prices are being obtained. I sell most of my apples through my own agents, using the cold storage houses in Richmond, Cincinnati, New York and other cities. I like the export trade and have been successful in rushing my York Imperials through from the trees to Glasgow, London and Liverpool. Two years ago I received 32 shillings, or $8 per barrel of three bushels, the highest price for American apples in Liverpool on October 10.

Of course general market conditions govern the selling prices. Here are the results for last year: My box pack, extra fancy Lowry, brought me $5, my highest grade of Winesap $3.50 per box, my lowest grade sold for $1.50 per box. In most cases I have realized a premium over the ordinary market.

My York Imperials, Ben Davis and similar apples I pack in barrels exclusively, as I have an established barrel trade in the Southern cities where my brand, "Rose Cliff," is well known. I find that the fruit dealers want good fruit in an attractive package, and I have made it a point to use nothing but the whitest barrel staves, the best cut hoops and headings that we can find. We line our barrels with paper, using the corrugated head and paper cap with a lithographed label. On the tail of our barrel we use an excelsior cushion. All of my barrel pack is done in the orchard, where I use a packer's table which is advanced along the tree rows. The apples are carefully lowered into the barrels in small quantities with the use of an apron attached to the end of the packer's table and I have trained my barrel packers to avoid dropping the apples into the barrel and bruising them. The barrels are thoroughly shaken and made tight before pressing, a padded platten is held on the barrel as they are shaken into a compact condition. My success with the barrel pack has been due to rigid inspection and close grading and allowing no drops or bruised apples in the barrels, and making the pack uniform from one end to the other. I put a packers ticket in each barrel, asking to be notified, if the fruit is not satisfactory.

The Lowry Apple.

Twelve years ago I realized that my success lay in selling a barrel of apples that was of uniform grade, and I established a cider mill to work up my culls, drops and inferior fruit. This cider mill was a success from the start, and I feel confident that it has assisted me in maintaining a standard grade.

The Lowry is my choice of apples from these standpoints: Quality, flavor, size, shape. I consider it the best apple grown in the east for both dessert and cooking purposes.

It is the most wonderful apple we have ever grown. The trees are sturdy and vigorous in the nursery row. They are short growers in planting, they respond readily to the modern method of heading and pruning, and are naturally an upright grower with the fruit wood as strong as hickory. In fact I have never seen a Lowry tree break down under the weight of fruit. The fruit hangs single on the limbs, and my seven-year-old Lowries this year were fruited within three feet of the ground.

As the Lowry is not universally known, I am going to describe it for you: A semi-oblong apple with a long stem and shallow calyx cup, a yellow body, heavily striped with a deep red, which, when the apple is fully ripened, is the color of port wine and entirely covers the apple from stem to calyx; the skin is clear and very thin, covered with small salmon spots, and the flesh is white, crisp and juicy. It holds its shape and flavor and full lusciousness for eight months after it is picked and packed. The flavor is a sub-acid with a good aroma and experts who have eaten the Lowry for the first time pronounce it as "an apple that satisfies."

It is an all-around family apple, bakes well and cooks in other ways, with little waste and retains its flavor. For a person who cannot stand an acid apple and who does not like a sweet one, the Lowry fills the bill exactly. Of course from the grower's standpoint the wonderful keeping quality of the Lowry makes it very profitable. I kept one in the drawer of my desk in a heated office for four months, and at the end it was not shriveled, and had not lost its flavor.

The next best apple is the old, red Winesap; after that the Albemarle Pippin, the Rome Beauty next, and then the York Imperial. These are our principal varieties and the ones we depend on for commercial purposes and the most profitable for shipment to American and foreign markets.

Field Selection of Seed Corn.

The increased yield of shelled corn per acre is the purpose of field selection. Strong germination is one of the incidentals that can be taken care of later by a germination test. Knowledge of ancestry is almost as desirable for seed corn as for dairy animals. Field selection gives some knowledge of ancestry.

Seed should not be selected from a stalk near barren stalks. There would be a strong chance that the barren stalk was one of its parents and that it would tend to produce other barren stalks.

Moderately good ears from a thick stand are better seed than very fine looking ears from a thin stand where they have had an extra supply of sunshine, moisture, and plant foods.

Seed corn from highly manured soil has been found a little lower in yield than seed from soil which had not been fertilized for 16 years. Seed selected from land planted five stalks per hill produced more corn than seed selected from land planted either one or three stalks per hill. It wasn't such fine looking seed, but it produced the yields.

Moderately long ears produced higher yields than short ears twenty-one times out of twenty-two in five years' tests.

The lower yielding short ears invariably exceeded the longer ones in circumference. Greater circumference, then, does not mean greater yielding power.

The heavier ears usually give higher yields. This weight should accompany reasonable length, circumference and shelling percentage. Immaturity must throw it out, however.

Creased—dented ears produced a little more than rough dented ears. Ears selected from the plant averaged over three bushels per acre more than wagon shelled seed from the same field. The wagon shelled ears were shorter in size and general appearance, but the mother plant and its surroundings were not definitely known.

More information may be obtained from Bulletin No. 212 of the Ohio Experiment Station, Wooster, Ohio.

Although this corn was grown in Ohio, the results are worth our consideration. Differences in season should be kept in mind.—J. O. Rankin.

Plow the fields deeply this fall. Deep plowing turns up new soil, which is weathered by the freezing and thawing of winter, and put into condition for better tilth next year. Deep plowing also enables the soil to store up more of the winter rains than is possible where the field is not plowed.

A Proverb of Bell Service

Once upon a time there dwelt on the banks of the holy river Ganges a great sage, by name Vishnu-sarman.

When King Sudarsana appealed to the wise men to instruct his wayward sons, Vishnu-sarman undertook the task, teaching the princes by means of fables and proverbs.

Among his philosophical sayings was this:

"To one whose foot is covered with a shoe, the earth appears all carpeted with leather."

This parable of sixteen hundred years ago, which applied to walking, applies today to talking. It explains the necessity of one telephone system.

For one man to bring seven million persons together so that he could talk with whom he chose would be almost as difficult as to carpet the whole earth with leather. He would be hampered by the multitude. There would not be elbow room for anybody.

For one man to visit and talk with a comparatively small number of distant persons would be a tedious, discouraging and almost impossible task.

But with the Bell System providing Universal Service the old proverb may be changed to read:

To one who has a Bell Telephone at his lips, the whole nation is within speaking distance.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

Every Bell Telephone is the Center of the System.

FRUIT TREES

Grown right, whole root budded stock,
Properly handled, carefully packed.
Sold right, direct to the Planter.
No Agents. No Commissions.

Specialist in High-Grade Nursery Stock. Fruit and Ornamental. Send for Descriptive Catalog (postage alone is 5 cents). Free if this paper is mentioned.

J. B. PILKINGTON
NURSERYMAN
PORTLAND OREGON

$29.50 Buys This Elegant Top Buggy.

WARRANTED FOR Five Years.

Retail Price $60.00. Buggies, Surreys, Spring Wagons, Farm Wagons. We have cut out our Jobbers, our Wholesalers and our Retailers and offer YOU their profit. Write today for our

Free Catalog and Delivered Prices

Mutual Carriage & Harness Mfg. Co.,
Station 35-S East St. Louis, Illinois, or
200 5th Avenue, New York City.

A Long War on Grape Insects

A Ten Years' Struggle to Find Effectibe Means to Control the Grape Root Worm and Leaf Hopper Which Threatened Destruction to the Chautauqua Vineyards. What the Remedies Are

By A. E. Loomis, Pennsylbania

Ten years ago the Lake Erie Valley grape belt was in prosperous condition. It was then, as it looks today, and as it will continue to be, now that the invader has been repulsed and the industry again placed on a safe foundation, a veritable garden of the Lord. Along this sheltered shore, with a watershed marking the divide between the Allegany River basin and the Great Lakes but a few miles to the South, and the tempering waters of the lake washing its long stretch of beach to the north, extending from within sight of the smoking blast furnaces of Buffalo on the East, to the environs of the city of Erie, Pa., on the West, had been planted, trellised and trained the vines of the largest vineyard area in a compact form in the United States. Forty thousand acres of bearing grape vineyards were included in this section, all within a few hours' journey by rail, or almost within a day's journey with a team. In some townships of this area, so nearly was all the land planted to vineyards that even the dairy products were not raised to supply the vineyard laborers and owners.

The industry had been prosperous. The crop had been marketed with uniform profits to the owners of the vineyards. It is true that there had been times of great depression, and competition in selling the big, easily perishable crop had caused serious losses. But co-operative marketing had been established, and the annual product in round numbers had run close to the two million dollar mark, with a profit for every acre of well kept vineyard. This immense sum of money, distributed between about three or four thousand vineyard owners, had been sufficient to establish homes of comfort and beauty seldom seen in the rural section of America.

Peculiar climatic conditions had made this the chief vineyard area of the entire country east of the Rocky Mountains. The peculiarly attractive flavor of ripe grapes, and its varied uses in the manufacture of wine and unfermented grape juice, made for the grape a steady and constant market, and here alone was its culture successful up to the time of which we speak. In the days of farm depressions throughout the East during the decade between 1892 and 1902, there was not another area of farm land which produced the revenue and commanded the price per acre as did this grape land of the Lake Erie grape belt.

The Grape Root Worm.

There is nothing strange, viewed in the light of the now well known physical laws, that this concentration of one industry in one small area should have been followed by the development of virulent insect enemies. The wonder is, rather, that the attack did not come earlier. Nature has a way of keeping extremes reduced, and the history of specialized industries now multiplies instances just like the experiences of the grape growers. Insects which, under normal conditions, may have a variety of food plants and habitat, seem, when one specialized industry obtains a foothold in a locality, to develop a special fondness for that plant, and to multiply with surprising vigor upon their new feeding materials.

In 1902 came the first rumble of the approaching attack in force on the rich grape vineyards of the west end of the grape belt. The first trouble came from the Fidia viticidia, commonly called the grape root worm. This insect was not a new one to entomologists, but was new in the experience of the grape growers. This pest worked a full year in some vineyards where it first appeared in numbers, before general attention was directed toward it. In the meantime it had spread, and trouble was abroad at last and in force.

It was found that this pest had served a very successful apprenticeship in the vineyards of northern Ohio, before reaching the New York and Pennsylvania vineyards. Around Mentor and Painesville its work had left little but vineyard ruin. One single bulletin from the Ohio station at Wooster could be found which gave some light on its ways, but no help as to what to do. The New York vineyardists petitioned their agricultural college and experiment station, and even the state department of agriculture for help, and some of the best men in the work were put on the job. Names which will live in horticultural history appeared in this initial skirmish. John Craig and Professor Slingerland of Cornell, U. P. Hedrick of Geneva Station, and State Entomologist E. P. Felt of Albany, all buckled down to the work. It was a work worth doing, too, for the industry at that time was valued roughly at over $10,000,000 for the bearing vineyards alone, placing the vineyard value conservatively at $250 per acre, and at not less than $4,000,000 more for land not set to grapes which was worth $100 for that purpose, providing the industry was saved from this destructive pest.

Now, while the experts are working on their problem, squirting poison and whale oil soap, charging the soil with carbon bisulphide, and scattering tobacco powder in the vineyards, let us look over the little pest himself and see what sort of an enemy this ten and a half million dollar industry was "up against."

Its Life History.

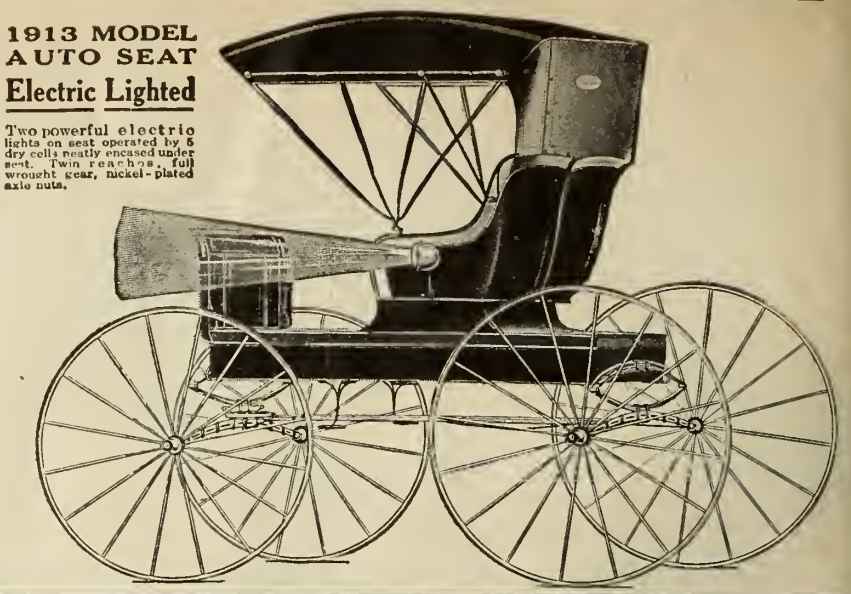
The Fidia viticidia, or grape root worm, viewed now after ten years of study, is a true insect. In its life history it has the typical three stages, the egg hatching into a voracious grub, the grub undergoing a metamorphosis into the pupa stage, then emerging as the adult insect in beetle form, which beetle lays the eggs from which the life cycle again begins.

Then, except for a little study at the Ohio station, even its life history, to say nothing of its habits, were unknown. In the vineyards it was known that the beetles were seen on the leaves of the vines in June and July, then disappeared, and the next year the vines would wither, little growth would come, and many would die, those not dying showing so little vitality that little fruit would set and none would ripen. Digging at the root of the vine would disclose the large roots intact, but the rootlets, the fibres through which the roots absorbed the ground waters laden with the material necessary for growth and fruit-bearing, were entirely eaten off. It was evident that it was the grub in the ground that did the damage.

How to reach the enemy was a problem. Early experiments proved that the beetle, an insect of but about an eighth of an inch in length, was a very small eater and very fastidious. He would not eat on poisoned foliage. The hiding place of the eggs was found under the scraggy bark scales of the main branches and trunk of the vines, and destroying the eggs was tried. Catching the beetles by using immense cloth-covered catchers which were run under the vines and the beetles shaken off, was tried. Poisoning failed, destroying the eggs and catching the beetles proved too expensive, based on actual results. Ohio

1913 MODEL
AUTO SEAT
Electric Lighted

Two powerful electric lights on seat operated by 6 dry cells neatly encased under seat. Twin reaches, full wrought gear, nickel-plated axle nuts.



How to Judge a Buggy

There are some amazing facts about the buggy situation that *you* have *a right to know.* We can *afford* to tell them — and we're going to do it *right now.* During the past few years the market has been flooded with inferior buggies at prices which *seem* low — but which are really *outrageously exorbitant.* You want *quality*—of course. And there *is* a way of getting the absolute *maximum* of quality *and at the lowest price you can afford to pay.*

The Real Truth About the "Cut-Price" Buggy

The manufactnrer of the "cut-price" buggy doesn't worry much about *quality.* Instead he is content to put out a line that will *look* like the well known product of some *high grade* manufncturer. He copies the design and the lines just as closely as he can, relying on the fact that tne average buyer will be deceived by the appearance into thinking that he is getting quality too.

Of course, he knows that he can never sell the same man a second time, *so he deliberately cuts the quality all he can so as to make sure of an enormous profit.*

The "Skimped" Way

A certain cut-price concern is already offering a buggy similar in appearance to the magnificent STAVER model shown above, at an *apparently* low price. We bought one of these buggies and analyzed it;—here are just a *few* of the ways in which it had been *skimped* — there are nearly a hundred more that we haven't room for.

Top

Fabric top — unlined — imitation rubber front and back valance. Roof stitched to quarter without welt, actual saving in factory cost..... $5.79

Seat

Gum-wood panels, kiln dried or green, no inside finish. Six coats of exterior finish, the last being a *glaze* varnish containing 30% rosin. This process gives a deceiving high gloss but has no "give" whatever. The slightest strain to the seat will cause it to check, flake and peel. Actual saving in factory cost..... $3.95

Body

Body of ordinary gum wood with inferior Ash, or in many cases Elm sills and posts.

Painted by the "glaze" system as explained in description of seat. Actual saving in factory cost..... $3.15

Dash

Frame of malleable iron, bolted, not coated with lead and oil or anything else. Covered with a cheap enamel split leather. Frame boot of cheap Gum Wood. Actual saving in factory cost..... $1.25

Gear

Malleable hangers; water-tempered springs; malleable fifth wheels; Elm reaches; maple axle beds; cull "D" grade wheels; malleable stay braces, wheel braces and fifth wheel forks. Actual saving in factory cost..... $9.42

Shaft

Made of Elm, with 20 in. point leathers; malleable reinforcements, no circle cross brace; flat leather cull straps; "glaze" painting. Actual saving in factory cost..... $2.40

The total saving on factory cost on these few items alone is $28.61; *the value of the buggy is lessened fully 75%.*

The STAVER Way

For 33 years we have been building the very highest grade of buggies and carriages made in America. That 33 year old reputation is worth millions of dollars to us. We must maintain it on a quality basis. The man who buys a Staver knows that he is getting a buggy that is *made on honor all the way through.*

Top

Highest grade leather throughout, including front and back valances. Lined above bows with 8 oz. all wool lining. Reinforced curtains. All leather and fabric *cut by hand.*

Seat

The Staver seat is made of air-dried *Yellow Poplar;* 1 piece back and 1 piece side panels. The 6 lugs that hold the top extend down on inside of the seat 6 in. and each is fastened with two 1 in. screws and one 1⅛ in. bolt. 2 coats of pure white-lead and linseed oil are used *on the inside* before the upholstering is put in. The outside receives *fourteen coats* and 3 *hand-rubbings.*

Body

The Staver body is made of *air-dried, Yellow Poplar,* ⅝ in. thick through the center, tapering to ⅜ in. at either edge. Sills and posts are constructed from the best White Ash and painted with 14 coats besides 3 water rubs, giving the finest and most durable finish it is possible to produce.

Dash

Wrought iron frame, coated with a heavy coat of lead and oil before being covered with grain buffed leather. The boot has a wrought iron frame welded out under the hammer and absolutely will not break or get out of shape.

Gear

The Staver gear has hand-forged Bailey Hangers; oil-tempered, graded spring (the easiest riding and most durable in the world); full wrought steel fifth wheel, black Hickory reaches; black Hickory axle beds, bent and turned from 2x2 in. stock; straight grain second growth Hickory wheels, spokes and felloes split before shaping. Wrought iron stay braces, heel plates and fifth wheel forks.

Shaft

Black Hickory, 21 in. bend; 36 in. point leathers; round jockey straps; half beveled steel reinforcements; circle cross bar brace; painted same as body.

STAVER

Write for Free Catalog

This is only the start of the story. We cannot urge you too strongly to get *all* the facts—to post yourself thoroughly on the real truth about buggies before you even think of buying. A postal will bring you the Staver Buggy Book and valuable, detailed information. Write today.

Staver Carriage Co., Dept. 4538, 76th & Wallace Sts., Chicago, Ill.

experimenters had tried injecting that vile-smelling liquid carbon bisulphide into the ground near the roots of the vine. That was tried, but proved to be too expensive, and productive of little results. It was known that the egg must hatch on the trunk of the vine and the grub drop to the ground, and so sprinkling lime freely under the vines and also using tobacco dust in the same way was tried. This proved effective in a measure, but the effectiveness was lost with the first rain storm and destroying a few of the hatched grubs was entirely insufficient to save the vine.

The Leaf Hopper.

The problem was one which proved too large at the outset for the best men sent to the belt. Literally hundreds of acres were ruined the second year of the attack, and the third year there was still little relief in sight. To still further complicate the trouble, the second of the major grape insect pests made its appearance this third year.

This other pest is known as the grape leaf hopper (Typhlocyba comes Say), according to the bug sharps. Its appearance in 1904 was almost unheralded, and caused even more serious apprehension and actual damage in many areas than the grape root worm had done.

The grape leaf hopper is not a true insect, as it does not undergo the larval stage. It does, however, undergo many metamorphoses, and in the adult stage when it lays its egg, it is a little insect encased in hard wing-covers with flying wings underneath, and less than one-sixteenth of an inch in length. It is not an eating insect, but of the family of sucking insects, and its damage is done by sucking the vital juices from the cells of the grape leaves. Literally, millions of these insects were present when the weather and the season were favorable for their development. To use the familiar figure of the horticultural lecturer, each cell of the leaf is the starch factory which manufactures that from which the growth of leaf, stem, bud and fruit is built, and as each leaf hopper will suck dry many cells, the effect of a plague of these hoppers is very evident. The first year this insect attacked the vineyards, hundreds of acres of vineyards never ripened the crop of grapes which were set on the vines, and matured the growing wood so poorly as to fall an easy prey to winter-killings the following cold months.

The ensuing years, 1904-'05-'06 and '07 saw serious times in the grape belt. While the grape leaf hopper seemed to be greatly affected by weather conditions and to vary in the damage done in different years and different sections, no effective method of control was found during all these years, although the efforts of the station and college, even of the federal department of agriculture, were kept intermittently directed toward the growing damage to the vineyards and the annual decrease in the productivity of the vineyards. The grape root worm, which obtained its first foothold in the west end of the belt, spread eastward through the belt, taking a jump of about six miles a year, until, by the last date named above, the entire belt was infected.

And worst of all, an enemy at home had appeared. Every effort at publicity, and at getting together to insist on outside assistance and effective co-operative work to rid the vineyards of the pests was met by the insistent demand of the real estate interests, and of timid vineyardists, that the publicity be stopped as the sale of the vineyards and even of the crop which was harvested, would be ruined. It took all of one year to beat down this opposition and get in shape for the final appeal for help which brought the effective organization into the belt which has now redeemed the industry, discovered the remedy for both pests, and placed the knowledge and power into the hands of every individual grape grower to handle his own vineyard at a profit, increase its productivity and keep it free from both these dreaded insects.

A glimpse at the statistics of the grape crop during the years named will show the situation at a glance.

In 1901 the grape crop amounted to 6,699 carloads; in 1902, 5,062 carloads; in 1903, the year of the root worm trouble, and a very cold wet summer, 2,932 carloads; 1904, 7,000 carloads; 1905, 5,300 cars; 1906, 5,200 cars; 1907, 5,100 cars; 1908, 4,300 cars.

(To be continued.)

How the Marketing Association Helps.

Salesmanship is a highly specialized business in itself. So is fruit growing, and it is rare indeed that one finds a man who is a good grower and a good salesman as well. The fruit dealer has no other interest in the world than that of buying and selling fruit. He is a skillful buyer and a crafty salesman. He knows well the little tricks which will make the producer turn loose his fruit at or below the cost of production, and he knows, too, how to turn that fruit into big money for himself.

One of the solutions of the big problem of selling our fruit comes through the co-operative marketing associations. The business of the association is to sell the produce of its members. Its officials must be salesmen who are acquainted with the multitudinous tricks of selling fruit and with railway shipments. An association which makes a profit for its members must have such men, else it is doomed to failure.

Co-operative marketing associations have in innumerable cases proved themselves to be the most effective means of solving the producers' marketing problems An association can afford to employ the salesmen and special agents who are needed to conduct the arrangements with the railroads, storage houses and dealers, arrangements which require knowledge such as few producers possess. Where produce is shipped to distant markets an association can employ shipping experts who can assure the lowest rates and most efficient service of the transporting company.

The greatest problem which confronts the growers of today, no matter whether they are growing fruit, grain or hay, is the problem of disposing of their produce at a profit to themselves and a lower price to the consumer. Every fruit producing section of the United States needs the service of a well-organized and well-managed marketing association. It will not be the panacea for all of the difficulties in selling the produce, but it will be a long step towards aiding the growers in getting living prices for their produce. If there is not an association in your neighborhood, organize one right now, while the hardships of selling your crop are fresh in your mind. If you don't know how to organize, your state experiment station or agricultural college will help you. If they cannot, write to The Fruit-Grower and Farmer for information about how to proceed.

Remove all weeds from the garden before they are allowed to scatter and ripen their seed. This will reduce the labor of hoeing next season.

APPLE TREES

APPLE SEEDLINGS

STRAIGHT AND BRANCHED

APPLE GRAFTS, whole and piece root, made to order. SHADE AND ORNAMENTAL TREES — Seedlings: Catalpa, Speciosa Osage Orange, Soft Maple, Mulberry, Elm. Write for prices.

YOUNGERS & COMPANY
GENEVA, NEBRASKA.

NEW IDEA
IN TREE SELLING

Exclusive territory; commissions on mail orders from your field. New and original working plans; cash weekly, expenso stock, attractive prices. Your opportunity for permanent and profitable business. Write today for your territory. Outfit free.
MISSOURI NURSERY CO., Louisiana, Mo.
In writing please mention The Fruit-Grower and Farmer.

Fruit, Shade, Ornamental TREES *and* SHRUBS

ONE ACRE PEONIES, GLADIOLUS Bulbs, Hardy Phlox, Roses, Iris, Dahlias and Cannas. All stock has made a fine growth this summer. Send for my FREE catalogue today.
L. F. DINTELMANN
Box 262. Belleville, Ill.

For Sale—Natural peach seed, collected from healthy trees. E. W. Jones Nursery Co., Woodlawn, Va.

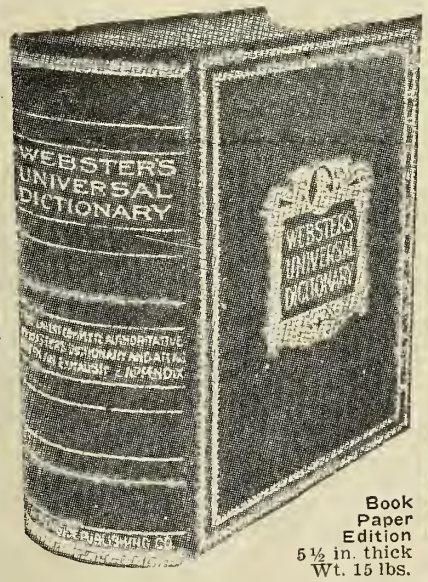
It Cost $500,000.00 to Produce This Dictionary and you can have it in your home if you wish

Webster's Universal Dictionary

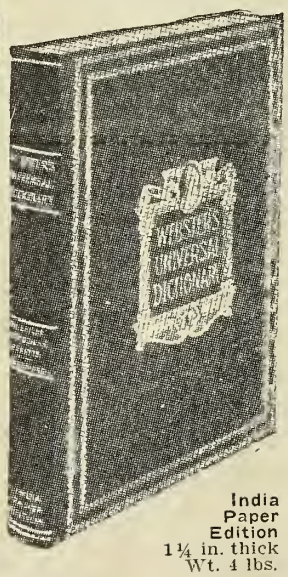
Absolutely New, Complete, Authoritative, Unabridged—Copyrighted 1912
50,000 MORE WORDS THAN PREVIOUS WEBSTERS

TAKES THE PLACE OF ENCYCLOPEDIAS OF MANY TIMES ITS COST

Not only is it a complete Dictionary of the English language, with definitions encyclopedic in character, but it contains a valuable appendix of sixteen other special departments, making it the most useful and complete reference work ever published in a single volume.



Book Paper Edition
5½ in. thick
Wt. 15 lbs.



India Paper Edition
1¼ in. thick
Wt. 4 lbs.

Sixteen Great Reference Works in One

1. Complete Dictionary of English Language.
2. Modern Gazetter of the World
3. Dictionary of Authors with Works.
4. Dictionary of Names in Fiction.
5. Dictionary of Foreign Words and Phrases.
6. Dictionary of Scripture Proper Names.
7. Dictionary of Greek and Latin Names.
8. Dictionary of Abbreviations.
9. Pronouncing Dictionary of Biography.
10. Signs and Symbols Used in Printing.
11. Marks Used in Proofreading.
12. Values of Standard Foreign Coins.
13. List of Amended Spellings.
14. Faulty Diction and How to Correct It.
15. Atlas of the World. 64 Maps.
16. One Thousand Questions Answered.

Indorsed by State School Superintendents and Leading Educators Everywhere

Examined with increasing interest. It surpasses my expectations. C. J. BAXTER,
State Superintendent.
Trenton, N. J.

As convenient and complete as it is possible to make a Dictionary.
M. B. STEPHENS,
State Superintendent.
Annapolis, Md.

This Dictionary is not published by the original publishers of Webster's Dictionary, or by their successors.

IT IS A NEW CREATION

Be up to date in the usage of the language. One can be ignorant on many subjects and the world will never know, but our speech will betray. It will tell whether we are cultured or lacking in culture. The correct usage of language commands the respect of all and means influence and increased earning capacity.

Both editions contain the same number of pages, 2,335—the difference in thickness is made possible by the use of thin India paper. For family, school and library use, we recommend the book paper edition. For individual desk use, the India paper edition is a marvel of convenience. The full leather bindings of both editions beautifully gold stamped, strong and durable; thumb indexed.

Every Good Home Wants This Great Book

As an educational influence in the Home Circle a really great authoritative, Unabridged Dictionary, is beyond price. The thousands of perplexing questions that daily confront us are answered by this great new Dictionary. It is the one most essential book, and should have a place in every intelligent household

FREE FOR EXAMINATION COUPON

UNIVERSAL PUBLISHING CO., Akron, Ohio.

Please send me, charges prepaid, one Webster's Universal Dictionary in style marked X.

...Full Law Sheep Binding, book paper ed.....$13.00
...Full American Russia Binding, book paper ed. 17.00
...Full Morocco, India paper ed..... 21.00

If the book is satisfactory, I will send you $1.00 as first payment and $2.00 per month until the purchase price is paid. If not satisfactory, I will notify you within 5 days and hold book subject to your order.

NAME .....
ADDRESS .....
SIGN AND MAIL TODAY

Protect the Wells

Well water is contaminated either by surface drainage, which runs directly into the well, or by drainage from household slops, cesspools or barnyards. Many country wells are so contaminated. Typhoid is essentially a country disease, and usually it is caused by a poor water supply. All farmers should see that the water supply of the home is protected.

A sandy soil filters out the impurities better than any other kind, and a well is safer in this type of soil than in any other kind. A clayey or limestone soil is rather a dangerous soil in which to have a well, because of cracks that may be present, which allow the impure matter to pass freely. No possible source of pollution should be closer than thirty-five feet from the well.

The casing of the well must be sound and water tight below the line of the surface water, and the top must be tight if the well is to be safe and free from contamination. Bricks make a good casing when they are carefully laid in cement. However, a good casing may be made of rock, if the wall is carefully laid up in cement. This casing should extend at least eighteen inches above the ground, and a shield of concrete placed around the casing above the ground in order to keep out the surface water, which always is impure. In putting in this casing, be sure to make the joint between the shield and the casing water tight. In making the casing, be sure the wall is well constructed so that leaks in which the surface water may get in may not develop later. The top of the well should be dug a little larger than the rest, so clay may be tramped in around the wall as it is built. This clay will help keep out the water. Be sure the wall is water tight, for the health of your family depends upon it.

Cement is the best material to use in building the cover for the well. A good cement platform is absolutely water tight, and it will last forever. And it is safe. The top should be constructed so that it has a slope of about two inches, in order to give the water that falls a chance to run off. But you can make a fairly good platform from tongue and groove flooring. Drive the boards tightly together, and paint the edges carefully with white lead. Then lay a similar floor at right angles to the first floor, and paint it carefully with white lead. If this wooden floor is well built, and slope is given to it, a good, safe platform may be made.

The idea is quite common that some ventilation must be provided for a well. That idea is wrong. Ventilation is absolutely unnecessary for a well, and the water stays in better condition if the well is dark, and the water absolutely protected from the air. And don't use a bucket. The "old oaken bucket" is all right for the poets to sing about, but that is the only use that should be made of it. It is insanitary. Water always should be drawn with a pump. It is very easy for a person to transfer the germs of disease from his hands to the bucket or rope, and then this is lowered into the well, where they are washed into the water. Water often is infected in this manner. Make the joint between the well platform and the pump as tight as you can, and finish it with a flashing of tin to prevent the water from washing down the pump.

Put up a fence to keep farm animals away from the mouth of the well. Wells frequently are contaminated by animals that are allowed to roam around the well. Keep them away.

And this is of supreme importance: Be certain the cesspool is far enough away so there is no danger of contamination from it. Even if the cesspool is quite a distance away, the ground may become so full of impurities that it will no longer act as a filter. After the soil is full of impurities, it refuses to filter them out. That is why there is much more danger around a place where the impurities have had a chance to fill the soil. If you think there is any danger from this source, the cesspool should be made water tight.

Fill Up the Gullies.

Almost every field has a few gullies in it, and it may have many. How bad the ditches are depends on the slope and nature of the soil, and the way the land has been farmed. Before the land was plowed, the gullies were covered with a growth of water-loving plants, and they held the soil without much trouble. When the ground was plowed, this protection was destroyed.

What can one do to protect the soil from washing away? This is an important question, for, on many fields, more fertility washes away than is removed by the crops. The most important thing is to keep plenty of humus in the soil. Humus tends to loosen the land so the water can sink into the subsoil. If the water does that, it will not run off the surface and carry the soil with it, and also, it will be available for the use of crops in time of drought. Humus also will hold the soil grains together. When a field has been farmed so the humus is all but exhausted, the soil becomes hard and lifeless, and the water runs off the surface because it can't get down into the soil readily, and carries the soil along with it.

So keep up the humus supply. You can do this by using a good crop rotation, by plowing under green manure crops and adding barnyard manure. You can take this as an axiom: All rolling fields in the humid section that are low in humus will wash some; how bad depends on the nature of the soil.

After the gullies are formed, it takes some care to get them filled up again, but the way to do is to make the force that washed them out fill them up. If proper obstructions are placed in the ditches, they will fill up all right. Place brush in the gullies with the tops pointing upstream; it will reduce the speed of the water and the coarser material will be deposited. Buck-brush is a good material to use for this purpose.

Where the gullies are very bad, it will take other material to fill them up. In such cases, take woven hog wire, drive two stakes in each bank and stretch the wire loosely between the stakes. Usually, the stakes should be fastened down with wires. Put the brush or old hay above this dam, and it will catch the wash. Other wires may be placed above the bottom strand as they are needed.

To Improve Kansas Rural Schools.

In speaking of the campaign for the improvement of Kansas rural schools, E. T. Fairchild, state superintendent of public instruction, said recently:

"Kansas cannot be very proud of her rural schools. Of course, we have made excellent progress by the introduction of agriculture, domestic science and manual training into these schools, but they still are on a comparatively low plane. Bear this in mind: 300,000 of the 516,000 school children in the state are being taught in rural school buildings. And less than 25 per cent of that number are completing the grades. I think that's appalling. And the fact that the district schools have declined in the face of unprecedented progress in other institutions of learning shows that our real problem is in the country, and that we must direct our attention to these schools with renewed energy.

"What we propose to do is to make the district school more efficient; to make it more interesting and attractive. We have discussed the advisability of a rural school inspector under the direction of the state superintendent, and I think the idea an excellent one. This inspector, like those maintained in the South by the General Education Board, would visit country districts; talk to and interest the country people in bettering their schools. He would act as a missionary of encouragement and help. We have our high school inspectors; why not have rural school inspectors?

"But before we can make much progress with the district schools we must have more centralized organization of them. The old district plan is out of date. There are too many officials giving too little time to the administration of these schools. In Kansas 30,000 officials boss the 13,000 teachers. Fewer officials with more responsibility are needed. Of course, legislation will be necessary to accomplish this change.

For Co-Operation in Selling Apples.

No one can deny that the apple has possibilities for commercial uses more varied than any other fruit. You can eat the apple as it comes from the tree, you can convert it into pies, dumplings, jelly and jam. And it is health-giving in all these forms.

But to make the apple the world's fruit involves the necessity of getting it to the consumer at a price he can reach, at the same time allowing a fair margin of profit to the grower. There you have the crux of the whole situation. All who have studied the problems of the industry agree that some method, organization or plan must be devised to get the apple to the consumer from the producer without the present enormous "spread" in cost. There is no question that our growers can get rich raising apples for which they receive $1 a box; they can make money at 75 cents a box. But when these $1 apples get to Chicago and are sold at $3 a box, the spread is too great, and the price is too high to encourage a large consumption.

The apple industry in the Pacific Northwest is not concerned with the matter of selling a comparatively few boxes of apples at $3 a box. What we are concerned with is the matter of getting tens of thousands of boxes to the people at prices they can afford to pay.

The orange orchards of California faced the same problem ten or twelve years ago, and they solved it. Then you could get good orchard land for $500 to $1,000 an acre. Today it will cost you $1,500 to $3,000 an acre.

Fifty years ago the country of Denmark was at low ebb in a business way. Today that little country leads the world in butter exports. And the thing which did it was co-operation—just what did it in California and what will do it in the apple industry.

William T. Day.

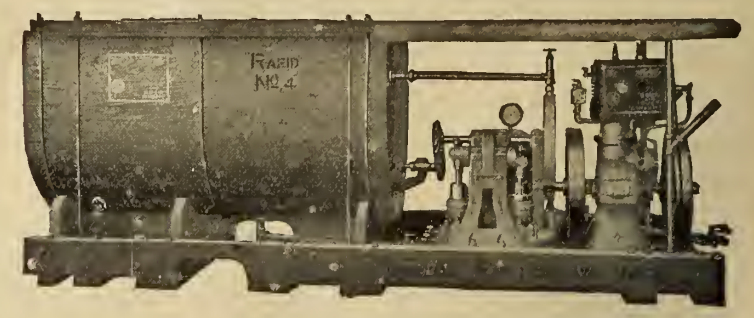
Washington.

Subscription expired? Renew today.

THE "New-Way"

High Pressure Power Sprayers=Built to last

All Sizes With Two or Four Cylinder Pumps



Pump Direct Connected With

THE "New-Way"

Air Cooled Engine by Extra Strong Cut Gears—We build and Guarantee Engine, Pump and Sprayer

Write for Catalog S1

THE "New-Way" MOTOR COMPANY
LANSING, MICHIGAN, U.S.A.
25 ASH STREET

Sulphur, Nitrate of Soda

Blue Vitriol

If you make your own Lime and Sulphur Solution, write us for prices on sulphur. We carry large stock in barrels and sacks. Ours is the best and cheapest brand for making solution. Goes into solution readily and stays in solution. We also carry large stock of best Nitrate of Soda in 200-pound sacks, ready for shipment. You can save money and get prompt service by dealing with us.

Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

Use Pasture For Hogs

In order to make the most profit from hogs, it is essential that pasture be used. Many years ago, when corn and other grains were much cheaper, a profit could be made from hogs even if they were kept on a grain ration, but it only is in very favorable years that a profit can be made without the use of pasture in this age of high priced grains.

Alfalfa and clover are the two best hog pasture crops, where they can be grown. They make the most satisfactory protein feeds, and protein can be obtained cheaper in that way than any other. Tankage and shorts are expensive sources of protein, and it does not pay to use them very much in the summer, when protein may be grown at a small cost. Alfalfa will produce more protein to the acre than clover, where it will grow well, and it should be used wherever it will make a good growth. But there are some conditions, for example, on the heavy clayey soils, where the clover will produce the best crop, and under such conditions clover should be grown.

The annual crops, such as cowpeas, rape, cane and the like are all right to use where annual crops are not available, but alfalfa or clover are to be preferred, and they will produce the most profit in the long run. Annual crops have to be resown every year, and they will not produce much feed in the summer, as the crops that last longer than one year. So grow clover and alfalfa if you can.

What return can be expected from alfalfa when it is used as a pasture for hogs? Here is what the animal husbandry department of the Missouri Experiment Station did: By pasturing alfalfa with young, growing pigs, they produced 596 pounds of pork to the acre, red clover produced 572 pounds, rape 394 pounds and cowpeas 224 pounds. In this experiment, the pigs were placed on the pasture May 1st, when they weighed an average of about sixty pounds. When the hogs were removed September 1st, they weighed from 125 to 150 pounds. They were given about a half ration of corn during the summer.

With pork at six cents a pound, every acre of alfalfa gave a return of more than $35 an acre, at seven cents a pound the return was more than $41, and at eight cents the money return was more than $47 an acre. That is a good profit from an acre of ground. And that is not all. While the land was making this good profit, it also was increasing in fertility all of the time. And these returns are not exceptions. Such results can be obtained where you can grow a good pasture crop for hogs. Of course, if the land is not rich, there will not be so good a growth of forage, and the hogs will not produce so much gain to the acre but it probably will produce a greater profit than you can get in almost any other line.

Don't keep the pigs on pasture all summer without grain, for the legumes do not make a perfectly balanced feed. They do not have enough carbohydrates to make a well balanced ration, and some corn must be fed if the pigs are to make the best growth. Feed about two pounds of grain a day for every 100 pounds of live weight of the animal. In other words, if the animal weighed 100 pounds, you should feed about two pounds of grain every day. You should have the hogs weighing about 150 pounds by September 1st, and if they are in good condition at that time, you will not have any trouble in getting them to weigh at least 250 pounds by November 15th.

Hog pastures should not be pastured too closely, for if you do, pigs will not make the best growth, and the pasture will be killed. You should pasture the crop lightly enough so there will be a growth that can be cut for hay. This legume hay, if it is reasonably good and not too full of weeds, can be used to feed brood sows in the winter, and it will be valuable for them too. Cut the crop as often as it needs it, and a tender growth will start at once that is more valuable than the ordinary woody growth.

If you are to produce pork in the future, you must consider the feed proposition, and the way this feed can be produced the cheapest. You can't make much profit if you depend on the high priced grains and the more expensive concentrated feeds to produce the pork you market.

Celery may be kept pretty well into the winter by digging the plants so as to leave as large a root surface as possible. Remove a few of the scraggly outer leaves and set closely in a cool cellar or in boxes. An ordinary dry goods box from 14 to 18 inches wide and three to four feet long makes a good package for storing celery. Put a little dirt in the bottom of the box, then set the plants in a row close together, just covering the roots with soil. Place another row next to the one first set, as close to this as the soil will permit, in every case setting the plants about the same depth as they grew in the field. Celery stored in this way should not be bleached in the field. If the plants become dry and wilt slightly, they should be watered, care being used not to wet the foliage of the plant any more than is absolutely necessary as this is apt to cause decay. Store the boxes at a temperature as near freezing as is safe, usually about 35 degrees. If stored at a higher temperature, the celery will grow and is apt to decay.

Farmers are paying out millions of dollars each year for fertilizers. Probably the greater part of this money is well spent, but it is possible that it might be better spent, by a more careful selection of the goods used, by adapting the fertilizer to the crop and soil and by buying on the basis of the plant food they contain rather than by seeking goods that sell at a low price.

The Most Exquisite New Ideas in Watch Cases

Take your choice of these superb new style watches sent without a cent down—on approval (Payable at $2.50 a Month)

The Movement—In connection with our sweeping fighting on trust methods we have selected our **finest** highest grade watch for a special offer direct to the people. **Material:** *The best that money can buy.* **Workmen:** *World renowned experts in their line.*

The Jewels: 19 finest grade selected genuine imported rubies and sapphires, absolutely flawless. (It is well understood in the railroad business that 19 jewels is the proper number for maximum efficiency.)

Factory Fitted and factory tested. Fitted right at the factory into the case made for that watch—and *re-timed* after fitting. No looseness or wearing of the parts. No rattle or jar.

Adjustment! *Adjusted to temperature, isochronism and positions.* The most rigid tests.

Since the $1,000 Challenge was made to the giant factories four years ago, why have they not answered? Why have not these factories produced a watch **equal** to the Burlington? And this challenge did not ask our competitors to produce a watch **better** than the Burlington. NO. If they should produce a watch **equal** to the Burlington we should be the losers. Our $1,000 still lies in the bank for competitors to cover.

No Money Down

We ship the watch on approval, prepaid (your choice of ladies' or gentlemen's open face or hunting case). You risk absolutely nothing---you pay nothing---not one cent unless you want the great offer after seeing and thoroughly inspecting the watch.

Burlington Watch Co. 19th St. & Marshall Blvd. Dept. 3668 Chicago

A Bomb! for the Watch Trust

The Burlington Offer—Our startling and smashing direct offer is overwhelming the watch trust. The superb Burlington Special at the anti-trust rock-bottom price—the same price that even the wholesale jeweler must pay—is paralyzing competition. Such a *smashing and overwhelming* offer has never before been heard of in the entire history of the watch industry. Just think of it! You may secure one of these superb time-pieces—a watch of the very latest model, the popular new thin design, adjusted to the second—19 jewels—the most perfect product of the most expert watch manufacturers in the world, at the rock-bottom price, direct from us—the identical price that even the **wholesale** jeweler must pay. And you may pay this rock-bottom price at the rate of $2.50 a month. Yes—only $2.50 a month and all the time you are carrying this most superb time-piece. No wonder competition is paralyzed. No wonder everyone says that this is the greatest watch offer of the age.

The Fight on the Trust Is Explained In This Great Watch Book

Get this wonderful new watch book. It is free and prepaid. No obligations whatever. It will tell you about our gigantic fight against the trust and trust methods. It will tell you of quiet agreements which the giant factories have with dealers which enable them to uphold prices. That is the reason why we say that the great watch factories are a trust. It is because they have contracts and agreements with dealers everywhere which enable them to control trade and to uphold prices. It is not an illegal trust; but its methods are unfair to us—unfair to the public who must pay the price. We want you to get this watch book at once. Find out the inside facts of the watch industry. This book will also tell you about the superb Burlington Special and how it is manufactured for *quality*, not *quantity*. Just put your name and address on the coupon and send it to us today. We will send you the book prepaid—no obligations on you whatever. Do not delay. Better write *now*.

FREE WATCH BOOK COUPON

BURLINGTON WATCH CO.
19th Street and Marshall Blvd.
Dept. 3668 Chicago, Illinois

Please send me absolutely free and prepaid one of your new watch books explaining about your anti-trust fight, and giving the *inside facts* about the watch industry. Also give full particulars of how I may obtain a fully adjusted 19-jewel gold strata genuine Burlington Special, *on approval*, at the rock-bottom price, on terms of $2.50 a month. No obligations on me.

Name.....

Address.....

G2R

Fall Planting of Fruit Trees

Where Success May Be Expected. What to Do When the Trees Are Received and How to Lay Out the Orchard and Plant the Trees.

There are many opinions regarding the comparative values of fall and spring planting of fruit trees. There are many advocates of each practice and each has substantial reasons for his opinion. When all reasons are taken into consideration, it results in the discovery that in sections where the winters are open and mild, fall planting is by far more satisfactory than spring planting. But in localities where the winters are cold and dry, spring is the more satisfactory time for setting out an orchard.

Where fall planting can be safely done, there are a number of reasons why it should be done at that time. In the first place, it gets the work out of the way before the rush of spring comes. It allows the trees to become established during the open weather of fall, and to begin growing by the time planting could be done in the spring. Fall planted trees will make considerable root growth during the warm periods of winter, and have a fair start in becoming established by spring. For this reason fall planted trees stand the dry weather of the following summer better than do those planted in the same orchard in the spring. Fall planting can be done more leisurely than spring planting, as there is seldom the rush to get other big jobs done then as there is in the spring when all crops must be planted.

But one of the big advantages of fall planting is that it enables the planter to get better trees from the nursery. It necessitates placing the order early, when the nurseryman has a full line of stock, and it enables the planter to get a better grade of trees than when the order is held back until late in the spring. Nurserymen like to have early orders, not only for fall delivery, but for spring delivery as well, and experienced planters always bear this in mind when buying trees.

Heeling-in the Trees.

It is not always convenient for the planter to take the little trees as soon as they are received and set them in their permanent place in the orchard. It is not always possible to plant right out of the packing case. Temporary planting, or "heeling-in," must then be done. This consists of loosening the bundles so that the roots may be spread out, and then setting the trees in a shallow trench with the roots packed firmly in moist soil.

The roots of trees must not under any conditions be exposed for more than a few minutes to the open air. The tender bark of the roots dries out far more quickly than many beginners can believe, and it is important that the tender roots be kept continually under a moist cover. In sections along the coast and lake shores, where the air contains a high degree of humidity, the roots will not suffer from exposure to the open air as quickly as they will at inland points, and particularly in the irrigated sections of the western states. Heeling-in, then, serves as a temporary cover for the roots until the trees can be planted, and consists of planting the trees very closely together in a shallow trench.

In doing this the soil must be worked down between the roots and packed as tightly as possible, so as to avoid air holes. It is considered a better practice by many planters to heel-in the trees in a slanting position, and in a row running east and west, letting the tops of the trees point to the south. This is done for the purpose of exposing the least possible surface of the tree to the direct rays of the sun, and thereby avoiding damage from that source in case the trees are to remain heeled-in for some time.

Laying Out the Orchard.

When trees are removed from the heeling-in bed to the field where they are to be permanently planted, the same care needs to be exercised in protecting the roots from drying out as when they were taken out of the packing case. A good practice is to plunge the roots in a barrel of water when hauling them to the field. Another plan is to dip the roots in a bucket of mud, made up to the consistency of thick paint. The mud will coat the roots so that they may be exposed to the air for an hour with no danger whatever, provided they are not exposed to full sunlight and the mud allowed to bake. A good plan is to place a wet burlap sack over the mud covered roots. Covering the roots in this manner is called "puddling," and when so treated the load of trees is not so heavy to haul over the newly plowed land of the orchard.

But getting the trees ready is only part of the work of planting the orchard. The land must be prepared to receive the trees, and the ground marked out. This can be done most quickly by plowing furrows along the line of each row, and setting a tree at the intersections of the furrows. The rows are never straight when this plan is followed, as it is impossible to plow the furrows straight enough. Another plan is to make a chain out of heavy wire, with the links equal in length to the distance between the trees. The position of the rows are to be marked at the boundaries of the field, the wire stretched along each row and a tree planted at the proper joints in the chain. This is an excellent method and the straightness of the rows depends altogether on the care with which the trees are aligned.

The Planting Board.

Straight rows add nothing to the value of the orchard except from the standpoint of improving the appearance. But there is a satisfaction in that. The rows can be made absolutely straight in all directions by first driving a stake where each tree is to be set, and then getting these stakes in perfect alignment. The quickest and most satisfactory way to get the rows absolutely straight is by the use of a surveyor's transit, but where this can not be had, careful use of the wire chain and sighting along the row will answer just as well, but is a little slower.

Where a stake is set at the spot a tree is to occupy, the beginner will be confronted by the problem of how to dig a hole in that spot and then get the tree in just the right place.

To do this, more stakes and a "planting board" are needed. These extra stakes are to be used as guides for the planting board, and one is to be dropped at each of the tree stakes. Laths make the best stakes, because they are uniform in size and shape. The planting board may be a small board of any convenient length. I prefer one about seven-eighths of an inch thick, three inches wide and about five feet long, as this size is easy to handle and not easily broken.

In the center of one side of this board cut a V-shaped notch about an inch deep, and as wide across the face. At three inches from each end of the board cut a notch about half an inch deep and wide enough to admit a lath edgeways. This is used by the planter in setting each tree in the exact spot occupied by the stakes. Place the board on the ground, with the central notch over the edge of a tree stake. If the laths have all been set with the flat side all one way, then keep the planting board on the same side of each stake. This will avoid getting the trees a little to the right or left of the cross rows, as would be the case if the planting board is put on the flat side of one stake and the edge of another.

Stand on the planting board so as

HOW THE PLANTING BOARD IS USED.

1. Trimming the roots of the tree. Planting board in position overthe guide stakes.
2. The tree is put in the central notch of the planting board and a little dirt sifted around the roots and worked in.
3. Tramping the soil firmly is the most important part of the job. Get in the hole with both feet and pack the soil hard.

Deming Sprayed trees are clean. Clean trees pay

The trees that make money for you are those that bear **good** fruit and lots of it. They're **clean** trees. Trees that bear scale, codling moth and other pests **can't** bear good fruit. **All** fancy fruit is **sprayed** fruit.

Use Deming Spray Pumps to keep your trees clean. Don't neglect the **young** orchard, for **little** trees that are sprayed grow faster and bear earlier—get a better start in life—than those neglected. **Bearing** trees, sprayed right, produce more bushels, and every bushel is worth more money.

There is a Deming Sprayer for Every Fruit Grower

We have been making pumps for thirty-two years. We know the requirements of fruit growers. There's no experimenting when you buy a Deming Pump.

Deming Pumps have brass or bronze in the valves and cylinders. They can't corrode or rust out. The action is easy, regular, powerful.

Ask for Our Sprayer Calendar

Our catalogue will help you select the pump you need. It describes and illustrates more than 20 kinds and gives a spraying calendar and recipes worth having. **A Postal will bring it.**

Your dealer can supply Deming Spraying equipment, or we will see that you get it.

The Deming Co.
105 Depot Street
SALEM OHIO
Makers of all kinds of HAND and POWER PUMPS

Leaf Rollers

are spreading rapidly through many sections. This dangerous pest should be exterminated at once. It CAN be quickly and completely controlled by

"SCALECIDE"

the mild, smooth, easily-applied spray that **WILL NOT CLOG OR CORROOE. "SCALECIOE"** does not injure the skin. It keeps trees clean and healthy and effectively keeps down Leaf Rollers, **SAN JOSE SCALE** and other insect and fungous pests, controllable during the dormant season.

CHEMICALLY PERFECT SPRAY

"SCALECIDE" is **NOT** an ordinary Petroleum Emulsion. It is as nearly a **PERFECT SOLUTION** of Petroleum in water as science can make. It is made right—that's why it will **LAST LONGER** and **SPRAY BETTER** than any other solution on the market. Don't experiment with inferior sprays—use **"SCALECIDE."**

Valuable Book on How to Pack Apples

will be sent **FREE** on request. Every fruit grower should have a copy. Write today. Also ask for Booklet E, on "**'SCALECIOE'—the Tree Saver.**"

B. G. PRATT CO., 50 Church St. New York City

H. J. WEBER & SONS NURSERY CO.
Western Distributing Agents
NURSERY, - - - MISSOURI

Bearing Orchard For Sale

in the famous Shenandoah Valley, 200 acres, 35 acres in fruit trees, as follows: 500 11-year-old apple trees, Stayman and York Imperial; 800 3-year-old Ben Davis and Lowry; 500 10-year-old peach trees. One mile from two railroads, also fair house and barn in place. Rates to New York, Philadelphia and Baltimore less than 25 cents per barrel. Owner has too much other business; wish to sell or would consider partner. Where is a No. 1 apple man? Price, $7,500 cash.
LEON MILLER, - - WAYNESBORO, VA.

Trees and Fruit

GENERAL LINE OF FRUIT AND ORNAMENTAL Trees. Tho MARTHA Peach, largest on record, 17½ ounces. About 5,000 bushels Kieffer Pears for sale. Several hundred barrels of apples—Jonathan, M. B. Twig, Smith, Missouri Pippin and Ben Davis.

ARTHUR L. NORTON
Nurseryman and Fruit Grower. CLARKSVILLE, MO.

FERTILE FARMS and Unimproved Lands in Delaware
diversified farming, delicious fruits and ideal homes. For information, address
State Board of Agriculture, Dover, Delaware

to hold it down tight, and put the extra stake in the notch at one end. Pull up the tree stake and put it in the other notch. The planting board can then be removed, as these stakes which were in the end notches servo as guides, so that when the board is returned to them, the central notch is in exactly the same position it was before the tree stake was removed. These guide stakes can be located in this manner over the entire orchard, or as far in advance of the planting as may be necessary, and when they are located, the holes may be dug.

Setting the Trees.

Time may be gained by plowing a furrow between these stakes, but on account of the probability of the stakes being knocked over in so doing, it is better to dig the holes with a spade or shovel. The holes ought to be wide and deep so that the trees can be planted without crowding the roots and so that plenty of loose soil can be carefully worked around them. Throw the soil where it will not interfere with getting the planting board back into its right position over the guide stakes. Several holes can be dug before any trees are set, but not so many that there will be any probability of the soil becoming too dry.

HEELING IN THE TREES.

Make a shallow trench. Loosen the bundles of trees, shake out the roots and plant them in the trench, using just as much care as in planting in the orchard. Incline the trees at an angle with their tips to the south to avoid sunburn. If the trees are to remain heeled in all winter, cover all but the tips of the branches.

Haul the trees to the orchard with their roots in a barrel of water, or with their roots well puddled with mud, and trim the roots before setting any of them. Cut off any which are broken, and shorten those which are very long. This pruning before planting is very important, as it gives the little trees a much better chance to get a start in the orchard. Poor stands are largely due to the failure of the planter to do this pruning when the little trees are planted.

When the pruning is done, put the planting board in position over the guide stakes, and set the little trees in the hole, with its trunk in the central notch of the board. It will then occupy the same position exactly as did the stake originally set. Then fill in a little soil and work it carefully around the roots with the fingers, or jostle the tree up and down, working the soil between the roots in that manner. Have all the space between the roots filled with loose soil. Fill in a little more loose soil if the roots are not all covered, then get in the hole with both feet and pack the earth down firmly. Put in more dirt and tramp down again, then fill the hole and pack down hard. The more firm the soil is packed the better, and when the hole is completely filled, the little tree should be so firmly planted that it will take a vigorous pull to remove it. After this is done, spread a little loose earth over the packed soil and let it remain. This loose layer will serve as a mulch to keep the moisture in the ground and will better enable the little tree to make new roots and become established quickly.

The Essentials for Success.

It is a common practice for many planters to do nothing in the way of pruning as the planting is being done except to prune the roots. The trees can be set more quickly than if time is then taken to prune the tops. This is especially true where two-year-old trees are used, as they are always more or less branched, and it is not the operation of an instant to trim the tops in the proper manner. After the orchard is planted, the tops can be pruned just as well, and in some cases even better, as they can be given a more uniform shape and height by so doing.

Pruning both roots and tops is of great importance in starting a new orchard. There are other essentials for success, such as placing the order for trees early, so that the nurseryman can supply good trees; having the land in readiness; and in setting the trees firmly in the ground so that there will be no air holes around the roots. While these are important facts as relating to the life of the trees, the appearance of the orchard is improved where the rows are made perfectly straight. This can be obtained by exercising a little care in locating each tree either before or as the planting is being done.

The High Cost of Beef.

The cost of beef is high, as the consumers well know. The cost of living has increased, and with it has come a number of queer ideas about how it may be lowered. Many of the proposed schemes are impractical. Take, for example, the scheme to prevent the slaughter of female animals until they had borne at least one calf. That scheme would work a hardship on the beef industry of the country, instead of helping it. It would mean that many poor animals would be kept for breeding purposes which should be sent to the block.

Now, this problem of the increased cost of living will work out along definite economic lines. Beef cattle are high just now, for the reason that there is a shortage in the supply. The cause of this shortage is that much of the land and feed which should be used for beef production is being used for other purposes. Now, it would not have been used for these other purposes if the owners thought there would be more profit in producing beef.

With the high prices that have prevailed during the past few months, it is probable that more farmers will be encouraged to go into beef production, and, in time, perhaps the price may be lowered. But it will never go back to the old levels, where the cost of production and the selling price were often telescoped.

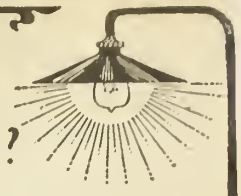
One of the things the people of the cities might as well face now as any time is the fact that the days of cheap food are over, and that the "high cost of living" is not going to be reduced. There is no other "golden west" to be mined out and the food products sold away below the cost of production to help build the great cities. In the future, food will be produced and sold at a good, living profit. Many of the poorly paid laborers of the cities would do well to quit their jobs and get out in the country where they will be near the sources of production.

Good advice about how to lessen the cost of living will amount to nothing, particularly as applied to the production of beef. When the selling price is properly adjusted, the American people will get the beef all right. Beef production is a business, and when the farmers are paid a price that will pay them to produce beef, they will raise it.

With a good sharp hoe or spade remove all grass at least one foot from the trunk of apple, plum or other trees that are apt to be girdled by mice. It is a good plan to protect small trees with wire netting or by throwing a few shovelfuls of clean dirt around the trunk of the tree. Then, after the first snow, trim around the tree so that there will be no place for mice to find a nesting place. Thousands of trees were killed last season by mice girdling them during the winter. In almost every case these trees grew in weeds or grass which gave a ready refuge for mice.

Subscription expired? Renew today.

WHICH
For your farm?



The old, smoky, unsatisfactory lamp, with its danger, its constant need of attention and its feeble light, or the clear white illumination from the dependable and safe Electric Light—which do you want?

Electric Light is placed at your disposal, regardless of your farm's situation, by an Individual Electric Lighting Plant, equipped with the

"Chloride Accumulator"

This is the storage battery which stores up the electricity, ready for use at any time of day or night. We want you to send for our book, "FARM ELECTRIC LIGHTING PLANTS." It tells all about Electric Lighting Plants and shows you how, with the "Chloride Accumulator" you are enabled to run a gas engine for regular farm work during the greater part of the day, and then for a few hours occasionally use it to fill the storage battery, and how you need never run it at night. The "Chloride Accumulator" makes your light dependable, exactly as though it were furnished by a large municipal lighting station. Wonderful, isn't it? and it means the biggest sort of comfort, convenience and safety to you. Write the nearest office to-day for the book—it's free.

THE ELECTRIC STORAGE BATTERY CO.

1888 PHILADELPHIA 1912

New York, Boston, St. Louis, Cleveland, Atlanta, Denver, Detroit, San Francisco, Toronto, Portland, Ore., Seattle, Los Angeles, Chicago.

Cash or Credit

Reduced Prices on Kalamazoos

Freight Prepaid—Free Trial

Get the real facts of the Kalamazoo offer—the $5 to $40 saving—the $100,000 Bank Bond Guarantee—shipment made the day order arrives. Learn about the new glass oven door ranges—and other Kalamazoo improvements though prices are lower than before.

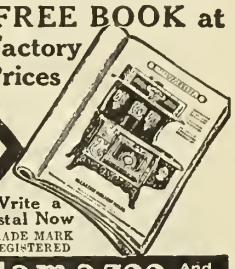
Write for Free Book with stove facts and stove secrets. Ask for Catalog No. 135 Mention this paper.

Kalamazoo Stove Company, Mfrs.

Kalamazoo, Michigan

Furnace or Gas Stove Catalog on request.

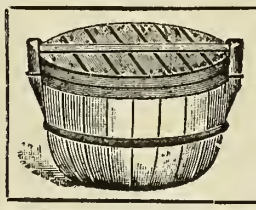
400 STOVES in This FREE BOOK at Factory Prices



Write a Postal Now

TRADE MARK REGISTERED

"A Kalamazoo Direct to You" And Gas Stoves Too



Apple Boxes a Specialty

Fruit Packages, Baskets, Tree Protectors, Etc.

ADDRESS 147 ARSENAL ST.

St. Louis Basket and Box Co., St. Louis, Mo.

How to Tile Drain

By C. A. Umoselle, New Jersey

In the majority of cases it will be best to learn all about tile draining by doing the work yourself, with some extra help, during the wet weather in the fall. You need to know how it should be done, and see that it is done right. Nothing has put tile draining back so much as the poor class of work that has been done by the so-called professional ditchers. I do not mean to say that they are all poor workmen; because I know that they are not, but I know that a good many of them cannot be trusted. We ought to boss our own work particularly such work as tile draining. Of course, we ought not to expect a man who works for a dollar and seventy-five cents a day to be a skilled laborer whose judgment can always be trusted, even if he is honest. If he were skilled, he would not be long going about laying tiles for others at a low wage. I have only known one man whom I could trust to lay tiles for me.

There is a feeling among the farmers that ditching is beneath them. I have seen this. There is a difference between ditching and digging a neat, narrow place for tiles, where skill and thought can save much time and money. A little carelessness in grading, or a poor tile put in, will eventually cause trouble. Do you think ditchers are better than other men that they do not need watching? The best of workmen, most honest and faithful, sometimes "don't think." There should be someone on the farm whose business is to think, not work.

Plowing the Ditch.

I assure you, as much as you may despise ditching as a business, that if you will go at it rightly and put in a single drain properly and watch it draw the water off, you will forget all about your former views. By the time you have been down to the drain two or three times in the rain to see the water come out of your tiles, you will begin to be enthusiastic.

For draining a large field at once, some labor can be saved by plowing in lands, so as to bring the dead furrows where one wants to put the drains. Then one can plow again in the dead furrow and shovel out the loose earth. A horse or team on each side of the ditch, with a long evener and a chain attached to the plow, and a light plow, will readily loosen up the earth to a depth of sixteen inches or so. A part of the filling can also be done with a plow. But, of course, in this way one must cut a wider ditch than when doing all the work with the spade.

The following is the way our work has all been done on our farm: Beginning at the outlet, a line was stretched where drain was wanted. Then, with an axe, we cut the sod along side of the line, moving the line over and cutting the other side. For my own digging I would not, for a ditch thirty-five inches deep, cut more than twelve inches wide.

For digging we use a spade fifteen inches long. Well handled, this will take out about twelve inches a cut, and it is about six inches wide. When placing the spade down I never put the blade square across the drain, but always diagonally, first one way and then the other, with one edge out, or nearly so. This way it leaves only the outside side of the spadeful to break off. After forcing the spade down by your weight, push it slightly forward to loosen the earth, and then pull back and take it out and land the whole spadeful on the bank.

A new hand at it will often leave half of it, let it crumble off the end of the spade and fall back, and then it must be shoveled out. I always put the first cut or sod on the right side and pile it in a narrow, high heap about eighteen inches back from the edge of ditch. Then I walk on this little path to do the scooping for laying tiles, and also lay the tiles from the same place. Then the next two cuts in regular draining, three cuts deep (near three feet) are thrown on the left side close to bank and high up rather than far back, so it will go back in easier. In this way you can put the subsoil back in the bottom and the soil on top when filling. Of course, when you come to where you want a side drain you must dig out a way as you pass.

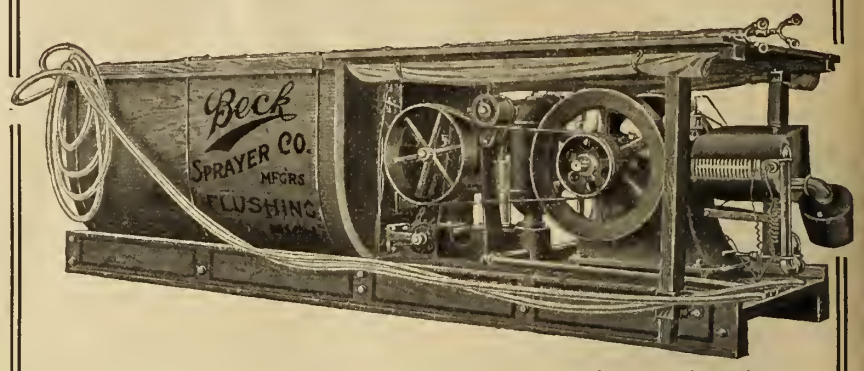
The Side Drain.

The bottom of side drains, for four-inch mains, I leave about two inches higher than the bottom of main. The water should flow down into the main, not go in on a level. After digging the first cut, I take a shovel and clean loose earth out of bottom and throw it on top of sod piled outside. Almost invariably when I do draining there is water in the soil. After getting out this first cut all clean, I grade the bottom with spade or shovel, so water runs with an even fall, what I think I can allow. Then I dig the next cut with same spade, taking care to hold it just the same way, and force it just the same depth all the time. This keeps an even grade.

Anyone not used to doing this kind of work will vary his digging considerably and this will make trouble afterwards. The second cut naturally should be narrower than the top, say eight inches wide. To clean this and the bottom cut out I use a narrow shovel scant six inches wide; then I put in a long, crooked handle, such as is found in the four-tined manure forks we use, but the crook turns the other way, so when standing up straight, nearly, I can push the shovel along ahead and clean bottom of ditch. I stand in the bottom to do this. The third cut is dug no wider at the bottom than six inches, for tiles three to four inches in diameter. It is cleaned out in the same way as second and earth thrown on subsoil pile outside. Next I take a scoop and, beginning at lower end and walking along next to the sod, cut out the little groove that the tiles are to be laid in. After cutting through, I notice particularly the

The Beck Sprayers

LEADS ALL COMPETITORS IN HIGH PRESSURE AND EFFICIENCY



THE Beck Sprayers are found in the best orchards of this country and are built of best material by skilled mechanics. In design, construction and economy of operation The Beck Spraying Outfit is without a peer among Power Sprayers and is backed up by our guarantee of quality and workmanship.

Buy a BECK and Get RESULTS

Send us your name and address and we will send you our illustrated catalogue. Dealers write us for discount. We want live representatives everywhere.

Address all inquiries to Dept. B.

Beck Sprayer Company, Flushing, Michigan

Gooseberries

We grow the Oregon Champion, which has proven the most profitable variety wherever tried, in large quantities for the trade; and have a considerable surplus of **Currants** and **Apple.** Also a general line of Nursery Stock and Nursery Supplies.

PORTLAND WHOLESALE NURSERY CO.
122½ Grand Avenue. Portland, Oregon

TOO LATE FOR CLASSIFICATION

Sell your property quickly for cash, no matter where located; particulars free. Real Estate Salesman Co., Dept. 28, Lincoln, Neb.

White Rocks, Fishel strain; fine layers; choice cockerels, $2 to $3. Pullets, $1.25. Satisfaction guaranteed. W. H. Dougherty, Sellersburg, Indiana.

SPORTING AND TRAPPING MAGAZINE

Fox and Hound and Trapper's World—Monthly magazine about hunting, trapping, outdoor life and dogs; has good Beagle and Pit Bull departments; sample free; $1.00 per year. Address Fox and Hound, Desk F.-G., Decatur, Illinois.

Arkansas Land, $10; better, $16; extra choice, $20—$2 per acre down. 6 per cent on balance. State map and booklet describing lands, free. George R. Lochrie, Gifford, Ark.

Compressed Air SPRAYERS

Require but **one engine** and **one compresser** to operate any number of tank outfits. Nothing to get out of order in the orchard. Any one can spray who can handle a nozzle.

W. H. OWEN SPRAYER CO., SANDUSKY, O.

Plant Oregon Grown Trees

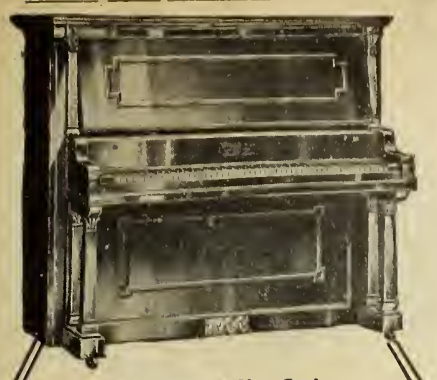
Produced by One of the Oldest, Largest and Best Equipped Nurseries in the Northwest

SEND YOUR NAME for "*Miller's Guide*" and Full Particulars for Cash Discount and Prepaid Freight Offer.

TRUE TO NAME—Healthy, Well Rooted, BEAR YOUNG—Leading Varieties in APPLE, PEAR, PEACH, PLUM, PRUNE, CHERRY—Full Line of SHADE and ORNAMENTAL TREES, VINES and SHRUBS

A. MILLER & SONS
Incorporated Founded 1878

MILTON NURSERY CO., Milton, Ore.



One of Our 38 New Styles

Rock-Bottom

Yes, Rock-Bottom Prices,

And on a piano of the highest quality.

The only high quality piano sold direct at the wholesale price. Your choice of 38 new styles of the **Superb Wing**—at rock-bottom prices—no money down—easy payments if you prefer not to pay cash—absolutely free trial—a four weeks' free trial in your own home.

$150 to $250 Saved to You Let us quote you the most astounding prices ever offered on pianos of unexcelled quality. The very **Rock-Bottom** prices—prices that would mean ruin to local dealers. You will be amazed at the direct-from-the-factory prices on the famous Wing Piano. We positively save you from $150 to $250 on the purchase of this magnificent instrument.

Greatest Piano Offer!

This is positively the greatest piano offer ever made — an offer never before equaled—an offer direct from one of the largest piano manufacturers in the world and backed by our forty year guarantee direct from the manufacturers themselves. This great offer places you in the same position as if you were a dealer. You buy at exactly the same price the dealer pays—the very rock-bottom prices. You do business direct with a factory which has sent out over 45,000 pianos. Don't fail to investigate our rock-bottom prices. Even at these rock-bottom prices the Wing is sold on easy payments to those who prefer not to pay cash. Remember, we pay all freight in advance. No interest charged. These prices include everything. No payment down. No deposit. Not a cent till the end of the four weeks free trial and then nothing unless you are absolutely satisfied—and you are the judge.

Shipped to You Absolutely FREE

Think of it—absolutely free! We will convince the purchaser by shipping your choice of 38 magnificent styles uprights, grands or player pianos on approval — all freight prepaid — no money down—an absolutely free trial for four full weeks in your home. If you write at once you may have the Wing equipped with our wonderful Instrumental accompaniment without extra charge, giving the effects of the guitar, harp, zither, banjo and mandolin.

Wing Small Grand

Send Coupon (—or—Postal) Now

for "The Book of Complete Information About Pianos"

The New York World says: "This is a book of educational interest everybody should own.' A magnificent 156 page book—a complete encyclopedia of the piano. Tells you all about the production of fine high grade pianos and how to judge the fine points of a piano. You will be astonished at the amount of information about piano quality and piano prices and how to avoid the deceptions of piano salesmen. To those who write at once we will also send our beautiful catalog showing the latest art styles of Wing Pianos. Also full particulars of our Rock-Bottom offer on the superb Wing. Don't fail to fill out and mail this coupon now.

WING & SON (Established 1868)

Wing Bldg., 9th Ave. & 13th St., Dept 3668, New York, N. Y.

FREE COUPON

Wing & Son (Established 1868)

9th Ave. and 13th St., Wing Bldg., Dept. 3668

NEW YORK, N. Y.

Without any obligations to purchase or pay for anything, please send me, free and prepaid, "The Book of Complete Information About Pianos;" also your catalogue of Art Styles and full particulars of your great offer.

My name is.....

.....

My address is.....

.....

No letter necessary—this coupon will do

flow of water in the groove. If there are any "rapids" I do some more scooping, until there is an even, uniform flow or current from end to end, where this is practicable. Of course, you may run along some distance on quite level land and then come to a side hill with much more of a fall. You could not here make the fall all uniform from end to end. Scoops are mostly used standing in bottom of ditch, and are so made.

Laying the Tiles.

Now you are ready to lay the tiles. Always begin at the upper end; there is less danger of getting anything into the tiles. Lay the tiles on top of the pile of subsoil, looking at and through each one as you lay them down. If a tile is not sound and hard enough, throw it away. To lay, I use a pole, say eight feet long and about one and one-half inches in diameter. One inch from the bottom end I bore a five-eighths of an inch hole, and drive in a pin, about one foot long, at right angles to pole. The tiles are picked up, one at a time, from the bank on this pin, and placed in position in the groove. After a little practice, one can handle them nicely and rapidly in this way, standing on the bank. They can be tamped down with the end of pole. They can be laid, in ordinary draining, by hand, while walking on the tile, on a hard foundation, but it is much easier and pleasanter to stand up and do it.

It may bother you a little at first, but you can do everything needed with your pole. If you cannot fit one tile, take it out and try another. They should fit closely, at the top, anyway. You can almost always turn them until they do fit. In burning they are often drawn a very little out of shape. They lie best and joints fit best, generally, with the hollow side down. I always use round tiles. When you come to a side drain, use a tile in the main with a hole in it to let in the water from the lateral. Such are made and can be bought when you buy the others. After fitting the lateral properly, so that the water will run down into main, cover the joint entirely and carefully with pieces of broken tiles or flat stones. There are enough poor and cracked tiles or those that get broken, to use for this purpose. If you make a poor joint, open quite a little on top and put a piece of broken tile over it. In going through a sandy place, if you fear it will sift into joints, put a piece of paper over it.

Filling the Ditch.

The subsoil is the proper covering for tiles. You do not want straw or surface soil to let the water in. You want to keep it out all you can right on top. Let it work in gradually through the soil, and from the under side. It will not carry sediment then. The tiles are solidly placed in a groove, so walking on them, with a little subsoil on them first, will not displace them, or should not; but be careful.

This is my way of draining. Experts, or those draining on a large scale, may do better. Most professionals dig the last cut with a long spade, just wide enough at the bottom to fit the tiles, and then clean out as they go with a scoop that pulls towards one. They dig a few feet and then take scoop and clean it, and so on. One can not, particularly a new hand at it, grade as perfectly as by doing my way and digging the last cut about six inches wide. Do not put in a tile until you know there isn't a place too low and that the flow is quite uniform. Make skill take the place of strength, and cut the ditch narrow to save labor.

City Population Increasing Rapidly.

The last census shows some of the things that are causing the high living cost today. One of the reasons is the rather remarkable increase in the city population when compared with the rural population. The last census showed that 91,972,266 persons lived in the United States, which is an increase of twenty-one per cent in the last ten years. Of these, 42,623,383 persons living in cities, which is an increase of 34.8 per cent. The rural population consisted of 49,348,883 persons, which was an increase of 11.2 per cent.

Do you see the "spread" in the increase of the rural and the city population?

A total of 878,798,325 acres is represented in farms, against 838,591,774 acres ten years previous, while the number of farms has increased 624,130, or 10.9 per cent. Thus there is an increase of 4.8 acres in farms, against an increase of 10.9 in the number of farms.

The average acreage of farms has naturally decreased, and is 138.1, against 146.2 ten years ago, or 5.5 per cent.

The average size of improved farms is 75.2 acres, against 72.2 acres ten years ago, while the percentage of total land area improved is 25.1, against 21.8 ten years ago.

Farm land has increased in value to $40,991,449,090, against $20,439,901,164 in 1900, a gain of $20,551,547,926, or 100.5 per cent, while the valuation is divided as follows: Land, $28,475,674,169, against $13,058,007,995, an increase of 118.1 per cent; buildings, $6,325,451,528, against $3,556,639,496, an increase of 77.8 per cent; implements and machinery, $1,265,149,783, against $749,775,970, an increase of 68.7 per cent, while domestic animals, poultry and bees are valued at $4,925,173,610, an increase of 60.1 per cent.

The average value of all property to the farm is $6,444, against $3,563, an increase of 80.9 per cent, and the average value of all property, by the acre of land in farms, is $46.64, an increase of 91.4 per cent, while the average value of land is $32.40 an acre against $15.57 in 1900, or an increase of $108.1 per cent.

Now there is some good food for thought in these figures. The most important fact is the city population is increasing more than three times as fast as the rural population. Which, by the way, indicates the general trend of the living cost.

Orchard heaters represent the insurance policy against losses by frost next spring. Don't overlook their importance. Even though the orchard may be provided with this means of fighting frost, and yet not found necessary for several years, when they are needed they are needed badly. To neglect providing the orchard with fire pots is as careless as waiting until the horse has been stolen before locking the barn.

Factory Prices for the Asking—on Genuine Witte Engines

FREE Engine Book

THE genuine Witte—conceded the best farm engine in America—now offered at actual wholesale prices. Yes, this is the engine that has lead the gasoline engine field for 25 years. Dealers have been getting the highest prices for the Witte. *Now* you can get one at actual factory price—what the dealer paid—and have the finest engine in your county.

Our Gas Well Saves You Many Dollars More

We do more than give you ordinary factory prices. We are the *only* manufacturers who have our own gas well. Power, testing, forge, foundry and heating fuels cost us nothing. *You* get the benefits. But you couldn't afford to own any other engine even if the Witte cost twice as much—because an average of 1 cent for every horse-power per hour *cuts gasoline bills in half*—pays for your engine in no time.

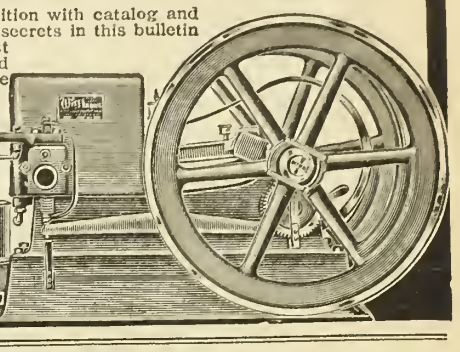
Every part *guaranteed* 5 years—*full rated horse power on minimum gasoline* guaranteed too. Built in all sizes from 1½ to 40 h. p., every one *tested to 10% overload.*

WRITE FOR 60 DAYS FREE TRIAL OFFER

and complete, direct, factory price proposition with catalog and special offer bulletin. We expose engine secrets in this bulletin that will startle you. Remember, it's your first chance at an engine of quality, standing and reputation at a small price. Mention size needed or work to be done. Write at once.

WITTE IRON WORKS CO.
2142 Oakland Ave, Kansas City, Mo.

Every Part Guaranteed 5 Years

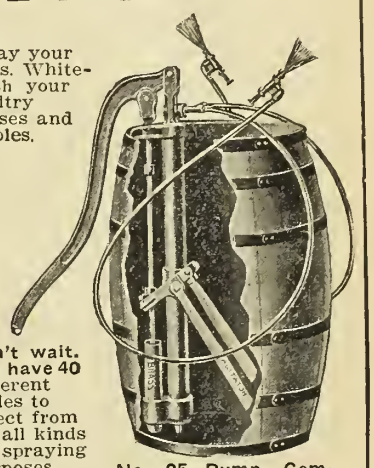


SMITH'S

Barrel, Bucket, Whitewash, Compressed Air

SPRAYER

Spray your trees. Whitewash your poultry houses and stables.



Don't wait. We have 40 different styles to select from for all kinds of spraying purposes. Write for free catalog.

No. 25 Pump, Complete with Agitator and 2 Leads of Hose

D. B. SMITH & CO.,
100 Genesee St. Utica, N. Y.

Our No. 190 Horizontal Barrel Sprayer, solidly built on skids, is shipped ready for work in orchard, garden or field, in any wagon, cart, etc.

Pump outside—all parts easy to get at. No waste of time; no unpleasant work with the hands in the solution, trying to fix valves or packing. No corrosion. Heavy pressure. Four row and orchard attachments.

IRON AGE SPRAYERS

include. Horizontal and. Vertical. Barrel Sprayers, Bucket Pumps, 50, 100, 150 and 250-gallon Power Sprayers, Traction Sprayers. Ask your dealer about them. Write for our new Sprayer booklet and another valuable book on spraying. Full line of farm, garden and orchard tools.

Bateman Mfg. Co., Box 506-S, Grenloch, N.J.

In writing please mention The Fruit-Grower and Farmer.

It is not uncommon for strawberry and potato growers to apply from $20 to $25 worth of commercial fertilizers to the crops grown on lands that has already been made fertile by previous treatment with stable manure, or leguminous crops, or commercial fertilizers. Men who use these quantities of fertilizers are usually good and prosperous farmers, and it is evident they find this practice profitable.

Clover, and How to Grow It

Clover is especially well adapted to heavy, clayey soils, and it is the legume to grow on these types. While it is true that alfalfa will produce more feed of a better quality on fields adapted to its growth, it also is true that on many farms of the Middle West, clover is the crop to grow, because alfalfa will not make a good growth.

Clover fits into a short rotation in good shape. It does not take long to get the crop started; usually it may be seeded with wheat as a nurse crop so no time need be lost. It will do the land much good by the addition of nitrogen, and the improvement of the physical condition of the soil.

More attention has been paid recently to growing clover in the West than ever before. There has been a considerable revival of interest in crop rotation in the last few years, and with this has come an appreciation of the value of clover for increasing soil fertility. There has been a wonderful increase in the proved clover territory. All through eastern Kansas and western Missouri, there are communities where it was alleged several years ago that clover could not be grown. All of that has passed now, as it has been demonstrated that cloved can be grown, and at a good profit, too, all through that section. There are few places in the humid parts of the West where clover can not be profitably grown.

On most soils, where the percentage of failure is not too high, it will pay to sow clover with wheat as a nurse crop. While it is true you may not be so certain of getting a stand of clover if you use a nurse crop, you will not lose the rent on the land for a year. Farming should be run on the law of the average, and considered from this standpoint, it will pay, on most Western farms, to sow clover in wheat.

Clover may be sown on the wheat either in the winter, on the last snow, or it may be sown about April 1 and harrowed in. One can be more certain of getting a stand if he waits until April. The reason is this: If the seed is sown in the winter, there always is a tendency for it to sprout and start to grow too early in the spring, and then for the plants to be killed by late cold weather. Many a fine stand of clover has been killed in that way. Therefore, the safest plan is to not sow the seed until April.

Plow in the Fall.

If clover is sown without a nurse crop, the land ought to be plowed in the fall. Fall plowing will tend to make the plant food in the soil more available for the growth of the crop the next spring, conserve the winter's supply of moisture, and put the soil in good physical condition. When clover is sown without a nurse crop, it should be drilled, as you can put the seed in the soil more evenly with a drill than you can when you sow it by hand. Don't drill the seed too deep, for if you do, it probably never will come up. One inch is deep enough. The amount of plant food stored in a clover seed is small.

When clover is sown for hay, it usually will pay to sow timothy with it. Timothy will increase the amount of hay you will get from the field, for it grows with clover in fine shape, and you always can produce greater yields when this crop is grown with clover. Then, timothy will tend to hold up the clover on the richer ground where it might fall down. This is important, for after clover has fallen down and a second growth has started, it will not make hay of high quality.

There is quite a lot of poor clover seed on the market this winter which, indeed, is quite the usual thing. Much of it will not germinate, and a great deal of it has quite a mixture of weed seeds. There has been a great deal of damage done in the past by the use of clover seed containing weed seed. Take, for example, some of the more common clover weeds, as dock, plantain and the like; these weeds have become so common that many farmers seem to consider they are pests that go with clover and that there is no way to get away from them. That is a mistake. You don't need to be bothered with plantain, dock and related weeds.

Have the Seed Tested.

Always buy clover seed on sample. That is the only way to be certain of what you are getting. Send this sample to the botanical department of your state agricultural college, and have them test it. They will tell you the percentage of weed seeds, and the per cent of clover seeds present that will grow. They will also tell you the kinds of weed seeds, and whether they are injurious. Some weeds are not bad in clover, and about the only effect of their presence in the seed is to reduce the amount of clover seed. Have this test made. It will not cost you anything, and it may save you quite a bit of money. There is no excuse for buying weed seeds with clover, for you can know what the material contains.

Of course, you will have to pay a good price for seed. The better grades of legume seed always are the cheapest. That is a fact that seems to not be well understood, but if the weed seeds and the clover seeds that won't grow are deducted from two samples of seed, one of a good grade and another of a cheaper grade, it will be found the seed in the more expensive sample is much the cheaper, as a rule.

Most of the clover seed usually will germinate promptly, if the heat and moisture conditions are favorable. However, there always are some clover seeds that have a very hard seed coat, and it takes some time for the moisture to soften this coat so the seed may start. So you always may believe the original stand of clover—and this is true of all clovers and of alfalfa—will be thickened somewhat later in the season. This hard seed coat is very evident in some samples of alfalfa. The members of the botanical department of the Kansas State Agricultural College this spring found that some of the lots of old samples of alfalfa seed germinated higher than they did several years ago, and they believed this was because of the gradual softening of the seed coat.

If the ground is in a fairly good condition to grow the crop, you don't have to sow a great amount of seed to get a stand—and if the ground is in poor condition, you probably will not get a stand anyway. When sown alone, ten pounds of good, clean seed should produce a stand. If you sow timothy with clover, reduce the amount of clover seed to eight pounds an acre, and sow ten pounds of timothy seed with it. Many farmers use larger amounts, but it usually is not necessary if strong seed is sown on a well prepared seedbed.

Mow the Weeds.

Keep the weeds mowed off the land if the clover is sown without a nurse crop, and if it is sown with a nurse crop, keep down the weeds after this crop is removed. If you don't do this, the clover will be stunted by the weeds, and it probably will be injured by the hot sun when the weeds are cut. It is not best to cut the plants too close. Run the cutter bar of the mowing machine high, and mow the weeds often.

Wheat is a good nurse crop for clover, because it gradually lets sunlight in on the ground as it ripens, and the clover crop is not so likely to be injured by the heat of the sun when the wheat is cut. A crop like oats does not do this to so great an extent. If the ground is very rich, and there is a tendency for the wheat to fall down, it probably will not pay for you to use a nurse crop, for clover will then be smothered.

The two most important uses of legume crops is to add nitrogen to the soil, and to supply protein for the growth and maintenance of animals. Both processes are essential in profitable farming, and they will require even more attention in the future in order to get good returns from the farms. There will be an extension of the growth of the legumes in the future in the Middle West, and under the conditions on many of the farms, that means an increase in the acreage of clover.

Concerning Registered Stock.

Only 1.05 per cent of the beef animals of the United States are registered. The proportions among the other farm animals are: Horses, 1.02; dairy cattle, 1.07; sheep, .46, and hogs, .45.

Something is wrong with the farm animals of the country when so small a proportion of them are registered. Of course, there are a few pure-bred animals that are not registered, especially among some breeds of swine, but the numbers are not large. It is evident that even yet the stockmen of the country do not, as a class, appreciate the importance of well-bred animals. And it is becoming increasingly important that well-bred animals be kept, for land is more expensive than it used to be, and it is essential that farm animals shall be more efficient. You can't keep scrub animals and make a profit on them with land as expensive as is found on the average fruit farm. If you are to make a profit on stock, they must be high class.

But the day of the well-bred animals on all of the farms is coming. The same process is going on in the West today that took place in 1760 in England. Up to about that time land had been cheap in that country, and a profit could be made from the meat animals, even if they were scrubs. Then land began to increase in price rapidly, and the stockmen found tney could not make a profit with the inefficient meat producers. So a number of the leading farmers of the country took up the improvement of beef cattle, and as a result, we have the splendid breeds of beef cattle today. As the price of farm lands get higher, all farmers must use the best animals they can get, if they are to make a profit on them.

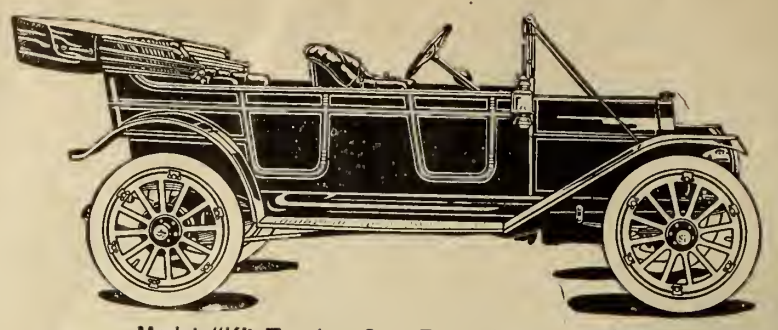
The main thing that is needed is for the farmers who do not now have good animals to realize that the keeping of good, well-bred animals is not a fad, and that there is more money in keeping animals of this kind than there is in keeping the scrubs. If the value of well-bred sires in the beef herd was fully understood, there would be a sudden great increase in the supply of bologna bulls on the markets.

Don't Feed Moldy Corn.

Moldy corn will produce blind staggers in horses, and it never should be fed to them. Every year there is considerable trouble with this disease in the West, and in almost every case the cause is moldy corn. If this corn does not produce blind staggers, it will tend to injure the physical condition of the animal. So don't feed it, and be careful about pasturing the horses in stalk fields where there is moldy corn.

A subscription to the Fruit-Grower and Farmer means a dollar well spent.

K-R-I-T



Model "K" Touring Car, Fully Equipped—$900

Equipment includes three oil lamps, two gas lamps, generator, top with side curtains and top cover, windshield, horn, demountable rims with spare rim, tool kit with jack, and tire repair outfit with pump.

Prove on your own roads what we say of the Krit

Telephone or call on the nearest Krit dealer and arrange to have him bring a Krit to your farm.

Have him drive you over your own country roads, up the steepest hills—anywhere—so you can see how the Krit behaves and rides.

He will gladly do this, if you will only give him the opportunity.

We want you to judge the Krit on what you see and how it acts and behaves on the roads and hills you travel daily.

We know that you will be delighted with the outward appearance of the Krit.

But that alone does not sell Krit cars.

It's the remarkably reliable, efficient and economical service the Krit gives its owners that sells the Krit.

For $900 the Krit offers you more actual value, we believe, than any other car at its price and in many cases equals cars costing $1,500 or more.

The car carries five people in comfort, is easy riding, powerful, durable and comes to you with a complete equipment.

Write for catalog and name of nearest Krit dealer.

Other Models

Model "KR" Roadster - $900
Model "KD" Covered Delivery 900

KRIT MOTOR CAR COMPANY, 1009 E. Grand Boulevard, Detroit, Mich.

An Exceptional Opportunity to Secure Your Magazines at Reduced Prices

Subscribe For All Your Publications Through These Clubs and Save One-Half Their Cost

By special arrangement with publishers in all parts of the country, we are able to supply The Fruit-Grower and Farmer readers with all their magazines at half the regular subscription price—therefore don't subscribe or renew your subscription to any publication until you consult with us—Should you wish for clubs or other publications than these we have here arranged—select those you want—club them together—cut their regular price in half and send them to us—If you are not sure of their correct price, ask us—or if you want magazines sent to other addresses than your own, write them on separate piece of paper, pin to your own order and send them to us—Renewals count the same as new orders.

OFFER NO. 1

Fruit-Grower and Farmer....$1
Kimball's Dairy Farmer.....50c
McCall's Magazine.....50c
(With Free Dress Patterns)
OUR SPECIAL PRICE **$1.00**

OFFER NO. 2

Fruit-Grower and Farmer....$1
Farm and Home.....50c
With 226-Piece Xmas Package)
Woman's World 35c
(With Free Music Book)
OUR SPECIAL PRICE **$1.00**

OFFER NO. 3

Fruit-Grower and Farmer....$1
(With Fruit-Growers Guide-Book)
Farm Journal, 5 years.....$1
People's Home Journal.....50c
OUR SPECIAL PRICE **$1.25**

OFFER NO. 4

Fruit-Grower and Farmer....$1
Garden Magazine $1.50
Ladies' World $1.00
OUR SPECIAL PRICE **$1.95**

OFFER NO. 5

Fruit-Grower and Farmer....$1
(With Fruit-Growers Guide-Book)
Farmers' Review (weekly) $1
Needlecraft Magazine 25c
OUR SPECIAL PRICE **$1.15**

OFFER NO. 6

Fruit-Grower and Farmer....$1
Standard & Poultry World 50c
Farm Life 25c
Woman's World 35c
(With Free Music Book)
OUR SPECIAL PRICE **$1.05**

OFFER NO. 7

Fruit-Grower and Farmer....$1
Successful Farming 25c
Agricultural Epitomist 25c
People's Popular Monthly 25c
Needlecraft 25c
OUR SPECIAL PRICE **$1.00**

OFFER NO. 8

Fruit-Grower and Farmer....$1
(With Fruit-Growers Guide-Book)
Kimball's Dairy Farmer.... 50c
Successful Poultry Journal 50c
OUR SPECIAL PRICE **$1.00**

OFFER NO. 9

Fruit-Grower and Farmer....$1
Farm and Fireside.....50c
McCall's Magazine 50c
(With Free Dress Patterns)
OUR SPECIAL PRICE **$1.00**

OFFER NO. 10

Fruit-Grower and Farmer....$1
Poultry Success 50c
People's Home Journal.....50c
OUR SPECIAL PRICE **$1.00**

OFFER NO. 11

Fruit-Grower and Farmer....$1
American Poultry Journal....$1
Farm, Stock and Home.....50c
Woman's World 35c
(With Free Book of Music)
OUR SPECIAL PRICE **$1.45**

OFFER NO. 12

Fruit-Grower and Farmer....$1
(With Fruit-Growers Guide-Book)
Opportunity $1.50
McCall's Magazine 50c
(With Free Dress Pattern)
OUR SPECIAL PRICE **$1.50**

OFFER NO. 13

Fruit-Grower and Farmer....$1
(With Fruit-Growers Guide-Book)
Garden Magazine $1.50
(With Book "Garden Profits")
Better Fruit $1.00
People's Home Journal.....50c
OUR SPECIAL PRICE **$2.50**

OFFER NO. 14

Fruit-Grower and Farmer....$1
Farm and Home.....50c
(With 229-Piece Xmas Package)
W'kly Chicago Inter-Ocean $1
OUR SPECIAL PRICE **$1.25**

OFFER NO. 15

Fruit-Grower and Farmer....$1
Home Life 50c
Weekly Kansas City Star....25c
Woman's World 35c
(With Book of Music)
OUR SPECIAL PRICE **$1.05**

OFFER NO. 16

Fruit-Grower and Farmer....$1
(With Fruit-Growers Guide-Book)
20th Century Farmer (wk.) $1
Pacific Northwest 50c
OUR SPECIAL PRICE **$1.25**

THE FRUIT-GROWER AND FARMER, St. Joseph. Mo.

HERE ARE SOME SPECIALS WORTH WHILE TAKING ADVANTAGE OF—

Fruit-Grower and Farmer....$1
Kimball's Dairy Farmer.....50c
Farm and Home.....50c
(With 226-Piece Xmas Package)
$2.00
OUR SPECIAL PRICE **$1.00**

Fruit-Grower and Farmer....$1
Garden Magazine $1.50
McCall's Magazine.....50c
(With Free Dress Patterns)
$3.00
OUR SPECIAL PRICE **$1.75**

Fruit-Grower and Farmer....$1
Farm Journal, 5 years.....$1
Woman's World 35c
(With Free Book of Music)
$2.35
OUR SPECIAL PRICE **$1.20**

Fruit-Grower and Farmer....$1
Farmer's Review (weekly) $1
People's Home Journal.....50c
(With Fruit-Growers Guide-Book)
$2.50
OUR SPECIAL PRICE **$1.25**

Secure This Big "Rural Trio"

Fruit-Grower and Farmer....$1
Ladies' World $1
Standard Poultry World.....50c
(With Fruit-Growers Guide-Book)
$2.50
OUR SPECIAL PRICE **$1.25**

SELECT YOUR CLUBS—Sign your name, enclose money and send this coupon to THE FRUIT-GROWER AND FARMER, St. Joseph, Missouri.

Gentlemen: Find enclosed herewith $..... for which send me the following clubs:

.....

.....

.....

NAME .....

ADDRESS .....

NOTE—If you send subscriptions to friends, write them on separate sheet.

The Smuts of Grain

The smuts are plants which live in the tissues of other plants, such as grains and grasses, and produce the dark, sooty masses from which they receive their names. They are composed of numerous fine, almost colorless threads, or runners, and steal their nourishment from the food prepared by the green plants for their own use. In fact, a smut can long grow outside of a living plant, says Farmers' Bulletin, No. 507. When the smut-infected plant is about to mature, seed formation is often prevented and the smut forms the smut masses, composed of large numbers of small dark bodies called spores. These, like seeds, may germinate immediately or lie dormant from season to season and serve to propagate the smut from one crop to another.

There are many kinds of smuts. These resemble each other in many of their life habits, but in other respects they differ and are just as distinct as the various kinds of green plants. Thus, smut from barley cannot live in wheat or oats, smut from wheat in oats or barley, smut from oats in barley or wheat, or smut from corn in any of the small grains.

Smuts are found and thrive under practically all conditions and in all climates where grain crops are grown. Thus the loose smuts are abundant not only in the humid regions of the East, but also in the semi-arid regions of the West. The same is true of the other smuts of wheat, oats and barley. Although some years seem to favor their growth more than others, and extreme humidity or drought has considerable influence on the prevalence of all of them, they are rarely, if ever, entirely absent. There are a number of smuts illustrated and described in the bulletin referred to, and in telling how to know the different kinds of smuts, says:

The Stinking Smut of Wheat.

The stinking smut of wheat, often called "bunt," is easily distinguished in the field when the grain is almost ripe. The smutted plants are usually slightly stunted and the heads stand more erect than the heavy, sound heads. The chaff is spread apart more or less by the dark swollen kernels. When the tough membrane or skin of such a kernel is broken, a dark, smeary, dustlike mass is disclosed, which has a peculiar fetid odor like that of decaying fish. This odor may often be noticed at a distance of several rods to leeward of a badly smutted field. The loss due to this smut results not only from the destruction of the kernels of diseased plants but also from the dockage in marketing grain from smutted crops. There are two kinds of stinking smut, but they are so much alike in appearance and general character that for practical purposes they may be regarded as the same.

The Loose Smut of Wheat.

The loose smut of wheat is most noticeable at the heading time of the grain. In the smutted heads the kernels and chaff are replaced by a dark, sooty mass which is soon blown away by the wind, leaving bare stems that are usually not noticed at harvest time. All such smutted plants are a dead loss in the crop and sound plants should have been in their place.

The Covered Smut of Barley.

The covered smut of barley is most noticeable several days after the barley is fully headed. The smutted heads are darker in color than sound heads, and the kernels are composed of greenish black masses of smut. These are not blown away by the wind, but remain until the grain is harvested and thrashed, when the smutted heads are broken. Many of the smut masses are not separated by the thrashing machine but remain in the grain, smearing it with smut.

The Loose Smut of Barley.

The loose smut of barley is most noticeable at heading time, the smutted heads being composed of dark, sooty masses which are blown away by the wind exactly as in the loose smut of wheat, leaving the erect stems without heads. All such smutted plants are a dead loss.

The Smut of Oats.

The smut of oats is most easily noticed a little before the grain is ripe, when the smutted plants are found to be shorter and to stand more erect than sound plants. In place of kernels there are dark masses of smut dust, which sometimes are covered by the chaff and sometimes are left fully exposed. Like the stinking smut of wheat, this smut is of two kinds, which are so similar that for practical purposes they may be handled as one. A greater percentage of the crop is destroyed by this grain smut than by the other.

The Smut of Corn.

Corn smut is unlike the smuts of the small grains in that it not only occurs in the head, or tassel, and on the ears, but also on the stalk. When present it is very noticeable as it forms dark smut boils or masses on various portions of the corn plant. As a rule, however, it is less destructive to the corn crop than other cereal smuts are to the small grains.

The Prevention of Smuts.

Since the stinking smut of wheat, the covered smut of barley, and the smut of oats are propagated from year to year, principally by means of the spores clinging to the outside of the seed, clean seed is of prime importance in order to grow a crop free from these smuts. This may be obtained in two ways: (1) By using seed from a crop which had no smut in it and which has been kept clean or (2) by treating the seed by some method which will kill the smut and leave the seed uninjured. The former method seems easy at the first glance and should always be used where the seed is not treated for smut. It has some disadvantages, however. It is almost impossible to know whether or not a crop is absolutely free from smut unless it has been examined very carefully before it is cut. Even then, if there are only a few smutted heads, they may not be noticed. Each one of these produces thousands of spores which may become distributed over the seed, so that a smutted plant of one year may give rise to hundreds the next. Again, if the crop is absolutely free from smut, but is thrashed in a machine that has been used with a smutted crop, innumerable spores found inside of the machine on the cylinder, in concave grooves, sieves, shaker, etc., will get on the seed and cause smut the following year. Sacks, bins, fanning mills, or other machinery which have been used for smutted grain, unless disinfected, will spread the smut more or less in a similar manner. In a community where smut is present, therefore, one can not always be sure that a crop will be free from the smut because the seed came from a crop that was clean the preceding year. In such communities the second method, namely, to subject the seed every year to some treatment which will kill the smut spores but leave the seed uninjured, is the most effective way to prevent these smuts until the community as a whole is smut free. Several treatments are known which are very satisfactory.

For the loose smuts of wheat and barley clean seed from a clean crop is a good remedy. These smuts can not be distributed in thrashing or by smutty machines of any kind, as they must infect the seed at the flowering time if they are to produce smutted plants the next year. These are very easily seen in a field if it is examined when the grain is heading. Seed from a crop apparently clean, therefore, is likely to produce a clean crop the following year. There is, however, some uncertainty even here. If a clean crop has been grown in a neighborhood where loose smuts are prevalent, the spores from smutted fields may have been blown by the wind into the clean field. The flowering grain may thus have been infected and seed from this field would very probably produce some smut the following year. The best way to produce crops free from the fungous is to use seed from neighboring localities where smuts are absent, if such can be found, or from an isolated plat set aside for seed purposes, seed for this plat having been treated by the so-called modified hot-water treatment.

The smut of corn does not live from one year to another on the seed, and seed treatments are therefore useless. In fact, there are no certain methods for preventing the smut, but some measures which may help to reduce its prevalence are known and are described in the bulletin.

Treatments.

A large number of treatments for the prevention of stinking smut of wheat, smut of oats, and covered smut of barley are known, and several of these have proved equally efficient for all of the smuts. They consist in soaking the seed in some solution which will kill the smut spores, but will not harm the seed. Many such disinfecting solution are known and all have been found more or less effective. Hot water, tar solution, copper sulphate or bluestone, and formalin are the most important of these treatments, and the two latter have been used extensively in this country.

The several ways of combatting these destructive fungi are described in detail in this bulletin, and every grain farmer, no matter whether he has a large or a small acreage, should send to the Secretary of Agriculture for a copy of this bulletin—Farmers' Bulletin No. 507, entitled "The Smuts of Wheat, Oats, Barley and Corn." To stop the losses from the stinking smut of wheat alone would enrich the farmers of the United States considerably over nine millions of dollars each year. Saving grain from loss by smut is one of the ways of increasing the yield and making more money from their grain crops.

Subscription expired? Renew today.

Otwell's Tree Paint

(PATENTED)

For Winter Use

IF YOU ever had any experience with rabbits, field mice or other winter tree pests, you don't need any warning, but if you haven't, look out! One rabbit can do more damage in a single night than the cost of protecting your entire orchard.

Those who have tried to protect their trees with corn stalks, old rags, newspapers, screens, manufactured devices, axle grease, etc., know how unsatisfactory they are—taking a lot of time to apply, and often doing more damage than they prevent.

The safe, sure and reliable method of protecting your trees during the winter is by applying OTWELL'S WINTER TREE PAINT.

It has proved itself in thousands of orchards throughout the country—has been the old standby of orchardists for many years.

It contains no oil or grease—nothing to harm any tree. It is simply a powder which you mix with water and apply with an ordinary clean paint brush. A boy can paint one tree per minute—a large orchard in a day or two.

Here are two letters taken at random from among hundreds received from satisfied users of **Otwell's Winter Tree Paint.** Names furnished on request:

"I painted about 4,000 trees last fall, and I found the bark fine and smooth up as high as I painted—nothing disturbed the tree."

"Your paint used on about 300 of my young apple trees last fall, not only kept the rabbits from gnawing, but also kept the borers away, and I have noticed no bad effects from the use of it."

OTWELL'S WINTER TREE PAINT

besides giving your trees absolute protection against rabbits, benefits them in other ways also. It makes the bark grow smooth, instead of rough and scaly.

It is a partial protection against cold and sudden changes of weather. Thousands of trees have been saved by it.

It destroys the eggs of tree enemies—borers, lice, etc.

In the spring it is carried to the roots by the showers of rain and acts as a powerful fertilizer.

Put it on just before it freezes in the fall. It may save you hundreds of dollars.

Price $1.50 per gallon size, or 80c per half gallon size. One gallon will cover 300 trees of average size. Are your trees worth half a cent each?

If you can't get **Otwell's Tree Paint** from your dealer, write for free literature to the nearest distributor, if there is one in your vicinity in the following list. If not, write us direct.

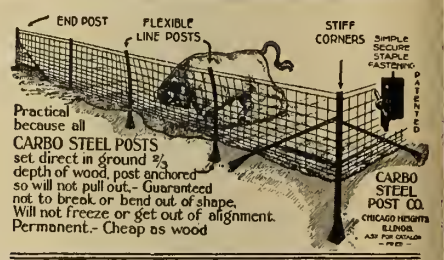
W. P. FULLER & CO.: San Francisco, Sacramento, Los Angeles, San Diego, Pasadena, Oakland and Stockton in California; Portland, Oregon; Seattle, Tacoma and Spokane in Washington; Boise, Idaho.

Missoula Mercantile Co., Missoula, Mont.
Kalispel Mercantile Co., Kalispel, Mont.
Parchen Drug Co., Helena, Mont.
Bennett Glass & Paint Co., Salt Lake City, Utah.
Ogden Paint, Oil & Glass Co., Ogden, Utah.
McMurtry Mfg. Co., Denver, Colo.
Pimbley Paint & Glass Co., St. Joseph, Mo.
Brown Camp Hardware Co., Des Moines, Ia.

Patents controlled and paint manufactured exclusively by

MINNESOTA LINSEED OIL PAINT CO.

1101 Third Street S. Minneapolis, Minn.



FRIENDS THAT ARE FRIENDS

SPRAYERS

The FRUIT GROWERS' BEST

IT MATTERS NOT WHETHER YOU HAVE 1 OR 1000 ACRES THERE'S A "FRIEND" FOR YOU

POWER SPRAYERS-HAND SPRAYERS-NOZZLES HOSE-FITTINGS

SEE THE PRETTY "FRIEND" CAT BEFORE YOU BUY

"FRIEND" MFG. CO.—GASPORT NIAGARA CO., NEW YORK

THE OLDEST AND LARGEST FACTORY DEVOTED EXCLUSIVELY TO MFG. OF SPRAYING OUTFITS

Old Masters' Violin **FREE** Fine Tone

We will give you this superb violin and complete outfit absolutely FREE. Wonderful new system. You can be a fine player in short time by note, very small charge for lessons if we satisfy you. Violinists make big money. Write to SLINGERLAND'S School of Music, Dept. 18, Auditorium Bldg., Chicago, Ill.

SALEM NURSERY COMPANY SALEM, OREGON

If you want the best results plant the best stock. This is the kind we grow. AGENTS WANTED.

EASY TO SELL OUR TREES

Treatment For Hardpan Soils

Most crops on hardpan soils such as those in southeastern Kansas, for example, are not producing profitable returns, and they never will until better methods of farming are used.

Hardpan is composed of very small grains; the soil runs together badly, and the humus is burned out easily. You must handle such soils carefully.

The larger part of Kansas hardpan soils are acid, and need lime badly. In most cases, the soils are so acid they will not grow any of the legumes except cowpeas. Then they are so compact that the plant roots cannot make a good growth. When lime is added to the land, it will correct the acid condition, force the soil grains apart and make the soil more loose and open, make the plant food more available, especially the nitrogen compounds, and encourage the growth of the desirable bacteria.

If you think the soil is acid, you had better make the litmus test. There are better tests than the litmus test for soil acidity, but it is very simple and may be used by anyone, anywhere. Buy five cents' worth of blue litmus paper at the drug store; take one of the pieces of paper and press the moist soil firmly around it. If the soil is very dry, add some water. Let the ball of earth stand for a couple of hours, though usually the reaction will show much quicker, and then break it open and look at the paper. If the paper has turned red, the soil is acid, and lime should be applied. Make this test in several places in the field, so there will be no chance for error. As soils are farmed and the humus gradually is used up, they tend to become acid, even if they were not at the first, but sometimes the native prairie soil is acid. Dr. E. A. Donaven, Pryor, Okla., found acid in soil this spring on some of his land that had been plowed for the first time last fall. Most of the tests on the hardpan soils of southeastern Kansas, such as those in Wilson county, have shown acid to be present.

Spreading the Lime.

Apply lime at the rate of four tons to the acre for the first application, and about two tons an acre every four years after that. Lime can be applied with a special lime spreader, or with a manure spreader, but the lime is hard on the gearing of manure spreaders. If the patch you decide to lime is small, the lime may be applied by hand, but this is a very disagreeable job.

Lime should be applied in the form of calcium carbonate or ground limestone, to these soils, as the other forms of lime have a tendency to eat up the humus in the soil, and they are more expensive. G. R. Wheeler, Tyro, Kans., has used lime very successfully on hardpan "patches" on his farm.

Grow leguminous crops on the hardpan much of the time. Usually you will have to grow clover and cowpeas, as alfalfa will not do well on such soils, as a rule. In many cases, the land is so poor that it will be necessary to grow cowpeas for a year or two before you even can get a stand of clover. It would be of great value to plow under a crop of cowpeas, for cowpeas have an abundance of nitrogen in their stems and leaves, and they do not produce a large amount of acid when they decay in the soil. If you grow a crop like cane, and plow it under to add humus to the soil, it will, perhaps, add more humus than cowpeas, but it will not add much nitrogen, and it will produce an immense amount of organic acids. Thus you will make your soil even more acid unless you add plenty of lime. So grow cowpeas as a green manure crop.

Tile drainage will aid hardpan soils. As the soil runs together so easily, it will hold water like a tub, and the water fills up the space between the soil grains, drives out the soil air, and makes the conditions unfavorable for plant growth. If tiles are placed in such land, water will sink down to the tiles, drain away, and tend to make the soil more open. The tiles must be placed rather shallow, for if they are placed deeply the water will not flow into the drains readily.

The substance in soils that binds the grains together so closely is a soil cement that has a long name, hydrated aluminum silicate. If the soil contains one and one-half per cent of this substance, and many of the hardpan fields contain that much, the land runs together easily when the soil is plowed when it is too wet. That is what makes some of the soils in the country resemble an Egyptian brick field. In fact, at Buffalo, Kans., this hardpan is taken, along with the shale that is underneath, to make brick. Lime diminishes the effect of this substance.

Dynamite for Hardpan.

Dynamite is being used on some of these soils to a considerable advantage, but as yet the process is more or less in the experimental stage. There is no doubt the soil can be broken up by the use of dynamite, and at not a very great cost, but there is a question as to whether the soil will stay apart after it is broken up. If a good crop of legumes and the grasses are started on the soils promptly, the grains may be kept apart. The Kansas Experiment Station is carrying on experiments on several farms in southeastern Kansas to see if the land may be kept open after it has been broken up with dynamite. It will take some time to finish the experiment, and to be certain whether the grains can be kept apart.

But in growing crops on these fields you should adopt a rotation in which the legumes have a prominent place. As a rule, the grain crops do not return much profit on this type of land, and it will not pay to grow them very much.

Of course, you should add all of the humus to the soil you can, and one of the best ways to do this is to add plenty of barnyard manure. Add all the barnyard manure to these heavy soils you can get, for it contains available plant food, will add humus, and tends to promote the growth of desirable soil organisms. But you also should plow under green manure crops, like cowpeas, to add to the supply of humus.

So, in the management of hardpan soils, add plenty of lime to correct the acidity, keep up the supply of humus and adopt a good, logical crop rotation. If this is done you can get returns from hardpan that are worth while.

ORENCO TREES

ONE YEAR TOPS ON THREE YEAR ROOTS

Human Effort; Human Care; A High Ideal

coupled with Oregon's fertile soil and unexcelled climatic conditions—combine in making

ORENCO TREES

unexcelled in hardiness, growth, root-system, reliability, early productiveness and altogether the most economical trees for you to plant. Don't take somebody else's theory to the contrary—let us give you sound, reasonable, acceptable evidence. Wish you could see our one and two-year-old apples in such varieties as

Jonathan	Rome Beauty
Gano	McIntosh Reds
Wealthy	Winesap
Gravenstein	Winter Banana
Etc.	Etc.

We'd like you to investigate Orenco Trees. May we send you our freely illustrated booklet, "About Orenco"? Don't speculate any more in fruit trees, but invest in Orenco's Standard Trees. For information address "Sales Dept."

OREGON NURSERY COMPANY

The 1200 Acre Nursery

ORENCO OREGON

Do You Spray Your Fruit —or Let It "Just Grow"?

to get flawless fruit that sells for high prices you've got to kill insects and prevent diseases on your trees. An orchard that is sprayed right is sure to yield good profits, but one not sprayed is a disappointment and a burden to you all the time. To control insects and diseases you must use spraying materials that are unquestionably correct and uniform in action and condition.

A good spraying material is made from several proper elements that have been **joined,** not just mixed, into one material by chemical **reaction.** Orchard Brand spraying materials are all this, and more, for they are made in thoroughly equipped factories, and **we test them.** Thousands of orchardists today will use no other spraying materials but ORCHARD BRAND.

Let Our Experts Tell You How to Spray

Insect and disease damages vary in different localities and seasons, and on different varieties. Spraying must vary to suit each situation. The ORCHARD BRAND Special Service Department is equipped more completely than any other organization to suggest the best treatment for any orchard in the country. These experts will be delighted to tell you without charge what to do in the entire management and care of your orchard. Send today for ORCHARD BRAND spraying schedule, the best and simplest ever made, for "Orchard Census" blanks and full particulars.

Thomsen Chemical Company

Winder Street. BALTIMORE, MD.

INSECTICIDE PLANTS AT EAST ST. LOUIS, Baltimore, Syracuse, and Ft. Valley, Ga. Storage tanks in many localities.

Do Bugs and Worms Bother?

Do they prevent your having beautiful trees and perfect fruits and vegetables? Do you understand the art of modern orchard practice, including budding, grafting, pruning, cultivating, the prevention of mould, mildew, scale, scab, etc.? Do you know how to successfully grow potatoes and other vegetables for profit?

OUR HANDSOME NEW BOOK

"The Why and How of Orchard Success"

will prove invaluable to you, and contains a gold mine of useful information for the novice and the expert.

SEND FOR IT TODAY—ONLY FIFTY CENTS, POSTAGE PAID

Our complete illustrated catalogue of Spraying Machinery is FREE for the asking, and a postal will bring you in touch with our nearest agent.

FIELD FORCE PUMP CO., 801 Grand Ave., ELMIRA, N. Y.

Hood River Apple Trees For Sale

Vigorous Trees, Well Rooted, True to Name

Jonathan Rome Beauty Delicious
Spitzenberg Newtowns
Arkansas Black Ortley Gravenstein

Also a good selection of other Standard varieties. Write for catalog and price list. You will find our prices right.

Hood River Standard Nursery Co., Hood River, Ore.

FUR NEWS MAGAZINE, all about hunting, trapping, fishing, raw furs, guns; good stories and photos. Market prices and names of reliable fur dealers. Every trapper, hunter and dealer needs FUR NEWS MAGAZINE. Copy, 10c.; 3 months, 25c.
FUR NEWS PUB. CO., 71 W. 23d St., New York, Room 57

Why Not Have Best Light?

Steel Mantle Burners. Odorless, Smokeless. Give 3 times the light of ordinary kind. Guaranteed. Buy from your dealer or send 25c to us. Good Agents Wanted Everywhere.
THE STEEL MANTLE LIGHT CO.
323 Huron Street Toledo, Ohio.

Bigger Crops By Rotation

Maintains Fertility and Aids Control of Insects. How to Plan the Rotation

A good crop rotation is the best and cheapest way to help maintain soil fertility. All that men have found out about the soil has not shown them a better way to help maintain its productiveness than to vary the crops from year to year. Have you a good crop rotation on your farm? If not, you would do well to find out the principles on which a good rotation is based, and then follow them.

Crop insects are getting worse every year in the fields of the Middle West. About one-fourth of the cultivated crops of the country are destroyed every year by insects, and much of this loss could be prevented if the crops were rotated properly, so insects would not have a chance to become so numerous.

Always remember this about crop insects: The best and cheapest way to fight them is by a good, efficient rotation of crops. Especially is this true of most of the common corn insects. Corn-root worms, for example, usually are not hard to control if the owner of the field will see that the crops are rotated properly and that corn is not grown on the land too often.

Now it is not possible to lay down a rotation that will be all right under every condition. It may not even be possible to use the same rotation on all fields of your farm, for as the soil conditions vary the rotation also should vary. But the general principles that govern the rotation of crops will apply on all fields, and they should be used in the selection of the crops that can be grown with the most profit on that type of soil.

A good crop rotation will have these crops in it: A crop like clover, alfalfa, or some of the other legumes, to supply nitrogen and improve the physical condition of the soil, and a crop like corn or potatoes that can be used as a money crop and which requires good intertillage. Usually it is a good thing to include a crop like wheat, for which the soil must be well prepared. This rotation—clover, corn, oats and wheat—is a good one under most of the conditions in the humid sections of the country. It is a good basic rotation, and you can vary it to suit conditions on your farm.

Include Legumes.

But the most essential thing is the use of a legume. Nitrogen is the element most easily exhausted in soils, and it is the most expensive to replace. If fertility is bought in the form of commercial fertilizers, the nitrogen costs about three times as much as any of the other elements. As nitrogen can be obtained from the air easily by growing legumes, that is the way this element should be secured, except where, as in truck farming, for example, the land is so expensive that it is cheaper to buy the nitrogen than it is to grow it.

The great value of a good rotation in combating weeds should not be overlooked. Weeds are not so very hard to control for the man who will use a good rotation of crops, for if you change the crops from year to year, you will change the methods used in the cultivation and harvesting, and if you do that, the weeds will not have so easy a time in maturing their seed. Take, for example, the cocklebur which is one of the worst weeds in the cornfields. It is but little trouble to control this weed when a good crop rotation is used, for the weeds easily may be killed when the hay is cut in the summertime. Weeds like plantain, that are very bad in clover, are not hard to kill when the land is put in corn. Change the conditions under which the land is managed, and you make it much easier to kill them. Crop rotation is the best way to handle the weed proposition.

Plan the rotation so you will have about the same acreage of crops every year, as nearly as you can. If you keep some livestock, and there are practically no farmers who can't profitably do so, it is essential that you have the acreage of the various feeds running somewhat constant, so the number of animals kept will not have to be varied on account of the supply of feed. Feed this forage, and get the manure back on the farm as soon as you can. If you use a good crop rotation, feed the forage and grain that is produced on the farm, and then get the manure back on the land with as little loss as possible, the soil fertility proposition will be much easier to solve.

Advantages of a Rotation.

One of the advantages of a good rotation of crops is the different crops draw on the elements of soil fertility in different proportions. So there always will be a better supply of available plant food if the crops are changed frequently. Take, for example, the legumes. They draw on the land heavily for potash and lime, and a crop of wheat requires but little lime and not very much potash, but it does requires an abundance of phosphoric acid in order to mature the grain. And corn requires much more nitrogen than the other crops mentioned. Grow a variety of crops, and the supply of all of the essential elements in the soil will be higher.

But no matter what kind of a rotation you use, you should grow all of the cover crops you can. For example, it is a mighty good idea to grow a crop of cowpeas after wheat, if the land has not been sown to some crop, and if you don't intend to plant another crop on the land that year. If the cowpeas are plowed under, they will add considerable plant food to the soil, increase the humus supply, and improve the physical condition of the soil. But there is on thing you should remember when you grow a green manure crop: There will be a considerable production of organic acids by the decay of the crop in the soil, and unless the land contains an abundance of lime, the soil may become sour. It may be necessary to apply considerable lime, when green manure crops are grown so very much.

Potato Diseases.

It is an assured fact that if potatoes are to be successfully grown, more attention must be paid to the prevention of diseases. This phase of potato raising has been neglected so long that it is now absolutely necessary to take vigorous measure in order to insure profitable crops.

During the past season a large number of complaints have been made that potato vines were unthrifty or were wilting and dying. In every case the cause could be attributed to one of two common diseases: the internal brown rot, or "rosette." Probably the most common one of these was the internal brown rot. The loss in some cases was twenty per cent, and, in a few, cases, even greater. Certainly, when preventive measures are both simple and inexpensive, it is only good business policy to adopt these measures in order to realize the highest profit possible from the potato field.

At this time of the year, of course, not much can be done in the way of dealing with diseases. However, since storage conditions determine, in large measure, the amount of rotting in cellars, attention may profitably be called to this phase of the problem.

The fungi causing wilt diseases in Minnesota may live during the winter in the soil, or in potato tubers. The amount of damage done to the tubers during the winter may be greatly reduced by maintaining proper storage conditions. It has been found that a temperature of about forty-two degrees Fahrenheit will effectually prevent the development of internal brown rot, and probably also the other rots. Under conditions of ordinary cellar storage, the rots may develop rapidly, paving the way for the entrance of secondary organisms which cause the familiar sort, foul smelling rots. The loss is not confined only to the badly rotted tubers, but indirectly there must be considered to be a great loss from the planting of slightly affected tubers, which may show only slight evidences of an abnormal condition.

Too much emphasis cannot be placed on the absolute necessity for taking precautionary measures at once if good crops of potatoes are to be raised. Specific information concerning planting will be sent out before next spring. In the meantime, proper storage conditions should be maintained and plans made to plant potatoes on soil which has grown none for at least six years.—E. C. Stakman, University Farm, St. Paul.

Concerning Silo Construction.

Many statements have been made in the last few months about the different kinds of silos that are not strictly true. For example, in many cases, men who are interested in promoting various makes of silos have made the statement that some certain kind of silo will keep silage better than any other kind. That is "bunk" of the worst kind. All of the standard kinds of silo will keep silage about equally well, if they are well built.

There is considerable talk about the underground silo, and its advantages. It is being advocated by men who ought to know better. An underground silo is a poor thing to have. It is hard to get the silage out of it, and it is dangerous because of the gases that are formed. While the first cost may be a little less than an above-ground silo, it is more expensive when the cost of getting the silage out of the hole, and the bother of the whole proposition are considered. Don't build an underground silo, for it will pay so much better to build a good one.

Build a silo above ground, and remember you can keep silage about equally well in all of the principal kinds. All you have to consider is the cost, maintenance expense and probable life. When these factors are worked out, it will be found, in many cases, that either the thin-wall or the solid-wall type of cement silo is the best. Investigate the advantages of cement silos carefully before you decide to build some other kind.

Black walnut seeds are to be gathered in the fall, and the nuts carefully stratified. The nuts are not to be hulled even when the seed is planted, as the hull interferes in no way with the germination, and it may prevent the nut from drying out.

Gather the nuts, and alternate a layer of them with a layer of sand and leaves. Moisten the pile, and allow it to freeze. Let it remain moist and frozen all of the winter.

Plant the seed next spring as soon as the ground is in a workable condition. Black walnut trees will not make a good growth unless the ground is rich, and they ought not to be planted on any other kind. Prepare the land carefully and plant the nuts three feet apart in furrows ten feet apart. Plant the nuts four inches deep. As the black walnut is very sensitive to dry, parched conditions, it is necessary to give the trees good cultivation, and carefully conserve the moisture.

BOYS!
GIRLS!

Here's an Excellent Opportunity to Secure a Beautiful Xmas WATCH WITHOUT COST

BOYS! GIRLS! HERE is the Handsomest and Neatest Little Watch you've ever seen. It is a Standard 16 size, and has beautifully embossed case, with open face. It is stem-wind and stem-set, and will run 30 to 36 hours with each day's winding. It is guaranteed for one year by the manufacturers, just like all high-grade watches are, and the manufacturer agrees to keep it in repair or replace it if through fault of defect in the making, it fails to run steadily and regularly.

This watch is really a little beauty, and we are going to give one away to every boy and girl who will do a little favor for us.

TO MAKE IT EASY TO EARN THIS WATCH

We will send you ten of one Beautiful Sepia Photo-Engravures, size 11x16 inches, without cost to you. These you give away to ten of your friends, who give you a six months' trial subscription to The Fruit-Grower and Farmer, at our special price of only 25 cents each.

These pictures are a beautiful work of art. They are exact reproductions of the famous paintings—and sell for upward to 50 cents each at your art store. When framed will add splendid beauty to the home.

Therefore, send for these ten beautiful Sepia Photo Engravures. They are very attractive and will add great strength to getting your subscriptions.

Send for these pictures today—they are free—then go call on your friends and neighbors and show them the pictures and a copy of The Fruit-Grower and Farmer. Impress upon them that you are out to earn one of these beautiful watches—and that their order will help you earn it. Explain to them that your folks read The Fruit-Grower and Farmer, every issue, and that they always derive a great deal of valuable information from it every issue. You will have your ten trial orders before you know it.

Send for these pictures, sample copies of The Fruit-Grower and Farmer, and subscription coupons. You are sure to earn this watch without a single cent of cost to you. So do not delay one minute to send us a postal card or letter, saying you want the pictures, samples, coupons. The watch is a little beauty and you will appreciate it. Remember, every boy and girl gets one of these watches, who sends us only ten trial subscription at 25 cents each. Send in your card or letter for the pictures, etc., today—sure.

The Fruit-Grower & Farmer, St. Joseph, Mo.

TREES and PLANTS All kinds— by the Millions — at wholesale prices. Big supply Apple and Peach Trees. Privet Hedging. The Westminster Nursery, Westminster, Md.

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. Hanson & Son, Hart, Mich.

Fall Planting of Evergreens

At this season of the year, property owners are thinking of planting out some evergreens about their homes or parks. They hesitate over the advisability of planting in the fall, and wonder whether they have to wait until spring for the best results.

This question is one that has to be settled in each district according to soil conditions. Evergreens are not nearly so exacting as is often thought. They can be planted as well in the fall after the growth has stopped as they can in the spring. In either case, it is necessary to take the plant while it is in a dormant condition. If the planting is done carefully, the seedlings will receive only a slight setback by the transfer. They may be planted any time after growth stops, until the ground freezes.

In order to be successful with fall planting, the soil must be practically free from clay, and of such a character that it will not heave in the winter with alternate freezing and thawing of the ground. Seedlings planted in the fall in clay are likely to be thrown clear out of the ground by the heaving of the soil, or at least drawn so far out that the roots are unduly exposed, and the tree dries up. That is the one objection to planting in the fall.

When planting is done in the spring, the little trees obtain a sufficiently deep hold, and the soil becomes so settled that this heaving does not seriously effect them.

Whether the planting is done in the fall or spring there is one point which should be kept in mind. Pine seedlings cannot stand any exposure of roots. If the fine rootlets dry out, the tree will die. In order to prevent this, it is necessary to wrap the seedlings, as soon as they are taken from the ground, in wet sphagnum moss, or put them in a bucket of water. It is neither necessary nor advisable to dip them in liquid mud, as is sometimes recommended. They should be taken from the moss or bucket singly, as they are needed for planting, and put immediately into the ground. If convenient, the extra precaution should be taken of doing the work on a cloudy day. The trees should be put in the ground in the same depth, and as nearly in the same position as when they are taken up.

If there are large numbers of trees to be transplanted, they should not be over three years old, preferably two-year-old seedlings, one year transplanted. These are comparatively cheap, and can be quickly planted. If there are only a few trees, and it is desirable to save time by planting larger trees, the size of the seedlings is only limited by the money available. The large trees require just as much care as the smaller ones, and are much more trouble to handle.

If the proper precautions are taken there is no reason why the transplanting of evergreens should not be just as successful as the transplanting of elms or other hardwoods.—E. G. Cheyney, Professor of Forestry, University Farm, St. Paul.

Plant Catalpas

If one desires to plant a grove, what variety of trees will return the greatest cash returns? Unless large trees are desired, catalpas will give a larger profit than any other tree, where they will grow well. Catalpas, however, require good ground, and it is no use in planting this variety unless the ground is reasonably rich. And it will not do well on high, sandy hills, where the supply of moisture is not sufficient. And, also, it will not do well where the land overflows too often, for when muddy water gets over the young trees, it is very hard on them.

But, with these exceptions, catalpas will grow in a great variety of soils, and if you do your part, you can be certain to get good returns. The first crop of posts usually is harvested about twelve years after the grove is planted, though sometimes it takes a little longer. In one large plantation near Hutchinson, Kans., the owner has made more than $20 an acre, net profit, every year on a catalpa plantation.

The Osage Orange will do well on land that is too poor to grow a profitable crop of catalpas. If you have land that is poor, this is a good variety of trees to plant. But never expect to farm the land again, for the development of Osage Orange roots truly is wonderful. Usually it takes it a little longer to produce posts than it does with catalpas.

But whether you plant any trees or not, you can aid Nature in her plantings. Look at the trees on your woodlot. You will find that many are crooked, partly dead or have reached full maturity. In such cases, the sooner the trees are cut the better it will be for the woodlot, and the more profitable it will be for you. But when you are cutting the trees, be careful that you don't injure the young growth. When one has the larger trees sawed into lumber, usually many of the smaller trees are damaged. Many hands seem to think that because the owner is "sawing up" the trees, they have a right to "rip up" all the young growth that is in the way. The lumbermen, by careless methods of cutting, can do damage that it will take Mother Nature many years to repair.

Cut the Vines.

And here is a way one can make big wages. Many trees are burdened with poison vines, wild grapevines, and other vines that are hard on trees. If a tree is covered with vines, its growth is injured so it never can make a good tree. All of these vines should be cut. Give the trees a chance.

Most farms contain ground so broken that it is not profitable to use it for anything except growing trees. That, however, is no reason why poor species should be grown. In the blackjack hills of Woodson, Wilson and surrounding counties in Kansas there will be many changes made in the future. Much of the land is useful only for growing trees, and it never can be of value for anything else. But the land shouldn't be left in blackjacks, which are not valuable, and never will be. Tho land can be cleared and the sprouts kept down at not a very great expense, and the ground could be set to catalpas which would do well on this soil, and would return a good profit. As the land gets to be more expensive, this will be done.

Western farmers must make more profit from the woodlots. Efficient business management should be introduced there, the same as in other lines. And the general plan is this: Always grow desirable trees of a desirable species, and be certain you make the conditions favorable for their growth.

Seed Corn House.

During the past year, one of the good things accomplished on the demonstration farm at Wadena is the working out of a suitable plan for a seed corn house. Mr. Frandsen, the owner of the farm, has erected a house sixteen feet square with eight-foot posts. The house is papered, boarded and shingled, and ventilation is provided by doors and windows.

The interesting part of this seed corn house is the arrangement on the inside for storing seed corn. Frames seven feet square were made of 2x4's, and braced so they may be hung as a gate. Wire is stretched around the frame on both sides to form meshes into which the ears may be placed. Each frame provides space for 1,600 ears. Mr. Frandsen is growing No. 23 corn, which is quite small, and consequently two-inch squares are large enough to accommodate the ears. With a large variety, the squares would need to be made larger, and a smaller number of ears would then be accommodated by each frame. The frames are hinged as a gate from each side of the wall, which leaves a two-foot alley through the middle of the house. A small truck is placed under the outer end of each frame to help carry the load. When the corn is out of the frames they may be swung back against the wall, leaving the center of the house open. In putting in corn in the fall, the two frames in the back end of the house are swung out in place. These are filled with ears. Then the next two frames a foot away from the first two frames are swung out and filled. This process is continued until all frames are full.

This small seed house arranged as described accommodates 200 bushels of seed corn with no two ears of corn touching, and each ear is placed in a frame so an individual ear test may be made without removing them—C. E. Brown, University Farm, St. Paul.

Most owners of creek farms do not make any great effort to fight the brush and timber that keeps creeping in from the woodland along the fields. Where there is plenty of rainfall, the timber can crowd in on the fields very rapidly, and the farmers who do not desire to have the size of their fields decrease should make every effort to keep the edges of the field trimmed up.

White elms are especially bad about working into a field. This tree has long limbs, which grow for really wonderful distances over the fields, shade the ground, and prevent the crop from making a profitable growth. Then the tree produces great amounts of seed which fly—yes, "fly" is the word, for they have wings—out over the fields, where they sprout and begin to grow. It is true they usually will die, but they cause as much bother as weeds, and they must be killed.

The only way to keep the edges of the fields looking as if someone lived on the farm is to trim them every few years. The supply of wood must be cut somewhere, and it should be cut along the side of the fields, where the removal of the timber will do some good. Fall and winter is a good time to do this work.

KING VINES

FOR SALE

I have this fall a fine lot of Strong, Well Rooted King Vines—two years old.

"Every garden should have its Grape Vines—The vines which produce the greatest quantity and finest quality, occupy no more space than the common kinds"

Besides the KING vines, I have Moore's Early, Worden, Delaware, Niagara and Concord. These varieties cover the Grape Season and have proven successful for both the garden and commercial vineyard. The vines now on sale are the best I'veever produced. Write for prices.

WM. K. MUNSON

VINECROFT

GRAND RAPIDS, MICH.

The NEW Edison FREE

Yes, free. We'll send the new model Edison Phonograph and your choice of over a thousand records. We want you to have all the waltzes, two-steps, vaudeville, minstrels, grand operas, also the sacred music, etc., etc., by the world's greatest artists. Entertain your family and your friends. **Give plays and concerts right in your own parlor.** Then, when you are through with the outfit you may send it back to us.

Just Take Your Choice

You get any of the outfits that YOU WANT. Your choice of records, too. Simply get the phonograph and the records and use them **just as though they were your own.** Entertain yourself, your family and your friends, too, if you wish, everything from the catchiest, newest popular songs, side-splitting minstrels, pealing organs, vaudeville, monologues, to the famous grand opera. **The world's greatest artists will come to your parlor through the Edison.** After you have had all this entertainment you may send the outfit back to us **at our expense.** Now if any of your friends wish to buy such an outfit, tell them they can get it at the rock-bottom price, on easy payments too. Terms as low as **$2.00 a month without interest.** And even if you do send it back we will feel amply repaid, because we know that we have made a friend of you and we also know that you will praise the wonderful new style Edison.

Send FREE Coupon for the New Edison Book

Get our handsome, new, free Edison catalogue and list of over 1,500 records, so that you can select just the machine and the records that you want. All you need to do is to return the outfit at our expense when you are through with it. Write today. Let us tell you all about the wonderful new-style Edison and splendid entertainments you can give with it. Dont wait—your name and address on the free coupon brings you the big, new Edison catalog and full particulars of our ultra-liberal offer. Do not delay. Write today—now—immediately, while we are making this greatest of all phonograph offers.

F. K. BABSON
Edison Phono. Dist.
3668 Edison Blk.
Chicago, Ill.
Canadian Office
355 Portage Av
Western Office
65 Post St.
San Francisco
California

FREE Coupon

F. K. Babson
Edison Phonograph Distrs.
Dept. 3668
Edison Blk., Chicago

Without obligations on me, please send me your great, new Edison catalog and full explanation of your great offer on my choice of a new style Edison Phonograph and records.

Name.....

Address.....

Extraordinary Xmas Bargain

Christmas Greetings

Whether your gifts are large or small, the recipient will appreciate a dainty package, prettily decorated with Christmas seals, stamps or tags. They emphasize the sentiment of the holiday season and add the final touch that makes the loving thought complete. A complete assortment of seals, stamps, gift cards, tags, post cards, etc., are always quite expensive when purchased at the store and many of our friends do not find it easy to obtain them. Our BIG 226-PIECE XMAS PACKAGE contains the following:

15 Beautiful Christmas and Holiday Post Cards, embossed and lithographed in gold and colors.
6 Large Cards, 4¼x2¼ inches.
8 Medium Cards, 3⅝x1⅞ inches.
10 Small Cards, 1⅞x1⅛ inches.
2 Xmas Folders.
6 Large Tags, 4¼x2¼ inches.
8 Medium Tags, 3⅝x1⅞ inches.
10 Small Tags, 1⅞x1⅛ inches.
25 Large Seals.
50 Medium Seals.
50 Small Seals.
10 "Merry Christmas" Stickers, 3⅝x1⅞ inches.
10 "Do-Not-Open-Until-Christmas" Seals.
16 Stamps.
(The seals and stickers are all gummed.)

The Fruit-Grower and Farmer

One of the highest authorities on horticulture and agriculture, is known the world over. In each issue it gives you ideas, plans and methods which are of great money value to you. It needs no introduction to you. Renew your subscription now and take advantage of this liberal offer.

Farm and Home

Covers everything that has to do with the farm, big or little. It gives its readers just what they want, not theories, but proven facts. Its editors and contributors are men and women who "know," who live in the midst of things they write about. Farm and Home is published twice a month, 16 to 48 pages. It is chuck full of practical information. Each issue has special articles on Housekeeping, Gardening, Farming, Fruit-Growing, Dairying, Live Stock and Poultry.

A year's subscription will include the big "Poultry Annual Edition," printed in February, which alone is worth the price you pay for this combination. Send in your order today.

Big 226-Piece Xmas Package . . . Value $ .50
The Fruit-Grower and Farmer, one year " 1.00
Farm and Home, one year—24 issues " .50
Actual Value in Dollars and Cents . . . $2.00

WE GIVE YOU ALL THREE For **$1.00**

We Will Accept new or renewal subscriptions for either publications on the offer. Even though your subscription doesn't expire immediately it will pay you to take advantage of this extraordinary offer NOW. Call at this office or send $1.00 by mail. Send your order TODAY; this offer may not appear again.

Don't Be Disappointed! We have only contracts for a certain number of these Christmas Packages. After our present supply is gone it will be impossible to get any more before Christmas; therefore, we would advise IMMEDIATE ACTION to avoid a disappointment.

Send Order to FRUIT-GROWER AND FARMER, St. Joseph, Mo.

Producing Sweet Milk

One of the great difficulties in the milk business is keeping the milk in a good, sweet condition until it reaches consumers. This is especially true in the warm season, but also applies in the cool season to a lesser extent. The success of dairymen who wish to develop a milk trade depends to a great extent upon their ability to produce milk that will remain sweet a reasonable length of time.

In order to produce the best possible results, dairymen should be familiar with the nature of the products with which they are working. The cause of the souring lies in the fact that milk decomposes readily by the action of micro-organisms. The main product formed from this decomposition of the milk sugar is lactic acid. With three per cent of lactic acid, milk tastes sour and becomes curdled. If the dairyman would retard this process, he must check the development of bacteria in the milk.

The souring process may be retarded by preventing the introduction of bacteria into the milk during the milking process, and after the milk has been drawn. This is not so easily accomplished as the casual observer might expect. Innumerable bacteria are present even in very small particles. Sufficient filth falls into the milk pail from a comparatively clean cow, during the milking process, to set up a fermentation. This introduction of filth may be prevented, to some extent, by the use of a modern, sanitary milk pail, the top of which is partly covered, and by currying the cow and wiping off the udder with a clean, damp cloth before milking. The milk, as it is drawn, contains only a very few bacteria, and unless it is contaminated at some time during the milking process or while the milk is being prepared for market, it should remain sweet for a considerable length of time.

In order to free milk utensils from bacteria it is essential that they be thoroughly washed and scalded after they are used. A small amount of sour milk in the pail, can or bottle is usually sufficient to sour the milk rapidly.

The temperature at which milk is held has a decided influence on the growth of the bacteria, and consequently on the souring of the milk. Milk should be cooled immediately after it has been drawn, to check the growth of the bacteria from the first. Too often the milk is allowed to stand at a high temperature for a considerable length of time before it is cooled.

If the above facts are kept in mind, the dairyman should have no trouble in delivering milk to the consumers in a good, sweet condition. If I were to sum the whole up in one sentence, I would say: "Keep milk clean and cool."

G. E. FREVERT.
Idaho Experiment Station.

Farmers and Small Towns.

Many of the small country towns are not giving the farmers who trade there a square deal. When the farmers maintain the town with the wealth they produce, they have a right to demand that their rights will receive consideration.

One thing every town should have is a rest room, where the farmers and their wives could rest when they come to town. It would pay the merchants well to maintain such a room as an advertising feature for the town, for it would attract an increased trade. Such a room should have newspapers, magazines and books, and a place where the women may cook meals if desired. There should be a competent woman in charge of the room, who could make the visits of the country people to the towns much more pleasant. There is a good rest room of this kind at Excelsior Springs, Mo.

Plenty of hitching racks should be provided. These racks need not necessarily be placed in the main street, but they should be placed in the nearby side streets. The posts should be placed in the ground firmly, so when an animal is "anchored" he will stay there. Many country towns are very careless about providing enough hitching room, and on Saturday afternoon it is hard for the farmers to find a safe place to hitch their animals.

In some towns, merchants have gotten together on the prices of the produce of the farmers, and the selling price of the things the farmers buy, so the farmers get the worst of the deal both ways. Of course, the merchants should charge a reasonable profit on the things they handle, and most farmers are willing to pay a fair profit, but in some cases the prices that are paid for farm produce, especially, is nothing short of robbery.

Farmers should get together on this proposition, and where they are not getting a square deal, they should refuse to trade with the business men of the town. In most of the country, there are enough towns so the farmers need not be dictated to as to where they may trade. Especially should they insist that a rest room for their families be provided.

The trade of farmers is the thing that keeps most of the small, rural towns alive. If the trade of the country people was taken away, the towns would "go flat" mighty quick.

More than three-fourths of the railroad mileage of the United States is operated by companies which engage in special efforts to promote agriculture. These railroads enter counties whose total area is almost nine-tenths of the total land area of the United States, and whose farms compose more than nine-tenths of the farm area of the country.

Big Spraying Season Coming:

A letter from the Friend Mfg. Co., Gasport, N. Y., says that orders for spraying machines are coming in as never before at this season of year, and that indications point to 1913 being the biggest year in history of the Friend Co.—Adv.

Subscription expired? Renew today.

Automobile Pleasures

By President John N. Willys
The Willys Overland Co.

To the man who loves out-of-doors, the towering mountains, low sweeping plains, the fascination of speeding over smooth country roads, up hill and down dale, reeling off mile after mile with an exhilarating wind slapping him in the face, the approaching fall with its crisp and wholesome air, and its kaleidoscopic hues of foliage cannot but appeal.

While year-around touring is increasing in volume it is the autumn months that bring the motorists out in great numbers.

The motorist who tours knows the keenest joy that comes from the possession of a reliable car. He knows where nature dons her brightest array or performs her greatest wonders; he knows the quaint inn where mine host sets forth his larder's best; he knows the industries of one city, the gaieties of another; he knows the stream where the trout rises swiftest to the fly, the fields where the quail whirrs at the pointer's flush; he knows the links where hazards make the gamiest stroke—yes, he knows all of the out-of-doors.

Thousands of Americans never knew their country until the coming of the motor car. Its Switzerlands, its Rhines, its Italian lakes, were sung only in the prose or verse of pioneers, who by wagon trail, on horse, or in canoe had penetrated regions fair as the Continent at her best can boast.

The owner of a thousand dollar car may, today, spin through regions unknown to him a decade past, or vaguely imagined from guide book description or trapper's tale.

Borough, township, state or nation have joined hands in a country-wide movement to lay down roads adequate for motor use. Highways have been pushed through wildernesses of rare beauty, beside romantic streams, over craggy mountains that test the daring of driver and construction of car.

From steam train window, the traveler might catch a mile-a-minute glimpse of mountain, valley or plain; but the spirit of discovery, the impulse to go into the back-country, to know its quaint byways, its hills and dales and bubbling streams, to smell the fragrant perfume of nature's foliage came with the automobile.

Certainly no other factor has contributed so largely to the general knowledge of beauties that exist over a greater area than under any other single flag in the world.

Small excuse is there for the motorist to confine his pleasure to city pavements, when half an hour or less will bring him into shady country lanes, past waving verdure, where bright germ-destroying sunlight abounds and life-giving clean air brushes the cobwebs of care from jaded brain and fagged system.

It has been said that God made the country and man made the city, but the country was made for man and the motor car has brought the two together.

A Few Principles of Vinegar Making.

Vinegar results from the fermentation of alcoholic solution and can only take place when the acetic organisms are present and the supply of oxygen is abundant.

Alcohol may be oxidized by purely chemical means, but this is not the usual and simple method employed in common practice. These organisms responsible for the acetic fermentation are widely distributed in nature, and will practically always appear if such substances as wine and cider are exposed to the air at a warm temperature. Their presence is manifested by the appearance of a white scum covering the surface of the liquid or the development of a stringy mass in the bottom, this latter growth is commonly called the "mother of vinegar."

The temperature at which these vinegar germs work is from 82 to 85 degrees. A temperature of 95 degrees will practically prohibit their development and the consequent formation of acetic acid or vinegar, and at a temperature much below 82 their action is so feeble that little fermentation results.

Free access of oxygen or air is absolutely necessary. It is a mistake to fill a barrel full of cider and expect good vinegar to result.

The barrel should be but half filled and a bung hole opened immediately above the liquid on one side and another near the top on the opposite side. In this way a free circulation of air is assured.

Solutions containing more than about 14 per cent of alcohol will not allow the vinegar organisms to work.

Sometimes cases will arise where the germs are not present. In that case a small amount of old vinegar can be added to the cider or wine as a starter.

The fermentation will not take place in a day, but requires from three to six weeks to produce the proper per cent of acetic acid to insure a first-class product.

The alcoholic solution used, such as cider or wine determines the flavors and colors of the vinegar. The germs producing the acetic acid are only concerned in the production of acetic acid from the alcohol.

There is no need of adding sugar to the solutions from which vinegar is to be made for the power of these germs to work on sugar is very slight if present at all. During alcoholic fermentation the sugars are used, but during the acetic fermentation it is principally the alcohol that is converted into the acetic acid or vinegar.

JOHN F. NICHOLSON.

Idaho.

Let the Water Pass.

Much of the flood damage along the creeks could be prevented if the channels were cleared of obstructions. Most of the small streams are badly obstructed by logs and drifts, and in many cases the trees and brush that grow along the banks almost choke up the channel. In some places the channels could be straightened without much trouble. Spend some time improving the channels this winter.

Probably one of the best examples of straightening a stream is on a farm west of Buffalo, Kan. West Buffalo creek cut across a neck of land, and the fall of more than a mile was put into one hundred yards. The cost of the work was $50. The land near the new channel never overflows, and the banks are not more than half full when the country is flooded both above and below the cut-off. There is no flooding of that section of the creek. The new channel has improved the value of the farm several thousand dollars. Many such changes profitably could be made on the farms of the middle west.

Another change in the course of a river that will be made some day is on the Fall River, west of Fredonia, Kan. There the fall of twenty-two miles on the river could be put into eight miles on a straight canal. Such a canal would prevent the floods which are very bad in that section, and it will be dug in the future.

But even if you can't afford the time and money to straighten a stream, you can increase the carrying capacity of the channel greatly if you will clear out the drifts and cut the brush and trees along the banks. Usually you can get some fuel from the drifts, and then the refuse may be burned without trouble.

Considerable fuel and poles may be cut along the banks of the stream, and it will be very profitable to do so. It is costing quite a lot of money every year in the damage that it does in forcing the water out on the banks, and the winter's supply of firewood must be cut somewhere. The wood may be gotten out of the creek without much trouble.

Do something for the creek channel this year. Clearing out the water courses is one of the improvements needed more than most other things on many farms.

No industry is so vital to the well-being of a nation as agriculture, and nothing is so vital to agriculture as the soil. From its treasury it has been estimated that we drew during the year 1909 more than $8,296,000,000, and its possibilities are as yet only partially realized. There are still in this country millions of acres which have never felt the plow, while those which are now under cultivation can, by the application of scientific principles, be made to produce many times the present value of their products. How to use and not abuse this great resource is the most important problem which faces the farmer of today—one worthy of the best efforts of our most profound and learned scientists; for upon its solution depends the future prosperity of the nation.

Secrets of Successful Poultry Raising

are all made plain and easy in following either the BRIGGS METHOD or the SMITH METHOD and having POULTRY SUCCESS, America's leading and most practical poultry magazine as a monthly guide.

NOTHING DIFFICULT OR COMPLICATED

about the Briggs or Smith Methods. The equipment is all simple and easy to make. Sick fowls are rarely seen, more eggs are hatched, more chicks raised to maturity, the egg basket is filled oftener and the FEED BILL IS CUT AWAY DOWN. The priceless secrets of many years' experimenting may now be yours.

A Feast of Facts and Sensational Secrets
All for $1.50

We will send (1) a copy of the 100-page Briggs Method book (new and latest revised edition) containing PROFITS IN POULTRY KEEPING SOLVED and (2) the invaluable SECRETS IN POULTRY CULTURE, giving to the world the secrets of Mr. Briggs, easily America's Thomas A. Edison of the poultry world; also (3) the new book and latest revised edition of the SMITH METHOD OF POULTRY KEEPING, and (4) include a year's subscription to Poultry Success, one of the oldest, largest and best poultry magazines published—monthly from 86 to 236 pages, full of interesting and valuable poultry news, facts and illustrations (subscription price, 50 cents per year) SAMPLE COPY FREE. Stamps accepted. We will send either the Briggs Method book or the Smith Method book, and include a year's subscription for only $1.00. Books and magazine can be sent to different addresses if desired.

POULTRY SUCCESS Springfield, Ohio

The Safe Investment of Your Money

A company that has withstood the test of time for fifteen years, growing stronger each year through prosperity and panics, is a safe place for your funds. Our record is one of uninterrupted success for a long period under one management, with increasing strength and security assured. Our

7% Gold Bonds

provide an absolutely safe investment with a fixed income. Interest is payable semi-annually. These bonds are in the denomination of $100 and have coupon attached. They are secured by first mortgage on our real estate and all other property, including The Fruit-Grower.

If you are considering the investment of funds, the security of principal is the first requirement and we can satisfy you, as we have many other readers of The Fruit-Grower, who are now drawing interest on our bonds. Send check for the amount you have to invest and we will forward the bonds by registered mail or express; or we will send the bonds to your banker and you may give him the money for them. Write today for some of these bonds. We refer you by permission to the First National Bank of St. Joseph. Address

THE FRUIT-GROWER, St. Joseph, Mo.

You Are Invited to Send Stories to Be Used in the Winter Numbers of The Fruit-Grower and Farmer

Your story will be carefully read, and given proper consideration as to suitability and timeliness.

Tell of your personal experiences in farming; your crops, your soil, your system of management, your implements, your profits, your selling plan, schemes, ideas. In other words tell how you farm. Address your story to

THE EDITORS
The Fruit-Grower and Farmer, ST. JOSEPH, MO.

A Grave Emergency

By William T. Hornaday

An immense number of useful birds of great economic value are being slaughtered annually. Many of our best species are on the toboggan-slide towards extinction. The destruction of these birds means a great increase in the armies of destructive insects; a great decrease in our agricultural products, and a great loss to consumers and to farmers.

The insect pests are preying on everything of the vegetable kingdom that man is producing, and upon many domestic animals as well. As their bird enemies decrease, the insect hordes increase. When 2,577,000 acres of wheat are destroyed in Indiana and Ohio in one year by the Hessian fly, as in 1900, does anyone believe that such an occurrence does not raise the price of wheat? Of the loss to the wheat-growers we are absolutely sure.

In 1904, the U. S. Department of Agriculture made a study of the losses to the people of this country by the ravages of insects. The estimates published in the "Yearbook" for 1904 have not been disproved or disputed. Here are the figures:

ANNUAL LOSSES BY INSECT PESTS.

Product.	Pct. Loss.	Amt. Loss.
Cereals	10	$200,000,000
Hay	10	53,000,000
Cotton	10	60,000,000
Tobacco	10	5,300,000
Truck Crops	20	53,000,000
Sugars	10	5,000,000
Fruits	20	27,000,000
Farm forests	10	11,000,000
Miscellaneous crops	10	5,800,000
Total		$420,100,000

These figures are no joke. They have been prepared by competent experts of the Department of Agriculture, and they are hard facts. Today the question is: Shall we profit by them?

The codling moth and curculio cost us about $8,250,000 a year for spraying operations, and $12,000,000 a year in shrinkage of value in the apple crop. The chinch bug sometimes costs us $20,000,000 a year. The cotton boll weevil costs the cotton-planters fully as much. The tree-insect pests cost the nation $100,000,000 a year The grasshoppers, cut-worms, army-worms, wire-worms, leaf-hoppers and other insects cost the nation, annually, more millions than can be counted separately; and the total for all insect pests is $420,100,000. Now have we not paid this price long enough?

The value of the birds destroyed as "game" and for "food" is not equal to one one-thousandth of the value they would save to the national wealth, if permitted to live. Regarding the slaughter of our birds, the increase of insect pests and the losses they inflict upon us, the great mass of the American people are sound asleep. They do not realize that scores of species of the birds that sportsmen and pot-hunters are regularly allowed to shoot for sport are of immense value to agriculture. How many men are there out of every thousand who know that at least thirty species of shore-birds feed upon noxious insects, and are immensely valuable to our agricultural industries? The gunners who shoot legally are destroying 154 species of birds that legally are classed as game birds, even in the North. How many Americans out of every thousand know the immense value of our song birds, swallows, woodpeckers, blackbirds, quail, doves and nighthawks in destroying countless millions of noxious insects?

In view of the decrease of bird life already accomplished, the McLean bill, now before Congress, to provide federal protection for all migratory birds, becomes the most important wild life measure that ever came before the Congress of the United States in any form. In view of the annual losses to the wealth of the country that will continue so long as the McLean bill fails to pass, it is impossible for anyone to put forth one good reason—unless it be on purely technical grounds—against that measure. Unless the people of America wish to shut their eyes to their own interests and pay out millions of dollars annually in the form of increased cost of living, they should put up to Congress such a demand for the passage of the McLean bill that it will be enacted into a law at the next session. It is Senate Bill No. 6,497, and on the Senate Calendar it is No. 606.

It is the duty of every farmer to call upon in person or to write to their senators or representatives before November 15th, and ask them to work for and vote for that bill until it becomes a law. The next session of Congress is a short one, ending March 4th. The people of the nation should call upon their senators and representatives to take up the McLean bill as an emergency measure, and pass it before March 4th. If enough constituents do this, it will be done.

How Deep Do You Plow?

Not many fields in the Middle West are plowed deep enough. Most of them ought to be plowed several inches deeper for most crops. You can't get the best returns from crops when the ground is plowed too shallow.

How deep should the ground be plowed? That depends on the soil, and the crop. For corn it will pay to plow from six to eight inches deep on most soils. Now that does not mean you should put the plow away down in the earth and throw up several inches of raw earth in one year It does, however, mean this: That the best depth to plow, and the proper way to deepen the plowing is to do so gradually, about an inch a year, so the raw subsoil will be mixed with the soil. If two or three inches of subsoil are thrown up in one year, it will hurt the physical condition of the land.

For wheat, five inches is a good depth to plow at the first of the season on good, sandy loam soil. The depth of plowing must be reduced as the season advances. About four inches on similar soil would be the proper depth for alfalfa. But no matter what crop is grown, remember this: If the best soil conditions are to be made, plow the land at different depths every year, so there will not be a hard "pan" developed at the depth the furrow slice has been cut. These "pans" always will develop where the land is plowed at the same depth every year. They make a bad floor for the roots to grow through. They are worst on heavy soils.

So these are the important things about the depth of plowing: Plow deeply, but increase the depth of plowing slowly, and don't plow at the same depth two years in succession.

Test the Grass Seed.

There is quite a bit of poor legume and grass seed on the market this year. Especially is this true of clover seed. If you are expecting to sow some grass or legume seed this year, you should use more than ordinary care in buying it, so you will get seed that will grow, and is free from bad weed seeds.

Clover especially is apt to contain considerable weed seed. Many of the farms of the country have become badly infested with buckhorn and similar weeds, just because the owners would not go to the trouble to see that they were buying pure seed. Many stands have failed because the seeds were old and dead before they were sown.

Be certain of your seed this year. It doesn't cost anything. The botanical departments of the state agricultural colleges will test seeds free of charge, and there is no reason why prospective growers should not have the seed tested. These experiment stations will test the seeds both for purity and germination. All you have to do is to get a sample of the seed you are expecting to buy, send it to them, and they will do the rest.

With seed corn, be careful about buying it from a section where the conditions are not similar to yours. There is considerable misinformation about seed corn being peddled around among corn growers. Now to begin with, the seed corn proposition is not a complicated, deeply scientific thing at all. All you have to do is to be certain the corn you desire to plant is adapted to the conditions in your section, and then be certain you buy from a reliable company. Always buy seed corn on the ear. While it should be perfectly obvious to all farmers that the way to buy seed corn is on the ear, there still are many thousands who buy it shelled. Of course, you can't judge the quality so well when it is shelled, and the chances of the seller "putting over" something are increased considerably. In buying seed, don't trust anyone for anything.

Big Increase in Crop Values.

The value of the crops of the United States in 1909 was $5,487,000,000, and $2,999,000,000 in 1899. The increase thus was $2,488,000,000, or eighty-three per cent.

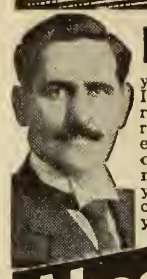
The total value of crops in 1909 was equal to $59.66 per capita of the population, while the value per capita in 1899 was $29.46. There were 6,361,502 farms in the United States in 1910, so the value of the crops of 1909 was equal to an average of $863 per farm, while the average value of crops per farm for 1899 was $523.

A large part of the extraordinary increase in the total value of farm crops between 1899 and 1909 is attributable to higher prices. This might be inferred from the fact that, while the acreage of crops with acreage reports increased only 9.9 per cent, the value of such crops increased eighty-two per cent. It also appears by comparing the percentages of increase in the quantity of the various individual crops with the percentages of increase in the value. Thus, for all cereals taken together, the production increased only 1.7 per cent, while the value increased 79.8 per cent; for hay and forage the production increased 23 per cent and the value 70.2 per cent; and for cotton (not counting cotton seed) the production increased 11.7 per cent and the value 117.3 per cent.

If an arbor is desired on the lawn or over the porch, select a small fruiting grape vine this fall, mark it so that it will be readily found to transplant in the spring, or cuttings of the vine may be taken and set out next season.

Subscription expired? Renew today.

A STREAK OF GOLD



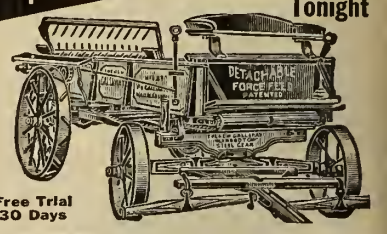
FREE "The greatest dollar buying piece of literature ever penned by man." So write my farmer friends who have read my latest book. Have you read it? If you haven't you are missing a *golden treat.* Yes, I mean it, for "A Streak of Gold" will show you how you can coin real *gold dollars* from your manure pile. It's written from the net results of America's greatest soil experts—and the experience of thousands of farmers. Mail me a postal or letter today for *your* copy—*free* and get my offer for you to prove how you can have bigger crops next year.

Absolutely Save $25 to $50 on a Galloway Spreader

Write Me Tonight

—No spreader in the world can match quality with a Galloway equipped with Mandt's New Gear.

I'll send it anywhere to stand on its *pure merit* alone—give you 30 to 90 days *free trial*—a big guarantee and back my entire proposition with a $25000 bank bond. That's proof of quality—and my factory to you price saves you dealers and jobbers profits. Put your letter or postal in the Mail *NOW.* Ask for free book and Special 1913 proposition and price.



WM. GALLOWAY, President
Wm. Galloway Co 1039GH Galloway Sta. Waterloo, Ia.

Free Trial 30 Days

Pruners and Shears

BASTIANS'

Awarded First Prize, 1912

CALIFORNIA STATE FAIR
CALIFORNIA APPLE SHOW OREGON STATE FAIR

In a working test with other tools, they have proven their superiority

BASTIAN TREE SHEAR—The new and perfect tool for light work. With them it is practical to trim all small trees while the operator stands on the ground, thus enabling him to round up the trees to better advantage.

BASTIAN PRUNING HOOKS—Cut to their full capacity, regardless of the toughness of the wood, thus doing away with time wasted in sawing.

Shear and Pruner Blades made from Sheffield Tool Steel. Every blade guaranteed against defects. Power, Ease, Speed and Durability the main features of Bastian Tools.

Ask your dealer for them. Manufactured by

STOREY MANUFACTURING CO., PORTLAND, ORE.

VIRGINIA APPLE ORCHARDS

In the beautiful Blue Ridge Mountains and Shenandoah Valley section of Va. **produce the finest flavored Apples in the world** They grow to perfection, and bring the highest prices in American and European markets. A few acres costing only $15 an acre and up, planted in orchard will make you independent for life. Write for latest issue "The Southern Homeseeker," low excursion rates, apple booklet and other interesting literature.

F. H. LaBaume, Agl. Agt., Norfolk & Western Ry. Bldg., Room 40, Roanoke, Va.

N&W Ry

Storage of Onions

Onions now sell on the market for about 65 cents per hundred pounds. By March first, they will probably rise to from $1.50 to $2.00 per hundred pounds. The storage charge in large markets runs about 5 cents per hundred pounds for the first month and 2 cents per hundred pounds for each month thereafter. This includes the charge for unloading and reloading. Figure for yourself the advisability of storing the crop for a rise in price.

Only fully ripened and cured onions should be stored. Others are subject to too great danger of loss from rot and shrinkage. If onions are of proper quality, however, shrinkage in storage will be slight.

Onions for market should be pulled as soon as the tops fall to the ground. Otherwise wet weather may cause a second growth or rot to destroy their keeping and selling qualities. When pulled, two or three rows are usually thrown together in a windrow to lie several days drying and curing in the sun before topping.

The small scale grower usually tops by hand. The tops are cut off with a knife about half an inch from the body of the onion. After they are topped they are forked into sacks and taken into the sorting room.

The large scale growers often use a machine topper operated with a gasoline engine. The onions are shoveled onto revolving rollers which snap off the dry tops. They operate very much as do the rollers of a corn shredder. The tops must be quite dry if they are to be removed in this way. If the weather does not permit thorough curing, even the large scale grower must top with hand labor.

In the sorting room the sacks of bulbs are emptied into a hopper from which they pass downward through a sloping cylinder which is revolved at a moderate rate of speed. The cylinder is made of narrow slats with spaces about one and one-half inches wide, through which the small onions drop. A boy or two should stand at either end of the grader to remove scullions and injured bulbs.

This grader may easily be made at home. It should stand high enough from the floor to allow the onions to pass from the lower end of the cylinder into 100-pound sacks. As rapidly as the sacks are filled, the tops are sewed up with twine, leaving a dog ear at either corner to serve as a handle.

The sorting room should be well ventilated and large enough for use as a temporary store room. In storage, sacks should not be placed in close piles. The onions will heat and lose part of their selling value if there is insufficient circulation of air.

K. A. KIRKPATRICK.

Minnesota.

Select Seed Potatoes Now.

It is a common impression among potato growers that where any variety is grown year after year on the same farm, the potatoes gradually diminish in size, and in production per acre, or as it is often described, they "run out." As a matter of common observation, this is true and an attempt is made to remedy the difficulty by securing seed potatoes from a distant source, often from seed merchants at fancy prices. A few, however, are beginning to realize that the cause is not so much in the variety of potatoes as it is in the variety of farmer.

The quality of any crop depends largely upon the quality of seed sown. If we plant potatoes with deep eyes, we may expect a crop of deep eyed potatoes. If we plant potatoes with "knuckles" or secondary growths upon them, or potatoes that are ill-shapen, we may expect to harvest a crop of the same description. A miscellaneous collection of large and small tubers with varying shapes will likewise produce after their own kinds. It therefore depends primarily upon the farmer whether the potatoes deteriorate or improve. In harvesting the crop it can readily be noticed that some hills contain a larger percent of marketable tubers than others; it is from these hills that seed for next spring should be taken. Where small areas are planted, seed for the entire crop may be set aside in this way. Where larger areas are planted, sufficient seed for an acre or more may be selected and this in turn would produce enough for a larger field the following year. By following this practice year after year, astonishing results can be effected in improvement of quality increase of marketable potatoes per hill, and increase of yield per acre. When the crop is in the cellar, proper seed selection is impossible. Take an extra day now and be sure of good seed for next year's crop.

R. B. COGLON.

Idaho.

Bad Care Makes Plug Horses.

Most colts have a hard time the first winter of their lives. In many cases they are not given the proper rations and are confined too closely. In such cases growth all but ceases, and the colts may be permanently injured. Watch them carefully the first winter, for it is the most important period of their lives. They have just been weaned and it isn't easy for them to adapt their small systems to dry feed.

Oats make the best concentrated feed for young horses. If you have to use a substitute, see that it is high in protein, for the animals need plenty of material for growth. Up to one year of age, two to three pounds of oats, or just a little less than they will eat up clean, is a fair ration. Feed the amount of hay they will eat up clean. It is not a good idea to let the colts "stuff themselves" with roughage, for they will not make the best growth with such treatment.

See that the colts get plenty of sunshine. If they are kept in a lot where they do not get enough sunshine, they will become stunted. The general things you should do to care for young colts properly are these: Provide sufficient grain and not too much hay, see they are both of good quality, and be sure the colts get plenty of exercise and sunshine. Then, of course, always handle the colts carefully, and teach them you are their friend. This careful handling of young horses is important, for most of the poorly broken work horses of today were not handled properly when they were colts. Treat the young things kindly, for it will pay—big.

Many colts are allowed to grow wild in the truest sense of the term. They are turned loose in a pasture or lot with perhaps some shelter, and there they are "roughed through" the winter on a ration of cornstalks, hay, scenery and a little grain, which usually is corn. That is one of the reasons why we have so many plugs on the farms today. If you are in the horse business, care for the colts properly, because of the money that is in it, if for no other reason.

Girls Cook Apples.

Food values of apples will be demonstrated at the Fifth National Apple Show, Spokane, Wash., November 11 to 17, by girls of the domestic science department of the Lewis & Clark high school of Spokane. Apples will be cooked and served in every manner known to culinary science. Classes will be held at the show each afternoon under supervision of Miss Clara G. Bond, head of the domestic science department.

Root crops, such as parsnips, beets, and carrots, may be prevented from shriveling in the winter if they are covered slightly with dry sand in the bin or box.

NURSERY AND SEED CATALOGS

WE are very pleased to announce to our Nurserymen and Seedmen customers and friends that we have recently enlarged our printing plant and now have one of the largest and most modern equipments in the country for the production of High-Class Nursery and Seed Catalogs.

Our Quality and Service is Unsurpassed.

Our Prices are Consistent With Quality.

Our File of Stock Cuts is High-Class and Complete.

WE SHOULD BE YOUR PRINTERS MAY WE PROVE THIS?

If you are contemplating issuing a catalog or other printed matter let us hear from you and we will be pleased to make suggestions, give estimates, etc.

American Printing Company

ST. JOSEPH, MISSOURI

PUBLISHERS OF THE FRUIT-GROWER AND FARMER

$1 Worth for 25c

We have a few hundreds of the Brother Jonathan series of fruit booklets, of which we sold thousands a few years ago, and want to close them out quickly. These books originally sold at 25c each, and Fruit-Grower readers took thousands of them at that price.

We now Offer Four of These Books, postpaid, for 25 Cents

Select the numbers you want, and send your order today, for there are only a few of several numbers. Orders will be filled as they are received, and if any number you select cannot be furnished, we reserve the right to send another number instead. Here is the list of those we can furnish now:

No. 2—A Treatise on Spraying. Tells all about how to fight insects and diseases which attack apples and strawberries.

No. 3—Strawberries and How to Grow Them. A dandy little book telling how to grow this most valuable fruit.

No. 4—Gardening. A practical little booklet which discusses all phases of gardening, including making and management of hotbeds.

No. 5—Packing and Marketing of Fruits. This book takes up the problem of packing and marketing in a common-sense manner.

No. 6—Bush Fruits. A booklet which discusses the culture of raspberries, blackberries, gooseberries, etc.

No. 7—Grapes. This booklet discusses planting and care of vineyards, and illustrates the famous Munson system of training the vines. Only 75 copies of this number are available.

No. 8—Pruning Booklet. Discusses the whys and wherefores of pruning fruit trees and shrubbery. Only 50 copies available.

No. 12—The Corn Book. A little book containing valuable information on corn culture, including chapters on seed selection.

Order These Books at the Rate of Four for 25 Cents

Send us list of the numbers you want, and act quickly, so that you will be sure of getting the numbers you want. Here's a real bargain, for thousands of these booklets were sold at 25c each, and every purchaser received his money's worth. Send order today to

The Fruit-Grower and Farmer, Book Dept., St. Joseph, Mo.

Reclaiming a Run-Down Eastern Farm

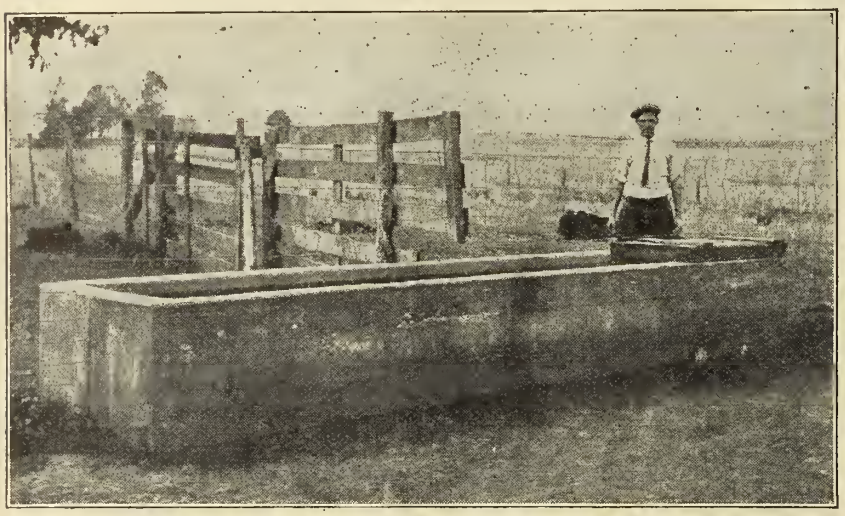
(Continued from Page 5)

grow alfalfa in the East is mostly rot. There is no reason why alfalfa should not become one of the principal crops here in the East, just as it has in the West. And the farmers here will make a good deal more money when they do take up the growing of this crop extensively. Most of the failures in growing alfalfa in the East have been due to an acid soil. Alfalfa will not grow unless the land has an alkaline reaction."

Wheat is the only grain sold from this farm. All other crops are marketed as meat, milk, or as breeding or draft animals. T. J. Andrews said: "On these old soils it is essential that we sell products that remove the least plant food possible from the soil. Phosphorus is the principal element we lose now under our sales system, and we buy back this element in the form of acid phosphate."

How Hogs are Handled.

Hog-raising is one of the principal lines. From 150 to 200 hogs are sold every year. They are well-bred and pure-bred Berkshires. These hogs weigh from 125 to 175 pounds, the average being about 150. All these hogs are butchered on the farm and the meat is sold to the retail meat dealers in Roanoke. Mr. Andrews has found that much more profit can be made in this way than from hogs sold as live animals. A slaughter house has been built, and the men do the work indoors. This allows the men to work at butchering on cold, stormy days when they couldn't work outdoors.



T. J. ANDREWS AND ONE OF HIS CONCRETE WATER TROUGHS.

This slaughtering of the hogs on the farm is one of the interesting problems Mr. Andrews has worked out. There has been a great deal of attention given in the Middle West to curing meat on the farm, and if the advocates of this system wish to find a model, profitable plant, they can find it on the Andrews farm.

Pasture is used to put on all gains possible. The hog section of the farm is divided into ten lots of from two to four acres each, and these are planted to crops which give a succession of green pasture throughout the year. As Mr. Andrews said, "We aim to keep something green all the time."

Three of these lots are in alfalfa. The alfalfa is not pastured hard enough to keep it down, and considerable hay is cut. When the hay is cut, a fresh growth springs up at once that is much better feed than the old, woody plants. Two lots are in rye for winter and spring pasture. One lot is in crimson clover, and one is in a combination of cowpeas and sugar cane. Three are kept permanently in orchard grass.

There are water troughs and sunshades in every lot. The hogs in the summertime are fed about a half ration of grain—mostly corn—and slop. The slop consists of bran, shorts, tankage and corn meal. In the winter the hogs are fattened mostly on corn and slop. Alfalfa usually is cut fine and mixed with the slop. It is warmed during cold weather before it is fed to the hogs.

The sows are bred twice a year. The average number of pigs to the litter is eight. Every sow has an individual house at farrowing time. These houses have a railing on the inside to prevent the sow from mashing the pigs. Usually, ten sows are kept. Many of the better sows are sold for breeding purposes, and Mr. Andrews intends to give more attention to the production and sale of hogs for breeding purposes, in the future.

The Dairy.

Two large dairy barns and two silos have been built this summer. Fifty head of Holsteins will be kept, and the first purchase will be twenty-five pure-bred animals and a high class bull. The remainder of the herd will consist of well-bred animals. If Mr. Andrews finds there is a profitable market for pure-bred animals, the animals that are not pure will be gradually disposed of.

The dairy buildings are remarkably complete and well constructed. The feeding barn is 62x122 feet, and has a capacity of 400 tons of hay. Hay will be fed in bunks on the ground floor. All feed is stored in the loft. Most of the feeding will be done here. In the milking barn the animals will be fed grain only.

The milking barn is 36½x112½ feet. The floor is cement. The cows will stand in two rows with their heads to the windows. Near this barn is a milk house, where the milk will be cooled and placed in containers.

Two cement metal-lath silos have been built. These silos are thirty feet high and fifteen feet in diameter. They are in the ground six feet. They cost $350 each.

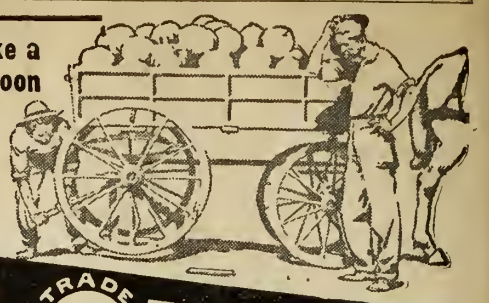
It is not often that a beginner in the dairy business starts into it so well. "Where did you get all these plans?" was asked of T. J. Andrews. His reply showed the care which is given to the planning of operations on this farm.

"Well, we decided to go into the dairy business more than a year ago. We have a profitable market here, and the manure will aid materially in building up our land. We should make good money from this line. I had paid considerable attention to dairy farming while I was in college. My father and I got all the dairy bulletins, books and papers we could, and studied on the propositions for several months. Then we took a trip out through the West to see what other people were doing. We wanted to get the best features of other plants and be profited by the successes or failures of the men who owned them.

"Then we returned and planned our plant. We have been careful not to invest a penny where it will not produce returns, and at the same time

A cheap rubber boot is like a cheap wagon — Defects soon come out in service.

The long wear and the fine fit "Ball-Band" rubbers give, prove that they have the *quality* built into them.

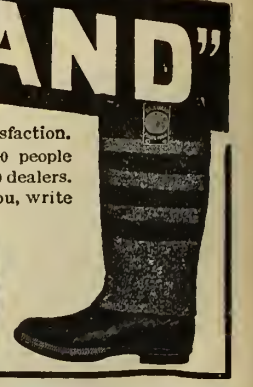


"BALL BAND" TRADE Red MARK

Why take chances?
The Red Ball on the knee of a boot means certain satisfaction. "Ball-Band" Rubber Footwear is worn by 8,000,000 people who get full value for their money, and sold by 45,000 dealers. If you can't locate the "Ball-Band" dealer near you, write us, and we'll tell you who he is.

Mishawaka Woolen Mfg. Co.
MISHAWAKA, IND.

"The House That Pays Millions for Quality"



A Square Deal For Your Hands

You aren't fair to your hands when you deny them the protection against weather and injury which goes with the durable and soft—pliable, strong and *easily cleaned*

Hansen Gloves

They mean a "square deal" for your pocketbook, too. "Cheap" gloves are poor economy; hinder motion; fail to protect and *cost more in the end.*

Many dealers are showing this splendid-wearing Protector or the "Glad Hand"—with or without gauntlet. Or send direct to us for any glove *on approval.*

Get *Free Book* that describes *all* the Hansen line; the gloves every man wants at work or sport. Pick *your* style and try a pair on at our risk. Mail coupon or postal *today.*

O. C. HANSEN MFG. CO., 118 Detroit St., Milwaukee, Wis.

O. C. HANSEN MFG. CO.
118 Detroit St., Milwaukee, Wis.
You may send me Free and postpaid your book showing Hansen's Gloves. I am most interested in the styles for following purpose.

Mention above what kind of work, driving or sport.

Name.....
Town.....
R.F.D.....State.....

Wholesale and Retail **Profit Saved! FREIGHT PAID**

RUBBER ROOFING 1-Ply, 35 lb. 108 sq. ft., $1.10 per roll.
2-Ply, 45 lb. 108 sq. ft., $1.30 per roll.
3-Ply, 55 lb. 108 sq. ft., $1.50 per roll.

Warranted For 25 Years. Terms Cash. These Special Prices Only Hold Good for Immediate Shipment.

FREIGHT PAID to any station east of Rocky Mountains except Tex., Okla., Colo., N.D., S.D., Wyo., Mont., N.M., La., Ga., Ala., Miss. and Fla. on orders of three rolls or more. Special prices to these States on request.

INDESTRUCTIBLE BY HEAT, COLD, SUN OR RAIN.

FIRST-CLASS IN EVERY RESPECT. NO SECONDS, REMNANTS OR MILL ENDS.

Write for **FREE SAMPLES** or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to the Southern Illinois National Bank.

Century Manufacturing Co., Dept. 778 East St. Louis, Illinois, or Dept. 778 200 5th Avenue, New York City.

SANTA'S GIFT TO YOU

Nearly everyone nowadays wraps attractively their Xmas gifts before sending, using fancy seals, name cards, and address labels for decorations. It is a pretty custom and adds greatly to the Xmas sentiment, but if purchased in a store these decorations are expensive. Here is an exceptional opportunity, however, to secure

An 88-Piece Assortment Without Cost, consisting of 8 Small Cards, 8 Small Tags, 3 Large Cards, 3 Large Tags, 25 Small Seals, 25 Large Seals, 3 Xmas Address Labels, 5 "Do Not Open Until Xmas" Stickers and 8 Xmas Stamps; all embossed in gold and beautiful colors, and inclosed in a Fancy Package.

With Farm & Home, 3 Months, 10c

FARM AND HOME is the recognized leader in the farming world; its contributers are recognized anthorities, and its editors practical men who "know." Each issue is read by more than 2,500,000 readers and a year's numbers (24 issues) make a volume of over 600 pages; regular price is 50 CENTS A YEAR.

Just to Introduce Farm and Home to new readers, we will send it on trial for three months (6 issues) for ONLY 10 CENTS (Coin or Stamps). Further, if you will send us (at the same time) the name of one other person to whom we can send a free sample of Farm and Home, *we will send you this complete 88-piece Xmas assortment,* **free and postpaid**

Address FARM & HOME (Dept. 48) *Chicago Ill.*

we have been careful to spend enough so our plant is complete."

The Modern Home.

Percheron horses are kept. They have two pure-bred stallions and three pure-bred mares. They have twelve more well bred, grade Percheron mares. All mares are bred every year. The colts usually are kept until about three years of age, and are sold after being broken.

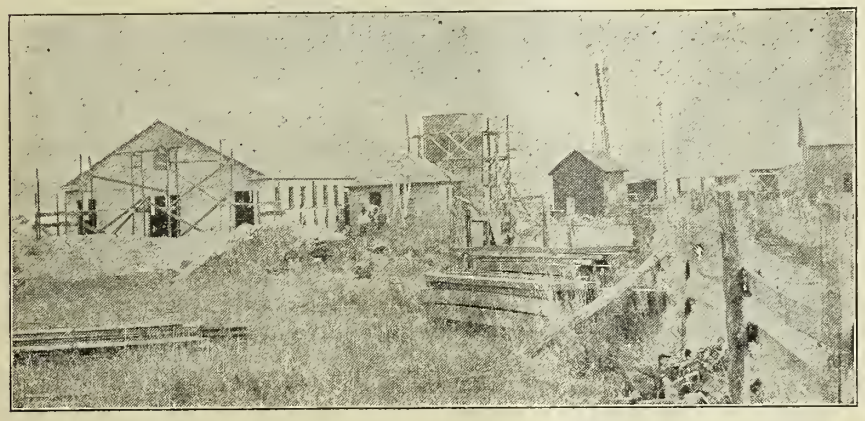
The house contains every modern improvement, including electric light, which is obtained from the Roanoke plant. The lawn is well-kept. T. J. Andrews owns a motor car and he has found that it is a profitable farm investment.

In speaking of country life, young Mr. Andrews said: "I wouldn't change places with any of my college friends who have city positions. I consider that country life, if planned intelligently, is by far the best life."

The Andrews family has done much for the farm in the last nine years. As Mr. Andrews said, pointing to a field: "When we bought that field, nine years ago, it produced eight bushels of wheat to the acre. This year it produced thirty-four bushels."

Many of the fields in that section are still in the eight and ten-bushel class. None of the methods used to build up the soil are impractical, when considered on a financial basis. Crop rotation, manure, legumes, phosphorus and lime have been used properly, and with good returns.

This farm contains much of encouragement for the success of the old Virginia farms. The Andrews family has demonstrated that a "run-down" farm could be taken as a commercial proposition and built up so it would produce profitable returns.



PART OF THE NEW BUILDINGS ON THE ANDREWS FARM.

Why Cultibate the Orchard?

Traveling through the country in mid-summer I noticed that some orchards planted this spring, as well as some of the older orchards, were not yet cultivated. People say to themselves and to others, "The spring has been unusually favorable, we have had more than the average amount of snowfall the past winter, and have had frequent spring rains." Under such conditions many a man feels that he can busily engage in other lines of work and that his orchard is not yet suffering from lack of cultivation.

The planter who reasons in this way evidently forgets frequent showers or periods of drizzling rainfall really require an increased amount of cultivation. Scientific men with ample time for study, demonstrated that where the rainfall is not more than one-fifth of an inch no addition is made to the amount of soil water stored; succeeding evaporation quickly removes the light rainfall.

The late Prof. King of Wisconsin demonstrated that an application of one pailful of water applied on the surface around a petted tree or plant each evening, for thirty consecutive days, leaves the sub-soil under that tree or plant dryer than a contiguous yard of sub-soil that has not received any water from any source.

How did Prof. King explain this?

Artificial application of water to the surface, or a shower, or a rain, promptly develops a rapid evaporation from the surface. This sets in motion the law of the transposition of soil moisture. Evaporation from the surface calls for and draws upon the moisture stored in the sub-soil. The capillary circulation causes the moisture stored in the sub-soil to rise to the surface, to take the place of that lost by evaporation.

A light rainfall may not, usually does not, wet down more than an inch or two and this is speedily lost by subsequent rapid evaporation. Only the heavy periods of rainfall deposits water enough in the soil to reach down to and re-inforce the supply of water already stored in the sub-soil. Hence the skillful orchardist or gardener must start his cultivator after every rainfall that crusts the surface. Last spring was rainy and compelled me to cultivate some of our orchards nine times and all of our three hundred and eighty-five acres of home orchards seven times within a period of forty-eight days, cultivation having commenced March 20th.

We have orchard lands that would be classed as high and dry lands which have not been watered in a period of twenty months but the tillage has been such as to maintain three feet of soil moisture. This moisture could not be re-inforced from below because between the surface moisture conserved by cultivation and the lower under-lying water table there is a strata of hardpan about twelve inches in depth. The soil augur shows three feet of conserved snow and spring rain, one foot of hard-pan; under the hard-pan three feet of soil gradually gaining in moisture down to soil water.

The question of what can be done by frequent tillage is to some extent governed by the texture of the soil. where the soil is pliable, easily worked, carrying such percentage of silt or sand as will enable the cultivator to keep it in a mellow condition, it seems possible to conserve the moisture from month to month and from year to year. We note, however, where spots of gumbo intervene that it is difficult to maintain such conditions of tillage as will surely store moisture from month to month or from year to year.

Idaho. E. F. STEPHENS.

Wisconsin Ships Much Cheese.

New York, until recently the leading cheese-making state in the Union, bought more than a million pounds of cheese from Wisconsin in 1911, according to statistics covering more than three-fourths of the cheese shipments from the state, gathered by the agricultural economics department of the College of Agriculture of the University of Wisconsin.

Millions of pounds were sent to Texas, Louisiana, Florida, Virginia, Massachusetts, Ohio, Nebraska, Washington, and other states. Illinois took over 15,000,000 pounds; Missouri 8,000,000, Texas 7,500,000, Georgia 5,500,000, while Iowa, Tennessee, Indiana, Kansas, Louisiana, Nebraska and Ohio each bought more than 3,000,000 pounds of Wisconsin cheese.

These figures must not be construed to represent total consumption of this product in each state. Many of the largest shipments were made to wholesale houses located at distributing points, and the final destination of this cheese is not included. Chicago took 10,750,000 pounds, Kansas City, Missouri and Kansas received 6,250,000 pounds; Memphis, Tennessee, 2,000,000 pounds; St. Louis and East St. Louis, 2,800,000 pounds; Omaha and South Omaha, 2,940,000 pounds; Los Angeles, California, 1,660,000 pounds; Macon, Georgia, 1,300,000 pounds.

HURST SPRAYERS ON FREE TRIAL

NO MONEY IN ADVANCE—NO BANK DEPOSIT—PAY AFTER IT HAS PAID FOR ITSELF.

LET US SEND YOU ANY OF THESE SPRAYERS—to try for 10 days, then if you buy, you can pay us cash or we'll wait till next fall for our money.—The extra profit will more than pay for it. We pay freight. LOWEST PRICES. HIGHEST QUALITY. 5 YEAR GUARANTEE.

Quality Sprayers for every purpose. Man Power and Horse Power for field and orchards. Barrel and Power Sprayers all give high pressure and produce vapor spray that kills scale, prevents blight and scab, and rids your crops of all fungus and insect pests. Hurst Sprayers have brass ball valves and all the working parts that come in contact with the solution are made of brass. Cyclone agitation insures an even distribution of the spraying materials and best results. These sprayers are made by practical men who know the needs of the fruit grower and farmer and know what a sprayer should do. Our 26 years' experience in the manufacture of sprayers, together with the capacity of our large factory, enable us to build the very best sprayers at the very lowest prices. We guarantee our sprayers for five full years and ship on free trial—no money in advance. That's evidence of quality. Write to day—see special free offer below.
Big, complete spraying guide, showing cuts of all pests, FREE TO OUR CUSTOMERS.

FREE You can get a Hurst Sprayer absolutely free if you are the first in your locality this season to send for one of our sprayers for trial. You need do no canvassing or soliciting. It will only take 15 minutes of your time. We do the work. When you get a sprayer from us you get the benefit of our 26 years' experience in manufacturing sprayers. Hurst Sprayers won the gold medal at the National Horticultural Congress spraying machine contest. Send us a postal or mark the attached coupon and mail it to us and we will send you our fine catalog, spraying guide, and will tell you how you can get a sprayer free. Don't delay, write us at once for our free sprayer proposition and save money.

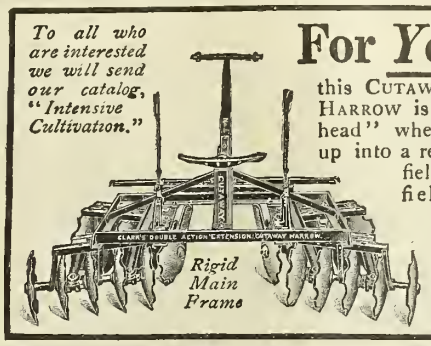
H. L. HURST MFG. CO., 184 North St., Canton, Ohio.

H. L. HURST MFG. CO., 18 North St., Canton, O.
Send me your Catalog, Spraying Guide and "special offer" on the sprayer marked with an X below.
.....Man-Power Potato and Orchard Sprayer.
.....Horse-Power Potato and Orchard Sprayer.
.....Fitz-All Barrel Sprayer.
.....Power Orchard Sprayer.
NAME.....
ADDRESS.....

COUPON—Fill Out and Send today

For *Your* Orchard Work

To all who are interested we will send our catalog, "Intensive Cultivation."



Rigid Main Frame

this CUTAWAY DOUBLE ACTION EXTENSION HEAD HARROW is unequaled. And yet it is not a "dead head" when not at work in the orchard, for it closes up into a regular double action field harrow for general field work. The Cutaway CLARK'S is the original double action. Its superiority is acknowledged by imitation. It is equipped with *detachable* jointed tongue, CLARK *forged-edge* disks and CLARK *hardwood* journals.

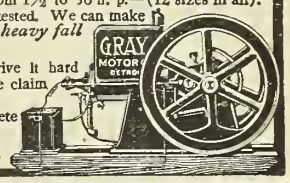
CUTAWAY HARROW CO. 968 Main St., Higganum, Conn.
Makers of the original double action harrows

Get this Valuable Engine Book Free

Here's a book that contains a lot of general engine information that that will be of great help to you in selecting the *right* engine. Also tells you and shows you the complete line of high grade Gray engines in all sizes from 1½ to 36 h. p.—(12 sizes in all). Shows you how carefully they are made—inspected and tested. We can make *immediate shipments on big powerful engines for heavy fall and winter work.*

30 DAYS' TRIAL Try any Gray engine at your own work for 30 days—give it hard tests for power and economy—if engine is not everything we claim in every way, ship it back—we pay return freight.

Write today asking for Big Engine Book "S." If interested in a complete Electric Light outfit ask for Electric Light Catalog.



GRAY MOTOR CO., 1147 G. M. C. Bldg., Detroit, Mich.

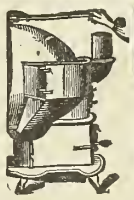
Seldom See a big knee like this, but your horse may have a bunch or bruise on his Ankle, Hock, Stifle, Knee or Throat.

ABSORBINE

Before After

will clean them off without laying the horse up. No blister, no hair gone. $2.00 per bottle delivered. Describe your case for special instructions and Book 8 E free.

ABSORBINE, JR., liniment for mankind. Removes Painful Swellings, Enlarged Glands, Goitre, Wens, Bruises, Varicose Veins, Varicosities, Old Sores. Allays Pain. Price $1 and $2 a bottle at druggists or delivered. Manufactured only by
W. F. YOUNG, P. D. F., 34 Temple St., Springfield, Mass.



COOK YOUR FEED and SAVE Half the Cost—with the PROFIT FARM BOILER

With Dumping Caldron. Empties its kettle in one minute. The simplest and best arrangement for cooking food for stock. Also make Dairy and Laundry Stoves, Water and Steam Jacket Kettles, Hog Scalders, Caldrons, etc. Send for particulars and ask for circular S

D. R. Sperry & Co., Batavia, Ill.

Making the Grapes Pay

Growing and Marketing Methods Which Have Been Successful on a Michigan Fruit Farm.

The gross income, an acre, from more than twenty-five acres of the vineyard of William K. Munson and his son, Roy, near Grand Rapids, Mich., in 1911 was $183. The grapes were packed in baskets and sold mostly on the Grand Rapids city market. The average acre yield was more than five tons.

This farm contains fifty-five acres. Thirty acres are in grapes, five acres being in two-year-old vines. There are 12,236 bearing vines from four to twenty-four years old. The farm is three miles from the heart of Grand Rapids, and one-half mile from the city limits.

The grapes are packed mostly in four-pound baskets. A small part of the crop is packed in other sizes. The Munsons believe it pays to pack in small baskets. In speaking of this, Roy Munson said:

"We make the most profit from the four-pound baskets. We received an average of 9.2 cents, for the Worden's packed in four-pound baskets last year, and but 10.8 cents for the eight-pound baskets. The four-pound Concord baskets brought 9.3 cents on an average, and the eight-pound 12.4 cents. So used. Any part of the load can be reached promptly with the removal of but little fruit. This is a great advantage where several varieties are being delivered at the same time, as is usually the case.

The packing is done mostly in the field. Every picker carries a light frame that holds four baskets about three feet from the ground. The bunches are placed in the baskets as they are picked. If a bunch will not fit in one basket, it probably will in another. After the baskets are filled, they are set under the rows. They are hauled to the loading yard in light wagons, and then are transferred to the market wagons.

The vineyard contains many varieties, the principal ones being: Worden, of which there are 3,951 vines; Concord, 2,680 vines; King, 1,783 vines; Delaware, 1,378 vines; Niagara, 900 vines; Moore's Early, 785 vines, and Campbell's Early, 327 vines.

As an average for many years, the Worden grapes have been the best money makers. Roy Munson said: "The Worden has been our most profitable variety. It is not subject to disease and insect injury, and it al-

THE MARKET WAGON DESIGNED BY WM. K. MUNSON.

you see the four-pound baskets are the most profitable."

The four-pound baskets cost $13 a thousand, and $1 more to put on the handles. The eight-pound baskets were selling for $25 a thousand during harvest. This size can be bought much cheaper earlier in the season.

All larger baskets and every crate bears the "Vinecroft" label, which is the Munson trademark. The grapes are packed in a careful and attractive manner. Stems are placed inside, and the grapes only show on the top. The fruit goes mostly to the better class of grocery stores in Grand Rapids. On the morning of Sept. 27, when a representative of The Fruit-Grower and Farmer visited Mr. Munson, he had 560 four-pound baskets of grapes on his wagon in the city market, and they all were sold before 6 o'clock. His wagon was one of the first to leave the city market. Many wagons that did not contain more than half that many baskets still were there at 7 o'clock.

Handling the Orders

The Munsons have quite a large trade that does not go through the city market. When these orders are received, they are entered at once on an order sheet. This sheet gives the variety and size of the pack, destination, and the way the grapes are to be shipped, if it is an out of town order. After the orders are entered, the number of baskets sold may be found by addition. This sheet eliminates the chance for error in filling orders.

The grapes are hauled in wagons designed by William Munson. A system of sectional, removable decks is ways produces good crops. One section of the farm contains Worden vines 24 years old that have never missed a crop. The principal disadvantage of this variety is that it ripens unevenly, and therefore it must be picked several times.

The trellises are put up when the vines have finished their second year. The posts are cedar and carry two wires. A brace wire is run from the top of the second post to the bottom of the first one, and the wire is stretched from the second one. This eliminates the necessity of the wooden braces. The wires are stretched from the first to the second posts by hand. The two-year-old vines that had run up on a stake, produced this year about ten pounds of grapes to the vine.

Maintaining the Fertility.

The soil is a clay loam, and the land is somewhat rolling. The vineyards are plowed in the spring, just as soon as the ground can be worked. After plowing, the land is worked away from the vines with a horse-hoe. It then is cultivated after every hard rain with a cultivator or harrow, whichever will do the best work. Some work is done with a hoe. The average number of cultivations for the season is twelve. By August 1st the soil has been worked back toward the vines, so the rows are ridged markedly.

Crimson clover now is sown between the rows at the rate of nine pounds to the acre. Of course, only about three-fourths of the ground receives seed. This clover makes a rapid growth and adds quite a bit of nitrogen to the soil before growth is stopped by cold weather. This cover crop is allowed to remain on the ground all winter, where it is of much value in preventing washing. It is plowed under in the spring and adds considerable humus to the soil.

A large amount of manure is hauled from town. In speaking of the need of maintaining the soil fertility, William Munson said: "You can't get good grapes if the vines are starved. We haul a large quantity of manure from town every year. We do not use commercial fertilizers. The land is manured heavily for the first four years after the vines are set, in order to get a good growth of stem. After that but little manure is applied for four or five years. After about the tenth year we give the land a dressing of manure every two years.

"I believe that plenty of humus and available plant food are essential for profitable grape production. In most of the vineyards where the growth of grapes is not what it should be, the humus has been burnt out of the soil. Here, we make every effort to maintain the supply of humus by the application of manure and the growth of cover crops. We get most of the manure in Grand Rapids. We get the larger part of it free and the only expense is the hauling."

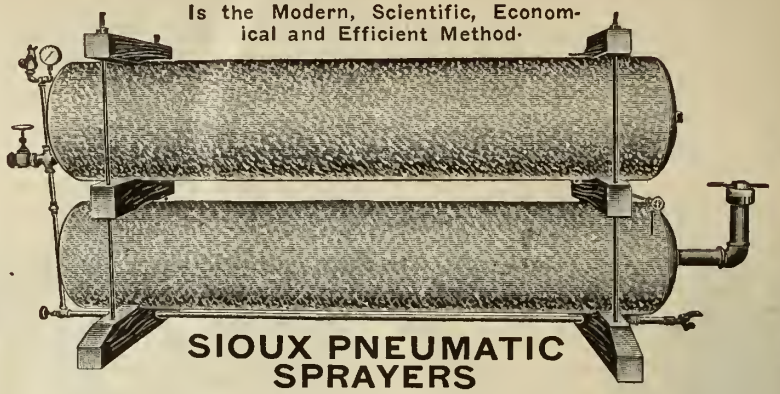
The vines usually are sprayed three times. A Hardie power-sprayer is used. The gasoline engine is of two and one-half horse power, and is also used for sawing wood, cutting feed and other purposes. The vines are sprayed with a blue vitriol spray just before the buds start, and with bordeaux when the shoots are blossoming, and again a short time afterwards. The mixing is done on the second floor of the sprayer house, and the solutions run into the sprayer by gravity. Enough blue vitriol to make a tank-full of the solution is put into a sack, the end of a hose is put in this sack, and a little water is turned on. The water slowly dissolves the blue vitriol and runs into a barrel, and is ready by the time the men have returned with the machine from the field.

One hand is hired in the winter. From four to six men are used in the cultivation in the summer. Usually, from eight to twenty pickers are employed in the picking season. Occasionally larger numbers are used. Most of the work is done by the day, the average price being $1.75, without board, for men. Many boys are hired in the picking season and they are paid in proportion to what they can do.

The King Grape

William Munson originated the King variety of grapes. In speaking of this variety, he said: "I found the original vine of this variety in my Concord vineyard that was set in 1892. It is a bud variation from that variety. I watched the vine for several years, and saw that it was of a super-

PNEUMATIC SPRAYING
Is the Modern, Scientific, Economical and Efficient Method.



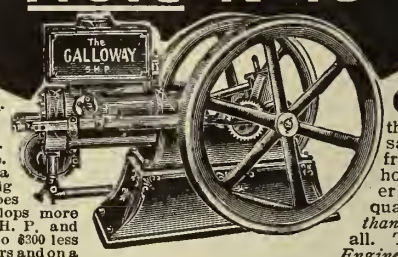
SIOUX PNEUMATIC SPRAYERS
ARE THE MACHINES FOR DOING IT

No engine, pump or other machinery on the wagon—nothing but two galvanized steel tanks, one for air and one for solution. Not a moving part on the sprayer. Nothing to wear, break, balk or bother. Will last a lifetime. Perfect agitation. Can be used on any wagon. Operator's undivided attention given to spraying. No time lost. Does this mean anything to you? If it does, write for Bulletin A2.

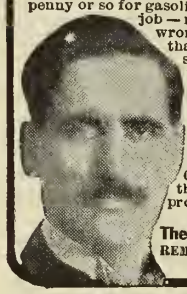
SIOUX CITY AIR COMPRESSOR COMPANY
710 BLUFF STREET. SIOUX CITY, IOWA

"GALLOWAY" MEANS "BARGAIN"
And I Prove it To You

This Time It's On ENGINES
—the most substantially constructed and simplest-to-run engine that ever came out of a factory. You won't find another engine like it anywhere. It starts at a touch—costs only a penny or so for gasoline on a big job—never goes wrong—develops more than rated H. P. and sold $50 to $300 less than others and on a



$50 To $300 CHEAPER!
than you can buy same H. P. engine from mail order house, jobber or dealer anywhere of equal quality—and *better than the best* of them all. That's a *Galloway Engine.*



Guarantee of Permanent Satisfaction or Money Back
Write Your Name on a Postal and I'll mail you my big engine book. Pick out the engine you want. I'll ship it to you on 30 to 90 days' FREE trial. Then, if you don't want the engine, send it back. The trial will not have cost you a penny.
Get the book and see the bargains I'm offering. There isn't a house in the country that I don't beat for price combined with quality. Write now for my special 1913 proposition and price.
WM. GALLOWAY, President
The WILLIAM GALLOWAY COMPANY, 1035CG Galloway Station, Waterloo, Iowa
REMEMBER—We carry stocks of our Engines in Chicago, Kansas City, Council Bluffs and Minneapolis—insuring prompt shipment.

MAGANN
A SWEET CHERRY for the MIDDLE WEST
Originated in the Missouri Valley, and particularly adaptable to this section. A vigorous grower and profuse bearer. Descriptions, prices and our beautiful new catalogue on request.
MOUNT HOPE NURSERIES, ESTABLISHED 1869 LAWRENCE, KANSAS

ior nature. We then began to propagate it."

In speaking of this variety, U. P. Hedrick, formerly professor of horticulture in the Michigan Agricultural College, said: "The King is more vigorous and prolific than the Concord, the time of ripening six days earlier and length of season the same, clusters are one-fourth larger, grapes are more persistent on the pedicels, pulp is more tender, flavor nearly the same, but more sprightly, seeds fewer in number, wood harder and of shorter joints and the pedicels are larger."

BASKET STAND USED BY THE GRAPE PICKERS.

Each of the Munsons, father and son, have large homes on the farm. Every modern convenience is provided. A gravity system water supply plant has been installed. The storage tank is of 150 barrels capacity and a windmill furnishes the power to run the pump. A complete sewage system, with septic tanks, is used. Neither the water supply nor the sewage system ever has caused any trouble.

The grape crop this year was good, but there was not enough sunshine to ripen the fruit to the best advantage. The sugar content was not so large as it usually is, but the prices were fairly good. On September 27 the prices received for a dozen of the four-pound baskets were: Delaware, $2; King, $1.25; Niagara, $1.25 and Worden, $1. Collections are made when the grapes are delivered. Roy Munson has charge of the sales end. He is a former student of the Michigan Agricultural College.

The gross receipts last year, a vine, were: Niagara, 50 cents; Worden, 42 cents; Concord, 35 cents and Delaware, 33 cents.

Some other fruit is grown in addition to grapes. It all is well cared for, and brings a high price and good profit on the Grand Rapids market.

Fourth Conservation Congress

A Splendid Meeting to Encourage Better Use of National Resources

The conservation of human life and energy was the great, central theme discussed at the meetings of the Fourth National Conservation Congress, Indianapolis, Oct. 1th to 4th. As J. B. White, president, Kansas City, Mo., expressed it: "Human life is the world's most important asset, and it is the most important thing we have to conserve."

Woodrow Wilson gave an address before the convention October 3rd. He paid a high tribute to the work of the organizations interested in conservation, and he then said, in part: "The problem of this congress is to finish the human enterprise begun in America. We promised the world not an abundance of wealth, but a free and happy people.

"Since 1890, there has been no frontier in the United States. The task of settling the country has been completed. It now remains to put the finishing touches on the job of carrying to completion the creation of the American nation. The conservation of our resources is of no value unless we have a free and virile people to use them. And remember this about our occupation: The heartlessness must be taken out of work before we can put our heart into it."

Miss Julia Lathrop, Washington, D. C., Chief Children's Bureau, U. S. Dept. of Commerce and Labor, made a strong plea for compulsatory birth registration. The Congress endorsed this by resolution. Miss Lathrop pointed out the injustice that is being done many children by their being forced into fields of labor before they have reached the age required by law, simply because the proofs of their ages are lacking. She also asked for birth registration so the mother may have the proper care, and in that manner much of the infant mortality and cases of infant neglect may be eliminated.

For Birth Registration.

Miss Lathrop said, in part: "First of all, our bureau wants birth enumeration; steady, constant, reliable proof when we meet with problems of child labor and other vital questions. America is the slowest nation to realize the necessity and value of such a regulation. All Europe has such a system perfected because of the great standing armies there maintained. Why can not this country make this one of the vital points in the peace movement and keep a record of its citizens so that they may become useful and contributive agencies instead of targets for guns. It is the mighty and overwhelming influence of the hope that the next generation rise higher than the present that brings to the American shores the striving foreigners, and it is this same keynote that underlies the work of the children's bureau."

Ben B. Lindsey, judge, juvenile court, Denver, Colo., advocated state aid for poor mothers. In the course of his address, Judge Lindsey said: "Maternity is more than the prompting of nature. It is a patriotic duty to the state. A willful evasion of so plain a duty should be visited with the same contempt that meets the deserted from the ranks.

"It might not be a bad idea to consider pensioning mothers, as we pension soldiers after a battle is fought; after they have gone through the valley of the shadow, after they have slaved and toiled and suffered and reared their children to manhood and womanhood, to guarantee them a happy old age by providing a 'pension.' But while they are engaged in the service of the state, in saving the state by saving the child, I insist, where it is necessary to enable them to do their part in the battle, they should be compensated."

To Aid the Children.

Mrs. Orville T. Bright, Chicago, representing the National Congress of Mothers, gave an address that received a great deal of attention. She said, in part: "The advance in agriculture should be duplicated in home culture. Women should have more instruction in home making and child raising. There are 300,000 preventable deaths of children every year in this country. Homes have a greater influence over the welfare of the human race than any other thing."

Mrs. Bright was applauded by the Congress when she expressed her opinion of the divorce laws. "Divorce and marriage laws should be controlled absolutely by the nation, so they will be uniform. There is a direct need for the teaching of personal hygiene to boys and girls, also.

"There is need of a definite plan for the teaching of youth in regard to the true high ideal of marriage, parenthood and the making of the home. This would prevent a large number of divorces.

"Ignorance of hygiene is responsible for the troubles and failure of many homes. It is inexcusable that any boy or girl should be permitted to reach manhood or womanhood without a clear knowledge of personal hygiene, sanitation and food values."

H. H. Gross, Chicago, president, National Soil Fertility League, gave an address in which he outlined the work that the league is doing. "The principal aim of our league is to get every farmer to use the best methods of farm practice." Consumption is rapidly overtaking production. We must do better farming or in the future some of us will starve."

The Resolutions.

The resolutions passed at the close of the sessions of the Congress put emphasis on the importance of the conservation of vital resources, and the health of the people. Other matters contained in them as drafted by the committee, embrace: The establishment of a national department of health; accurate registration of births and deaths; measure for preventing births of hereditarily defective children; safeguarding of the health of industrial workers; discouragement of child labor; advanced methods of sewage disposal; uniform legislation regulating the refrigeration of perishable food stuffs; protection of migratory birds by federal laws; propagation and preservation of food fishes; a general series of state and national land surveys; approving the withdrawal of public lands pending classification; recommending the work of the federal forest service; protection of forests from fires when necessary by federal troops; uniform state activity in forest work; moderate forest taxation; uniform laws for the betterment of mining conditions; public control of water power development, and the improvement of conditions in rural districts and schools.

The officers of the Congress for the coming year are: President, Charles Lathrop Pack, Cleveland; vice-president, Mrs. Philip N. Moore, St. Louis; executive secretary, Thomas R. Shipp, Indianapolis; recording secretary, James C. Gipe, Indianapolis; treasurer, D. Austin Latchaw, Kansas City.

These Six Beautiful Pictures

ABSOLUTELY FREE OF COST

We Want to Send These Six Beautiful Pictures to Every Reader of This Advertisement Who Loves Art

These pictures are exact reproductions of the original paintings. They will add splendid beauty to the homes of every Fruit-Grower and Farmer reader. The subjects represented are such as will appeal to art lovers everywhere. The exact size of these pictures is 11x16 inches, and are printed on heavy quality paper. They are wonderful examples of art photography in sepia. Every Fruit-Grower and Farmer reader should send for them.

WHY WE MAKE THIS OFFER

The Object of this offer is to acquaint ourselves with new people residing in rural sections of the country who are interested in farming and fruit growing, everywhere. We want to reach these people, and in order to obtain their names, we offer to send you these six pictures, in return for a list of names of twenty-five people who live in your neighborhood.

There are hundreds of families living in the different farming and fruit-growing sections, who are not now subscribers to The Fruit-Grower and Farmer. We want to get in touch with them. Therefore, if you will send us a list of only twenty-five names (heads of families, or individual men) who are conducting farms, we will send you these six beautiful pictures free of cost.

There is no further obligation—merely send us these twenty-five names of men or women (but there must not be included more than one in a single household), and the pictures will be sent to you postpaid.

These pictures are excellent reproductions, and will cost you at least 50 cents each at any art store. **But we will send them to you FREE.** Merely make up your list and enclose only 10 cents to cover wrapping and postage, and they will come to you without delay.

If you can send us more than twenty-five names, or a "farmers' telephone book" which gives the names of all the people living in your vicinity, we will send you an extra set, so make up as large a list as you can.

The Fruit-Grower & Farmer, St. Joseph, Mo.

Will exterminate Rats, Mice and Gophers from your premises in a Safe, Sane and Sanitary Manner.

RAT CORN

NO ODORS OR SMELLS

It mummifies them. No matter where they die, they simply DRY UP. Positively do not smell.

Rat Corn is a new and scientific discovery, and without a doubt the greatest rat destroyer in the world; the only one that kills rats without any bad, dangerous or disagreeable effects. A trial will convince you.

25c, 50c and $1.00 per can—6-lb. pail $5.00
Express Prepaid

Ask your dealers, or sent by mail on receipt of price. We pay postage. Booklet "How to Destroy Rats" Free with each can. Farm Agents write for Special Price. Made only by

Botanical Manufacturing Company
250 S. Fourth Street, Philadelphia, Pa.
After eating Rat Corn he is Mummified.

Protect Your Trees

DON'T take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using

Hawkeye Tree Protectors

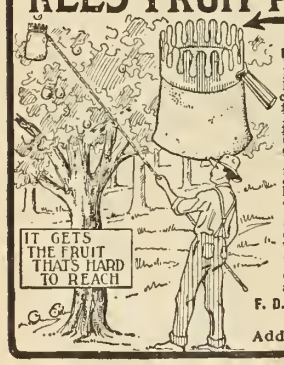
Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—¾ cent apiece. Special sizes made to order. Write for circular and samples.

We make Fruit Baskets — get our prices.

Burlington Basket Company
118 Main St., Burlington, Iowa

In writing please mention The Fruit-Grower and Farmer.

KEES FRUIT PICKER



Gathers, Apples, Peaches, Etc., as carefully as by hand with less work. Saves climbing ladder. No fruit out of reach. No wire to injure fruit or tangle in branches. Fruit drops into cloth bag, which can be filled before lowering. Ask your hardware dealer or send to us. Price complete, except long handle (a fish pole will do), 50c, postage paid. Your money back if not O. K. Circular sent on request.

F. D. KEES MFG. CO., Bealrice, Neb.
Address Box 42S.

In writing please mention The Fruit-Grower and Farmer.

Harvey Bolster Springs

prevent damage to eggs, garden truck, fruits, live stock on road to market. Make any wagon a spring wagon. Soon save cost—produce brings bigger prices—wagon lasts longer—horses benefited—thousands in use—"my wagon rides like auto" says one. Get a pair at dealers. If not at dealer's write us. Insist on Harvey's. 40 sizes—fit any wagon—sustain any load to 10,000 lbs. Catalog and fistful of proofs free.

HARVEY SPRING CO., 7361 7th St., Racine, Wis.

RIGHT NOW
is the Time to Send for Our Price List on
FRUIT TREES
Varieties True—No Disease—We Pay the Freight
For Price List Address
NEW HAVEN NURSERIES
Box 125 New Haven, Mo.

A Market That Aids the Middleman

(Continued from Page 6)

any way obstruct the free passage thereon. Users of the Market shall not use more than three feet of the walk from the end thereof.

No sale shall be made on the market before 4 a. m.

No teams shall be allowed to stop near the entrance to the City Market, or upon any of the streets thereon. And no driver shall be allowed to stop a team for the purpose of examining the produce drawn by it; provided, that this rule shall not preclude examination by any health officer or official.

No person other than the producer, or one who has purchased outside the city, shall sell on the City Market Michigan produce. The object of this rule is to preclude speculation in produce on the market.

The Superintendent of the Market shall compel all persons not having stalls on the Market to pay as they leave the City Market. The said Superintendent shall employ one man to sell tickets for use of the City Market and place another to collect such tickets and place the same in a box prepared for their reception. The Superintendent of the Market shall deliver such box with tickets therein to the City Comptroller for counting to use the same for comparison of entrance fees.

Horses may stand attached to vehicles in the Market, but all vehicles shall remain stationary; no vehicle or horse shall be allowed to remain therein after the Market hours, except for the sale of hay and straw. No feeding of horses shall be allowed on the Market; provided, that horses may be fed grain from nosebags.

Trimmings or decayed fruits or vegetables must not be left on the Market grounds. Idlers shall not be permitted to remain in said Market. No dog shall be allowed to enter or remain therein unless securely tethered. No person shall be guilty of any boisterous or disorderly conduct within the Market; nor resist or obstruct the Market Superintendent or any officer of the Market in the discharge of his duties; nor refuse to pay any rents due; nor refuse to allow the Market Superintendent or any duly authorized employe of the Market to examine the character and quality of any article of food offered for sale or to weigh same.

Penalties are provided by city ordinance for violations of all these rules.

Need of Co-operative Selling.

The growers never have organized a fruit selling association. Everything is sold in open competition. The Grand Rapids growers do have a Fruit-Growers' Association, but the purpose of this association is to advertise the crops and to interest buyers in the fruit grown in the Grand Rapids section. The buyers then take up the sales proposition directly with the growers.

There also is the Grand River Valley Association, but the purpose of this association is mostly educational. The members discuss methods of production and other country life problems.

A good co-operative selling association would do much to aid in selling produce. It would save much of the time which the growers now spend on the market waiting for buyers. Then, it would allow the fruit to be sold in large quantities under one label. Last, but not least, it would cut out the profits of the commission men.

Every effort is made to discourage speculation on the market, with all of its attendant evils. No one is allowed to resell any produce on the market. It is a straight cash proposition, and all speculation is eliminated.

Hay and straw also are sold. The wagons containing feed usually arrive at the market not earlier than 10 o'clock. The fruit and vegetable growers usually have left long before this, so there is no conflict. The market is equipped with scales, and some of the members of the market staff do the weighing, so the weight is official. While the section around Grand Rapids is not especially a hay section, quite a bit of feed is sold in this way.

The market really is open throughout the year, but, of course, the fruit and vegetable business stops with the arrival of cold weather. The produce comes from twenty miles around Grand Rapids, and is second in importance in the city, it being exceeded only by furniture. Grand Rapids is a great furniture center.

The city market of Grand Rapids is well managed. The consumers are getting the fruit and vegetables at a reasonable cost from the middleman, the way the business is handled now. The market is doing more to solve the high cost of living than the markets in most cities.

New Books

Farm Boys and Girls, by William McKeever, 326 pages, illustrated. Published by The Macmillan Company, New York City. Price $1.50, net.

Mr. McKeever is professor of philosophy in the Kansas State Agricultural College, and he has given much attention to the study of child raising, especially the problems found in the country. The development of a rural society that is satisfactory is, perhaps, the greatest problem of the age, and Mr. McKeever has written a book that will aid in solving this problem. This book should be in every rural home.

Making the Grounds Attractive with Shrubbery, by Grace Tabor, Published by McBride, Nast & Co., New York City. Price 50 cents net, postage 5 cents.

This book gives directions for planting and care of shrubbery. It also gives a carefully prepared and elavorate list of shrubs, classified according to the time they bloom, and their relative size. The lack of information possessed by the average man in regard to the adaptations of shrubs is very scant, and everyone who desires to make the home grounds more beautiful will find much of value in this book.

Making a Rose Garden, by Henry A. Saylor. Published by McBride, Nast & Co., New York City. Price prepaid, 55 cents.

It is a pleasure to get a little book like this, which gives all of the essential facts about growing roses in the door yard. It contains but fifty-three pages and eight full-page illustrations, but each of these pages is filled with the essence of rose culture. In this book it is not necessary to read through a great lot of small detail to find out just how to plant, prune or fertilize a rose bush in the door yard. The book is plain spoken and deals with simple facts.

Making a Garden to Bloom This Year, by Grace Tabor. Published by McBride, Nast & Co., New York City. Price 55 cents, prepaid.

This volume consists of 54 pages, with illustrations, and takes up a discussion of plants adapted for planting in a flower garden, and the methods of culture. The book gives especial attention to perennials.

Making a Rock Garden, by H. S. Adams. Published by McBride, Nast & Co., New York City. Price 55 cents, prepaid.

The use of rocks in decorating the home grounds and formal gardens has not received so much attention in this country as in Europe. This book discusses the arrangement of rocks and plants, where it is desirable to blend the two together.

The American Transportation Question, by Samuel O. Dunn; 289 pages, published by D. Appleton & Co., New York City. Price $1.50 net.

The theme of this book is a discussion of the factors that enter into the subject of rate making on transportation lines, and the effect of water transportation on railroad rates. In the last two chapters is considered the matter of government regulation and the underlying principles of railroad regulation.

The Potato, by Eugene Grubb and W. S. Guilford; 545 pages. published by Doubleday, Page & Co., New York City. Price $2, net.

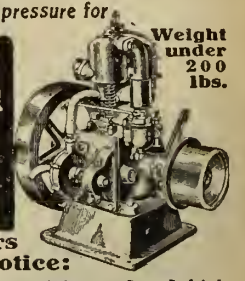
Here is a book that is worth while. It should be in the library of every person interested in potato growing. James Wilson, Secretary of Agriculture, said the book contains "much valuable data that ought to be in the possession of every farmer in the country." The book is the best recent contribution to the agricultural literature of the world. It is a pleasure to read and study a book like this that is so well written by men who are authorities. The book completely covers the subject of potato growing, both in this country and in Europe. It deals especially with the economic end of the production and marketing. There are forty-two chapters in the book, dealing with everything relating to the potato, from soils adapted to its culture to the cooking and serving of the finished product.

FARM CUSHMAN

Power to Run Your Spraying Machines

A powerful little 4 h. p. engine. It is very light and runs steadily. Will hold high pressure for spraying.

Original Binder Engine

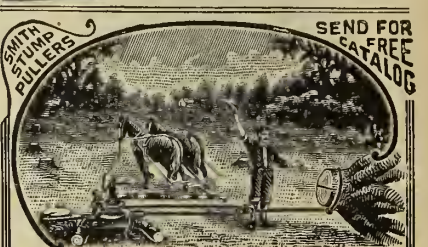


Weight under 200 lbs.

Fruit Growers Take Notice:

High power, high speed and high pressure put this all-purpose farm engine in a class by itself. Take it wherever you have work—it fits in anywhere. *The original binder engine—original sprayer engine—the only Cushman engine.* Accept no imitations. It delivers 1 to 5 full h. p. Easy speed changes. Consumes fuel according to "load." Write for book and state your needs.

CUSHMAN MOTOR WORKS
2095 N St., Lincoln, Neb.



Try This Stump Puller FREE

We want a Smith machine on every stump and timbered farm in the country; **it will clear from one to three acres a day, pulling the largest stumps and trees quicker than the holes can be bored for dynamite.** The Smith Stump Puller will transform your waste lands into the most productive, while the first crop on one acre will more than pay for the machine.

Our Three Year Guarantee

We give you a guarantee to replace any casting broken on the Smith machine for three years from date of purchase. **Our catalog tells you all about it, shows why the Smith Stump Puller is the most profitable implement made for farm use today, and explains our Special Introductory Offer and our Free Trial Proposition.** Send us your name and we will send it free.

W. Smith Grubber Co.
8 Smith Sta., La Crescent, Minn.

FITZ Overalls

Auto equipment

is incomplete without a suit of Fitz Overalls. These garments are large—easily slipped on over your clothes. A sure protection from grease and dirt in case of emergency, or for shop work.

Free Fitz Book on request.

Burnham-Munger-Root
DRY GOODS CO.
KANSAS CITY, MO.

Build with CONCRETE BLOCKS

Make your own blocks and build fireproof, permanent buildings with your own hands, by using the **HERCULES JR. CONCRETE BLOCK MACHINE,** designed especially for farm use. Requires no experience to operate, saves you money on whatever you build or repair. Write for full information and free booklet. **Century Cement Machine Co., 210 Mill St., Rochester, New York.**

Insect Enemies of the Peach

By F. A. Waugh, Massachusetts Agricultural College

[In the last issue Professor Waugh told about the San Jose scale as a troublesome peach insect, and described methods of combatting it. In this article other pests of peach orchards are dealt with.—Editor.]

Peach Tree Borer.

Probably the peach tree borer has caused even more profanity than the San Jose scale. It is a particularly troublesome and annoying insect and the methods of discouraging its attacks are such as to draw heavily on a fruit-grower's religious fortitude. It is much more difficult as a matter of fact to overcome the attacks of the peach tree borer than to clean out the San Jose scale. It occurs all over the eastern United States in practically every orchard, and many competent men believe it to be responsible for more actual damage than all other peach insects combined. It is the cause for the dying out of many orchards at ten to fifteen years of age when they should otherwise live from twenty to twenty-five years of usefulness.

The larvae or grubs of this insect live on the tender inner bark of the roots and lower portions of the trunk. The tree is often completely girdled by these borers. In such cases the leaves turn yellow and the tree soon dies. The presence of the insect is shown usually by gummy gelatinous material exuding from the wounds. The eggs are laid in July or August by a pretty black moth, usually on the lower part of the trunk near the ground. The eggs hatch in about ten days and the little borers work in through cracks in the bark. At this time they throw out minute quantities of fine brown dust from the holes and this will give a clue to their presence, providing the inspection is sufficiently careful. They hibernate during the winter and begin to work again during the spring, at which time the exudation of gum becomes apparent.

One method of fighting this insect is to wrap the trunk of the tree with stout building paper, the soil being mounded up over the base of this protecting sheet and the top of the paper being tightly tied to the trunk. These protectors have to be adjusted every fall and removed every summer. This is a troublesome and expensive labor and the method is not altogether efficient as a protection.

A great many different kinds of washes have been tried, including such concoctions as the stewed liver of a black cat killed in the dark of the moon. Indeed, a good many of the remedies recommended are built on this plan and they all seem to be equally ineffective. They have been generally abandoned by practical peach growers.

The only satisfactory method of fighting this insect is that of removing the grubs with a small, sharp knife. The operator goes through the orchard, preferably during November and again in the spring just before the leaves begin to grow. Each tree trunk is minutely examined, and if signs of the borer are found, they are followed up with a knife and the borer dug out. This is often a tedious and difficult job and considerable damage results to the tree during the operation. However, no equally effective method has yet been discovered.

This work may be facilitated considerably if the soil is mounded up about the trunks of the trees in summer just before the eggs are laid. This has a tendency to make the moth deposit her eggs higher up on the trunk where the borers are easily dug out. The mounds of earth should be drawn away from the trees at the time of the first spring cultivation.

The Lecanium Scale.

This insect is very bad in certain parts of the country and in certain parts of particular orchards. It is, however, a local insect and not so well known or generally found as the San Jose scale or the peach tree borer. However, it occasionally becomes so bad as to take all the profit out of a good crop. A sooty, moldy fungus forms on the excretions of the insect. When this appears to a considerable extent on the fruit, it makes the product unmarketable. It occurs most frequently in certain parts of Maryland, Southern Pennsylvania and Georgia.

This small, minute scale hatches about the middle of June, and the best time to treat it is when the young are spreading over the tree and fruit. At this time it may be sprayed with a solution of whale oil soap, made up in the proportion of one pound of soap to four or five gallons of water. It may also be treated with a fifteen per cent solution of kerosene emulsion. Either treatment is difficult and of limited effect.

The Plum Curculio.

This insect becomes very troublesome in certain years, its work being particularly noticeable when the crop of fruit is light. The insect occurs everywhere and feeds upon various kinds of fruit, especially stone fruits, although it often attacks apples also. Some energetic peach growers have thought it profitable to maintain an active campaign against this insect, but it seems to be a more common practice to let the curculio take what fruit it will and trust to the June drop or to hand thinning to eliminate the greater portion of the infested fruits.

The adult insect is a small, hard beetle with a short snout. This beetle comes nosing around about the time the fruit trees bloom. The female lays her eggs in the young fruit, making a small crescent-shaped puncture in which to place each egg. The eggs hatch in from three to five days and the larvae bore into the fruit. They usually complete their damage in two or three weeks. By this time the fruit often falls to the ground. The larvae enter the soil, where they pupate. Here they change again to beetles, emerging two or three weeks later to feed on the ripening fruit.

Good care and clean cultivation in summer tend to reduce the damage of the curculio to some extent. By gathering and destroying fallen fruit a large number of insects are removed from the orchard. The regulation text book method of fighting the curculio is to jar the trees during the early mornings of May and June and to catch the beetles upon sheets spread under the trees. During the cool mornings the insects are sluggish and easily fall from the tree when it is shaken. A regular piece of apparatus for this sort of work is made by constructing a canvas umbrella about twelve feet in diameter. This umbrella has an open slit on one side reaching from the circumference to the center. The umbrella is then mounted in an inverted position upon a wheelbarrow or some similar truck so as to have the open slit at the forward end of the circular catcher. This big canvas is then run under each tree and the tree jarred so as to cause the beetles to fall into the canvas. They are then easily collected and burned. In some cases this method doubtless pays its way. The energetic fruit grower must be his own judge as to whether he can afford this expense of jarring the entire orchard five to fifteen times during the growth of the crop.

Getting the Bug With Poison.

Really the most practical method of meeting the attacks of the curculio is by spraying with arsenical poisons. White arsenic, Paris green or arsenate of lead may be applied in the usual manner with the spray pumps. Two or three treatments are required. The first should be given very soon after the blossoms fall, the second treatment two weeks later, and the third treatment, if one is given, two weeks after the second. As Paris green is apt to injure peach foliage, it is not recommended, though careful applications, especially in combination with lime or well-made bordeaux mixture, may do no harm. Arsenate of lead is by all odds the safest and best of the arsenical poisons, and is now generally superseding all others in orchard treatment.

In the large peach sections of the central and southern states, where the best peach growers are adopting the practice of summer spraying with self-boiled lime-sulphur, the poison is added to this solution and applied at the same time. Scott and Quaintance recommend that this combined mixture be made of a strength of eight pounds of lime and eight pounds of sulphur to each fifty gallons of water and the arsenate of lead added at the rate of two pounds to each fifty gallons of the mixture. If the poison is used without the lime-sulphur spray, there should be a certain amount of lime added, say two pounds of lime to fifty gallons of water.

Fruit Bark Beetle.

The fruit bark beetle and the peach tree bark beetle, two different, but very similar insects, do a good deal of damage, especially in the central states. They bore holes in the tree trunks, making the bark look as though it had been struck by a charge of bird shot. These insects seem to be much worse on orchards which are otherwise in poor condition and they are generally regarded as hardly worth the attention of the best fruit growers. In other words, general good care and constant attention are depended upon to prevent damage by these insects.

In this connection it is important to remark that general good care goes a long way toward keeping in check all kinds of insect and fungous pests. These cause their greatest damage on neglected orchards.

The CRESCENT "A Time and Money-Saving Machine"

Apple Box Press

The Orchardist's Friend. The cheapest, lightest and most durable machine on the market. Its utility has been proven during the past five years. Its use easily saves one man's time and wages daily during the packing season. The boxing is also done with less injury to the fruit. One pressure down on the foot treadle will hold the cover tight for nailing. No split covers. Nails handy on a tray. Light weight makes it handy to carry to any part of orchard. The CRESCENT Press is so made that it is easily adjusted for boxing Peaches, Prunes, Pears or other fruit packages. Agents wanted. Write to

Price $7.50
F. O. B. CANON CITY, COLO.

C. J. MELLER
Owner and Manufacturer
Canon City, Colorado

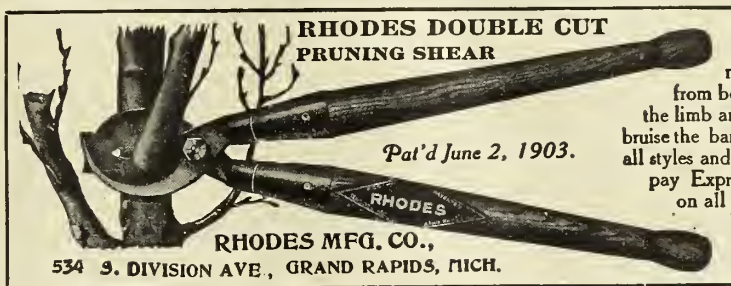
IDEAL
Corrugated Paper
Cushions
For Packing Apples

KEEP THE FRUIT UNBRUISED so that apples are delivered as round and solid as the day they were packed. Their use is an evidence of careful packing which commends your fruit to the trade and their cost is so low that every packer should AT LEAST INVESTIGATE.

Standard discs 16½-inch diameter. Discs and sheets cut to order in any size. Write us.

THE HINDE & DAUCH PAPER COMPANY
Department "3" SANDUSKY, OHIO

RHODES DOUBLE CUT PRUNING SHEAR



THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

RHODES MFG. CO.,
534 S. DIVISION AVE., GRAND RAPIDS, MICH.

Berckmans' Shade Trees Make Home Comfortable

Berckmans' lawn trees, flowering shrubs, hedges, evergreens, roses and vines will make your home more cheerful—and cost you little. Plant them this fall and they will give you beauty and comfort next summer and every year afterward.

Berckmans' Beautiful Catalog will aid you in making your home better. It tells about fruit trees, too. It's free—and valuable; write for it now.

P. J. BERCKMANS CO., Inc.
Box 1070F, Augusta, Georgia

Fifth National Apple Show

Problems of Vital Importance Will Be Discussed By Experts. Storage and Marketing Will Be Given Prominence

Experts in all lines of the apple business will be active in the conference in Spokane during the Fifth National Apple Show, November 11th to 17th, to assist in solving the problems of the industry.

Two days' conference will be devoted to orchard problems, including choice of site, preparation and planting, choice of varieties, cultivation of orchard, pruning, spraying and harvesting. Wednesday's conference will be on storage; Thursday's on by-products; Friday's on marketing and distribution; Saturday morning will be given to financing, and Saturday afternoon to "what to grow between the rows."

In the storage conference, the discussion will be on the question whether it shall be storage on the farm, at the initial shipping point, at an intermediate point such as Spokane, or in the east; also whether it should be "cooler" or "cold" storage. The matter of ownership of storage plants—whether by growers, commission men or under a leasing system—also will be given attention.

The marketing feature will be given great prominence in the conferences. Heads of growers' unions, transportation officials and bankers will discuss this question in all its phases. One expert of national prominence will discuss the subject of the effect of the Panama canal on the fruit industry in the Pacific Northwest.

An additional prize list has been announced by the trustees of the Fifth National Apple Show, which includes prizes for ten and five-box displays, omitted from the first list published, and several special premiums. In the ten-box contests, first prizes of $40 cash and second prizes of $20 are announced for the following varieties: Arkansas Black, Baldwin, Black Ben Davis, Delicious, Grimes Golden, Jonathan, McIntosh Red, Northern Spy, Rhode Island Greening, Spitzenberg, Stayman Winesap, Wagener, Winesap and Yellow Newtown.

For the best ten boxes of Rome Beauties a cash prize of $40 and 250 Rome Beauty trees are awarded by the Milton Nursery Company of Milton, Ore., with $20 for second and 250 Wagener trees from the same nursery. The Washington Nursery Company, Toppenish, Wash., will give 500 Yellow Newtown trees for the best ten boxes of Winter Bananas, in addition to the show's cash prize of $40. The second prize is $20.

Judges at the National Apple Show in Spokane, November 11th to 17th, will be Professor Close of the pomological division of the United States department of agriculture, chairman; C. J. Sinsel, Boise, Idaho; James Gibb, Kelowna, B. C.; Professor W. S. Thornber, chief horticulturist Lewiston-Clarkston School of Horticulture, and Albert Dickens, professor of horticulture, Kansas State Agricultural College. At least two judges will pass on every exhibit this year, eliminating the dissatisfaction caused by having one man judge some of the exhibits.

Teach Packing at Apple Show.

The pack has long been the chief stumbling block which has confronted the apple grower in his march toward success. Ignorance rather than dishonesty has mainly been responsible for the disreputable packs which have reached the market. The Apple Show Commission, which is the governing body of the Indiana Apple Show, has decided to offer a systematic course of instruction in packing at the 1912 show.

Hon. Joseph Cravens, treasurer of the commission, says: "The fact that the package sells the article has been realized by the manufacturer for some time. The majority of food stuffs are sold in neat, attractive packages. These properly packed materials bring a much better price than would the same articles offered in bulk. It is the same with the apple.

"Pack the apple attractively if you want to reach the fancy market. The apple box is the modern package. It is suitable only for the highest class fruit. Indiana orchardists have too long been content with the mere growing of apples. The 1911 show proved beyond a shadow of doubt that Indiana could produce fruit and lots of it. We now intend to start the grower along correct packing lines. A packer has been secured from Oregon. This man is a graduate of the Oregon Agricultural College and has worked several packing seasons in some of the largest ranches of the far west. He will give daily packing demonstrations during the entire show week—Nov. 13th to 19th. He will explain the various box packs as well as demonstrate the proper methods of packing the barrel.

Every phase of packing will be explained. With the instructions gained at the show and vigorous practice at home, the ordinary fruit grower can rapidly develop into an expert packer. Properly packed Indiana fruit should top the fancy market as nowhere else can such flavor be obtained."

Your Own Electric Power Plant.

The general opinion that only those living in the city or along the transmission line of an electric light and power company can have electric lights in their home and power for the operation of small machinery about the farm, is to be a consideration of the past.

The subject of the individual light and power plant has been and is receiving the special attention of the large manufacturing companies of electrical machinery. This demand, says Prof. Fred G. Person of the Colorado Agricultural College, Ft. Collins, has resulted from the increasing needs of the agricultural districts, and today the individual plant is available to the farmer of moderate means, and he may enjoy the same privileges and pleasures that his city neighbor does.

Several of the manufacturing companies are placing these small units upon the market at a moderate cost, and they are so simple and easily operated that the ordinary difficulties arising from their use does not require the man with a technical training.

The equipment consists of a low voltage generator, which insures safety, storage batteries, gas or oil engines which use low grade fuel, thus reducing the cost of operation. The cost of these plants will depend upon the number of lights which will be required in the system.

It will probably not be long until the individual lighting plant will be as common as the automobile. Prof. Person will be glad to give any information or assistance desired by any contemplating the installation of a small lighting system.

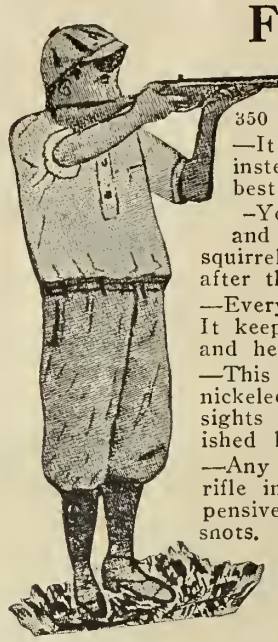
Prune Apple Trees Now.

Blight and severe winter injury has caused great damage to apple orchards in Indiana and other central states. Prof. C. G. Woodbury, secretary of the Indiana Apple Show, which is to be held in Indianapolis, November 13-19, 1912, says: "Great care should be exercised in removing all dead wood from apple trees before the leaves fall this autumn. Limbs injured by the weather or blight can be easily seen before the leaves drop and can be removed more readily and cheaper than at the time of the annual pruning in the early spring. Dead leaves are worse than useless to the tree as they harbor numerous forms of fungous troubles. Sharpen up your pole shear and pruning knife, and remove this dead wood at once. This will remove one great source of infection, so that it will be easier to produce fancy fruit for 1913. Apple culture is not a haphazard industry. Every means known to science must be exercised in pest control, if merchantable fruit is to be produced. Orchard sanitation, as well as spraying, must be practiced. Great care should be exercised in caring for these trees, as the apple is one of the most important crops of the country.

Dry sweet corn carefully for seed. It is usually more difficult to dry thoroughly than other kinds of corn. Store it where it will not be frozen during the winter.

Subscription expired? Renew today.

BOYS! How Would You Like to Get a Handsome Sterling 350 Shot Air Rifle Like This FREE OF CHARGE



—It is a genuine Sterling Air Rifle, Boys! It is a repeater, and shoots 350 times without reloading.

—It is a perfectly safe and harmless rifle. It uses air instead of powder; it makes no noise or smoke, and best of all, boys, it shoots accurately.

—You certainly will have fun hunting in the woods, and in the fields, and, oh! but won't you make the squirrels and rabbits and crows skidoo when you get after them with this wonderful little Sterling Air Rifle.

—Every boy enjoys shooting as a sport and pastime. It keeps them out of doors, and it makes them strong and hearty.

—This Sterling Air Rifle is a handsome one. It has nickeled barrel and magazine. It is fitted with true sights and pistol grip, and has a stock of finely polished hard wood.

—Any boy, no matter how young, can shoot with this rifle in the greatest safety, and the shooting is inexpensive—for ten cents will get you almost a thousand shots.

How to Secure This Rifle

Merely send for Ten of our Beautiful Sepia Art Pictures, which YOU GIVE AWAY FREE to Ten of Your Friends or Neighbors who give you a Six Months' Trial Subscription to The Fruit-Grower and Farmer at Our SPECIAL PRICE of only 25 cents each. And when you have secured the TEN Trial Subscriptions, send them to us, and we will forward this Sterling Air Rifle to you FREE OF COST.

Send for the Pictures, Sample Copies of The Fruit-Grower and Farmer, and subscription coupons, at once, without fail. This Rifle is a Genuine STERLING 350-SHOT REPEATER, and you will appreciate it.

The Fruit-Grower and Farmer

ST. JOSEPH, MISSOURI

Statement of Ownership, Management, Etc.

For Postoffice Department—Required by Act of August 24th, 1912.

Name of Publication, THE FRUIT-GROWER AND FARMER
Published Monthly at St. Joseph, Missouri

Names and addresses of business and editorial staff:
James M. Irvine, Managing Editor, St. Joseph, Mo.
Prof. E. H. Favor, Horticultural Editor, St. Joseph, Mo.
Floyd B. Nichols, Agricultural Editor, St. Joseph, Mo.
W. G. Campbell, General Manager, St. Joseph, Mo.
American Printing Company, owner and publisher, St. Joseph, Mo.

Owners, American Printing Company, St. Joseph, Missouri, a corporation organized under the laws of the State of Missouri.

OFFICERS AND STOCKHOLDERS:
W. G. Campbell, President
James M. Irvine, First Vice-President
F. L. Campbell, Second Vice-President
W. P. Tracy, Secretary-Treasurer

I certify that the above is a correct list of all stockholders in above corporation, and that all information given above is correct.

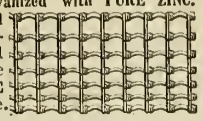
W. G. CAMPBELL, President & General Manager,
AMERICAN PRINTING COMPANY,
Publishers of The Fruit-Grower and Farmer.

St. Joseph, Buchanan County, Missouri, October 9, 1912.
Subscribed and sworn to before me this ninth day of October, 1912.
(Seal) WALTER A. LANDIS, Notary Public.
My commission expires April 29, 1913.

Strongest FENCE Made

Made of DOUBLE STRENGTH Coiled Spring Wire. Requires fewer posts. Always tight. Is heavily Galvanized with PURE ZINC.

Will outlast all others. Sixty different styles and heights to choose from. A FENCE for every purpose.



WE SELL DIRECT TO THE FARMER AT DEALER'S PRICES.

Be your own merchant and put the Dealer's Profit in your own pocket where it belongs. Prices the lowest ever quoted on first-class wire fence.

26-inch Hog Fence, - - 13½c. per rod.
49-inch Farm Fence, - - 22c. per rod.
48-inch Poultry Fence, - 22c. per rod.

Special Barbed Wire, $1.40 per 80-rod spool.

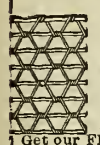
Biggest values ever offered and sold under our 30-DAYS-FREE-TRIAL-MONEY-BACK GUARANTEE-CONTRACT. Our big Catalogue contains information you should have. Write for it today. It's FREE.

COILED SPRING FENCE CO.
Box 125 Winchester, Indiana.

BROWN FENCE

For all purposes. Direct from factory, freight prepaid.
Bargain Prices—13c per rod up
Get our new fence book before you buy fence for Horses, Cattle, Sheep, Hogs, Poultry, Etc.
Also Lawn Fence and Gates
We save you *big money*—give you highest quality. Mail postal *now* for Big Fence Bargain Book
Dept. 14 THE BROWN FENCE & WIRE CO., CLEVELAND, OHIO

TIGER-FENCE



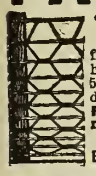
Shipped direct from factory to you. No Middle-man's profit to pay. Twenty Years' experience enables us to produce the most Durable, Strongest, Best Galv. Fence made. If not as represented return at our expense. 60-Styles, Diamond and Square Mesh, 11½ to 35c per rod; 80-rod spool Galv Barb Wire $1.40.

Get our FREE CATALOG and prices before placing orders.

Tiger Fence Co. Clarksville, Tenn.

FARM FENCE

11½ cts. a rod for a 26 in. high hog fence; 16 1-2c. a rod for 47 inch high stock fence: 23c a rod for a 50-inch heavy poultry fence. Sold direct to the farmer on 30 Days Free Trial. Special barb wire, 80 rod spool, $1.40. Catalog free.



INTERLOCKING FENCE CO.
BOX 50 MORTON, ILLINOIS.

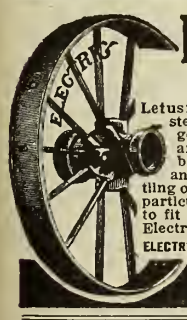
HOG FENCE

26 inches high 16 cents a rod
100 other styles of Hog, Farm and Lawn Fencing.
Buy from factory direct and save dealers profit. Large Catalogue FREE.
KITSELMAN BROS.
Box 125 Muncie, Ind.

FARM FENCE

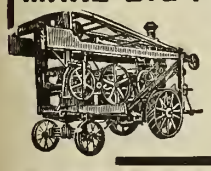
41 INCHES HIGH
100 other styles of Farm, Poultry and Lawn Fencing direct from factory at save-the-dealer's-profit-prices. Our large catalog is free.
20 CENTS A ROD
KITSELMAN BROS. Box 125 Muncie, Ind

New Wheels for the Old Wagon



Let us fit your old wagon with "Electric" steel wheels and make it strong and good as new. Another wagon life and a *real handy wagon* just by buying wheels. Broad tires, never any resetting, no drying apart, rattling or coming loose. Free book gives particulars and shows how it pays big to fit up old wagons with the long-life Electric Steel Wheels. Write for copy.
ELECTRIC WHEEL CO., BOX 57, QUINCY, ILL.
Electric

MAKE BIG PAY DRILLING WATER WELLS



Our Free Drillers' Book, with catalog of Keystone Drills, tells how. Many sizes; traction and portable. Easy terms. These machines make good anywhere.
Keystone Well Works
Beaver Falls, Pa.

PEACH SEEDS FOR SALE

1911 AND 1912 STOCK. Write for Prices and Samples.
THOS. R. HAMAN, 1614 Olivsr Strsst, Baltimors, Md.

Potash From Seaweeds

Great Possibilities in the Kelp Beds of the Pacific Coast

By Joel Shomaker, Washington

A survey of the kelp beds of the Pacific Coast is being made for the purpose of determining the amount of available potash-bearing seaweeds the shores and bays contain. The official working crew began operations at San Diego, Calif., and will continue the work of exploration to Seattle, Wash., and throughout the waters of Puget Sound.

It is estimated, by those making the preliminary surveys under the direction of the department of agriculture at Washington, D. C., that there are groves of bladder-kelp situated between Point Loma, on the Southern California coast, and Seattle, in the Puget Sound basin, from which 1,000,000 tons of kelp can be harvested from mapped beds, every year. That species of kelp known as the "bladder" is said to contain from twenty-five to forty per cent potassium chloride.

The Crop Reporter shows that 2,000,000 farms in the United States use some form of fertilizer to the value of $115,000,000 annually. The potash, forming the chief plant food in commercial fertilizers, comes from Germany and represents an immense sum of money sent out of this country every year to pay for potash. It is said that an American syndicate offered $50,000,000 for the German potash mines, but the stockholders did not consider it enough to hold a meeting to consider it.

The bladder kelp is one of the peculiar seaweeds growing on rocky bottoms, in swift currents, that comes to the surface in the form of bulbs. The long stems, often one hundred feet in length, resemble the old fashioned blacksnake whips, from which the name "whipstock kelp" is probably derived. The plant begins growth in early spring, matures in midsummer and casts off from its bed and floats to the seashore during the winter. There is a new crop every year.

When growing in the beds beneath the water's surface, the plants have long, leathery leaves that are always in motion, and campers on the beach often refer to them as elephant ears. They grow in six to twenty fathoms of water. Single specimens of bladder kelp weigh from twenty to thirty-five pounds. Some surveys in the San Juan Islands and through the straits of Juan de Fuca prove that beds one mile square hold an average of one plant to the square foot.

Gardeners of the Pacific Coast country have experimented for many years in the use of seaweed for fertilizing purposes. They report that the bladder-kelp is the best producer of results ever tried, in putting the soil in condition for producing better strawberries, blackberries and small fruits and for making vegetable gardens bring profitable returns. They pull the kelp from the rocks at low tide, and bury it at the roots of the plants to be fertilized.

There are many Japanese gardeners scattered along the Pacific Coast who fish out the long bladder-kelp bushes with oyster tongs, to put on the lands. The use of such seaweeds has been in vogue in Japan for many years. The Japanese find that bladder-kelp is valuable for human food and for mixing with hay and cereal to feed stock.

It is said that there are many by-products that can be made from the bladder-kelp plant. It contains iodine and may be made into glue and shellac. No attempts have been made to convert the plant to any general commercial use. It is estimated that if the annual crop of 1,000,000 tons was harvested and put into condition for commercial use, it would be worth $40,000,000 for the potash found in the kelp.

The Puget Sound Indians utilized kelp for many years before the white people located in this country. They placed the plants on logs and let them evaporate sufficiently to pick up salt from the crusts of dry matter. Even to this day some of the old timers prefer the kelp salt for vegetables and game to that imported from the salt mines. They used the long stems for fishing lines and made megaphones, or speaking trumpets, of the hollow tubes, at potlatches, when the big chiefs were delivering imperative commands for peace or war.

The Alaskan Indians use bladder-kelp for medicinal purposes. The medicine man places one end of the hollow kelp tube in the fire and holds the other end against the face or other exposed part of the sick patient. The steam, coming through as a result of the melting and frying of the parts in the fire, generally cured the patient and added more laurels to the doctors. Because of that use, the plant is held as one of the sacred sea vines of the North.

Many of the northern tribes, living along the seashores, found the bladder-kelp valuable in the manufacture of a villainous alcoholic drink known as "hoochenoo." The liquor acted as a powerful stimulant when taken in small quantities, and generally caused the death of one using it to excess.

It is said that whenever the Indians desired to get rid of an enemy, white or redskin, without breaking any of the laws of the country, they simply invited the chosen one to drink hoochenoo with them and saw that he had enough to cause death.

Many promoters have been looking over the kelp beds of the coast for the purpose of attempting some method of collecting the plants for making saleable potash. So far nothing has been decided upon by any of the experimenters. When the present survey is complete, which is scheduled to require three months, it is possible that Seattle men will revive the plans for the commercializing of the kelp beds.

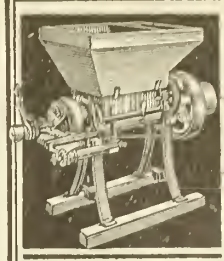
Marketing Potatoes.

Potatoes may be graded by means of machine sorters with proper screens. Boys should be stationed beside the graders to sort out all rough, or overgrown specimens showing second growth. Fancy potatoes, choice, good and field run potatoes are recognized. All should be sound, and the last class is unassorted.

Harvesting should be done without bruising, breaking the skin, or cutting the potatoes if possible, says K. A. Kirkpatrick, Minnesota Extension Horticulturist. It should not begin before thorough maturity is reached. If the skin rubs off in handling, the potatoes are too green for the most satisfactory marketing. The tubers should be free from scab or the knobs resulting from second growth, and should not be muddy. No stones, clods, or other foreign material should get into the sacks. If possible, the mixture of potatoes of different colors should be prevented.

Only new 150-pound sacks should be used. They should be set upright in rows of three along each side of the car. A layer of sacks on their sides may be placed on the top of the offset so made. This leaves a gangway through the middle of the car for ventilation. This is especially important during the earlier and warmer part of the shipping season. At that time, only from 200 to 210 sacks should be loaded in one car. Later a large car may carry as many as 250 sacks.

SAVE ¼ OF EVERY $100



Every mouthful of unground feed your stock eats means a waste of 25 to 30%. Would you let that amount rot in the field unharvested? No! Then GRIND IT on a

STOVER OR IDEAL FEED MILL

SEND FOR CATALOG
We also build Samson Wind Mills, Pump Jacks, Hand Grinding Mills for Poultry Raisers, Gasoline Engines, Ensilage Cutters and Brass Candlesticks.

STOVER MANUFACTURING CO.
260 Ideal Avenue. FREEPORT, ILLINOIS

20th Century Grader

DOES 40 MEN'S WORK

Write for Catalog
The Baker Mfg. Co.
Write today

Digs irrigation ditch 4 feet wide, 26 inches deep and one mile long per day with one man to operate and a team of horses. Cost, only 2c *per rod*. Pays for itself in 20 days. Saves time; saves labor; increases profits.

Reinforced steel throughout—light—strong—guaranteed. Makes irrigation ditches and builds roads—many other farm uses. Will last a lifetime. Low in price. Easy terms to responsible parties. *Write for catalog*—sent free. Contains valuable pointers for increasing crop profits.

THE BAKER MFG CO., 530 Hunter Bldg., Chicago, Ill.

ARMY AUCTION BARGAINS

BANNERMAN

Tents.	$1.40 up	Army Swords.....	$ .35 up
Leggins, Pair	.15 "	Army Revolvers...	1.65 "
Bridles.....	.90 "	" B/L Rifles..	.98 "
Saddles.....	3.00 "	" R/Pg's ..	1.48 "
Team Harness...	21.85 "	" 7shot Carbine	3.50 "
New Uniforms...	1.40 "	Old Pistols.....	.50 "
Colts Army Cal. 45 Revolver.....			8.50
Springfield-Mauser High Power Sporting Rifle.			11.85

Colts Revolver Cartridge 1c each, Spfld-Mauser Ctg. 2c ea. 15 acres Gov't Auction Goods. Illustrated and described in 400 large page wholesale retail cyclopedia catalogue mailed 25c.
FRANCIS BANNERMAN, 501 Broadway, New York City

Are You Interested In

pleasant, permanent and profitable agency work? We offer a position as exclusive distributing salesman either all or spare time for the Automatic Combination Tool, a Fence Builders Device, Post Puller, Lifting and Pulling Jack, Wire Stretcher, Wrench, etc. Used by Contractors, Teamsters, Farmers, Factories and others. Weighs 24 lbs., lifts or pulls 3 tons. Write for offer and county desired.
AUTOMATIC JACK CO., Box 99, Bloomfield, Ind.

HIGHEST CASH PRICES FOR RAW FURS

WRITE FOR OUR LISTS AND LET US KEEP YOU IN TOUCH WITH ACTUAL MARKET CONDITIONS. OUR ASSORTMENT NEVER VARIES. WE PAY WHAT WE QUOTE. NO EXPRESS CHARGES. NO COMMISSION.

A·E·BURKHARDT
MAIN STREET CORNER THIRD CINCINNATI, O.

Trappers Names

are valuable to us. Your name in our possession will be just as valuable to you. We pay the highest prices for furs. Ship them to us.

Send today for price list and tags—they are FREE.

We Are Direct Buyers, Therefore, Charge No Commission.

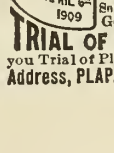
Lotz Bros.
53 Chestnut St.
St. Louis, Mo.

FREE TO TRAPPERS!

Fur News Magazine tells all about trapping, hunting, fishing, raw furs, ginseng, also lots of good stories and instructive articles. Monthly, $1 a year. **FREE OFFER.** Send **25c.** for 3 months' trial and get "Mink Trapping Secrets" **Free.** Fur Farming for Profit, new book, 192 pp., cloth bound, 75c., all about raising fur bearing animals.
Fur News Pub. Co., 71 W. 23d St., New York, Room 527

TRUSS WEARERS

FREE attention: The **PLAPAO-PADS** are different from the truss, being medicine applicators made self-adhesive purposely to hold the parts securely in place. No straps, buckles or springs—cannot slip, so cannot chafe or compress against the pubic bone. Thousands have successfully treated themselves at home without hindrance from work and conquered the most obstinate cases. Soft as velvet—easy to apply—inexpensive. Awarded Gold Medal. Process of recovery is natural, so no further use for truss. We prove what we say by sending you Trial of Plapao absolutely **FREE.** Write TO-DAY.



TRIAL OF PLAPAO
Address, PLAPAO LABORATORIES, Blk. 220, St. Louis, Mo.

Genasco

The Trinidad-Lake-Asphalt

Ready Roofing

You can't expect "dead" roofing to give you real service.

Genasco Roofing has life that comes from Trinidad Lake asphalt.

Life makes it resist sun, wind, rain, heat, cold, and fire.

Genasco gives lasting protection to all your buildings.

Comes in rolls and is ready to lay—easy, without experienced help. Mineral or smooth surface. Ask your dealer for Genasco.

Write us for samples and the Good Roof Guide Book—free.

The Kant-leak Kleet, for smooth-surface roofings, prevents nail-leaks and makes seams watertight without cement.

The Barber Asphalt Paving Company

Largest producers of asphalt, and largest manufacturers of ready roofing in the world.

Philadelphia

New York San Francisco Chicago

ROOFING 75 cts Per Roll of 108 Sq. Ft.

Write for Catalog

We are selling out our entire stocks of Roofing at Bargain Prices! Going at 75c per roll and up. Get Gordon-Van Tine's sensational Economy Year cut prices on "Quality" Rubber 1-Ply Roofing. Price per roll of 108 square feet, only $1.10.

Guaranteed 5 Years

Quick shipment from four freight-saving railroad centers.

Made from long-fiber wool felt and asphalt, coated with flint. We also offer Jap-A-Top Surface Roofing at $2.25 per square, and have made a big reduction on Jap-A-Top Surface Shingles. Free Catalog proves our prices lowest in the United States

Non-Leaking and Fire-Resisting!

No more damage and trouble due to leaky roofs! Roofing is easy to apply. Free nails and cement in every roll

BARGAIN CATALOG AND SAMPLES FREE

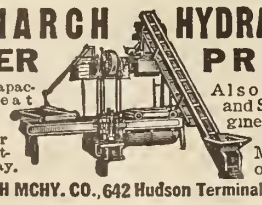
This is positively the greatest money-saving opportunity in the history of the roofing business. A postal brings all our Economy Year Sale offers and actual samples free. Write us.

GORDON-VAN TINE CO.

3096 Case St., Davenport, Iowa

MONARCH CIDER HYDRAULIC PRESS

Proved capacity, great strength, all sizes. Write for FREE catalog today.



Also Gasoline and Steam Engines, Threshers, Saw Mills. Get our prices.

MONARCH MCHY. CO., 642 Hudson Terminal, New York

SAY! I am in the Berry Plant Trade for Lifetime business. My next spring's list will contain all best old and new varieties. B. F. Smith, Lawrence, Ks.

The Possibilities in Potatoes

Fine Opportunities For Producer of Pure Seed

As a crop to grow between fruit trees before they reach bearing age, the one crop which rivals corn is potatoes. Potatoes have all of the good qualities that could be asked of an inter-crop, and do not produce the shade that is sometimes troublesome when corn is used in a young orchard on strong land. The frequent cultivation of potatoes makes conditions ideal for the development of the young trees, and the digging in the fall leaves the soil loose and in just the right condition to soak up the winter rains and snows. It is the equivalent of fall plowing.

There is more attention being given each year to potato growing, and new potato districts are being discovered and developed. The consumption of potatoes is slowly increasing, although statistics compiled by the United States government show that we of the United States eat but three bushels of potatoes per capita each year, while in England the per capita consumption is seven bushels. Those of us who are growing potatoes need to urge their use as food just as badly as we need to urge the more extensive use of apples. None of us eat as many potatoes in a year as we should, neither do we eat as many apples.

Discard the Scrub.

In Bulletin No. 225 by J. G. Milward, issued by the Wisconsin Experiment Station, it is said that "high market standards in car shipments of potatoes are urgently needed in Wisconsin. To conform to a high standard only a few varieties should be grown in a community. Only pure seed should be used, and all mixtures and new varieties of no market standing should be discarded. This will make possible the organization of community potato growing centers and the shipment of uniform car lots of table stock and unmixed seed."

After describing a number of the best varieties of potatoes, Professor Milward says: "As a rule, in localities where the fertility of the soil has been depleted, either by continuous cropping or irregular rotations, the commercial standard of type and quality has been lowered. Potatoes thrive well upon soil of good water-holding capacity. This is indicated by the fact that both the virgin sandy-loam and clay-loam soils of this state produce heavy yields of good quality. The Burbank, especially, thrives on well drained hard-wood soils. These virgin soils are rich in humus, friable, hold moisture well, and are easily kept in good tilth.

"The cultural history of potato growing in Wisconsin shows that a large amount of potato land has been depleted of its virgin fertility and humus content. This is particularly noticeable in the light sandy sections. Growers in these sections commonly assume that sufficient rainfall is the determining factor governing profitable yields. From the standpoint of yield this is largely a fact, but there are other conditions affecting the standard of type and maturity, which must be given commercial significance. Under faulty soil conditions, growers cannot expect any variety of potatoes to maintain a high standard of type or quality.

Community Potato Growing.

One idea brought out in this bulletin which is of importance to potato growers everywhere concerns the opportunities for potato seed growing. Professor Milward says no crop offers better opportunities in the growing of pure seed than the potato, and that the development of this phase of the industry will have an important influence on the improvement of commercial standards.

"One of the best evidences of progress which has been made in Wisconsin, is the awakening of interest in community potato growing. A study of the potato sections of the state will show that there are several sections where a community plan of potato growing can be successfully carried out. In the development of community potato growing, it is planned to eliminate varieties of doubtful commercial value and get the growers to concentrate so far as possible upon an adaptable variety or a limited list of adaptable varieties. The problem of sorting and grading is necessarily complicated under the present system of handling, where several types are grown in a community. This is especially unfortunate in communities where half the varieties grown would satisfy all existing relations of soil adaptability. Improvement in this particular, under organized methods will obviate the conditions which have lowered the standards of car shipments in this state.

The Potato's Importance.

"During the past three years the Wisconsin Experiment Station has conducted extension meetings in connection with the field work which has been located upon trial fields in the potato sections of the state. As a result of this work, a movement toward local organization has been started in several communities, for the improvement in cultural methods and uniformity in market standards.

"The importance of giving attention to correct market standards is emphasized by consideration of the value of the potato industry to the state. During 1911 the crop approximated 30,000,000 bushels. As a conservative estimate the value of this crop would be $20,000,000. Three counties in the central part of the state produced nearly 3,000,000 bushels each.

"Thousands of acres of new land are rapidly coming under development in the northern part of the state. This soil is suitable for growing stock of the highest quality. Although there are over 275,000 acres devoted to commercial potato growing in Wisconsin, the new land which will become available to the industry, greatly exceeds the present acreage. It is safe to say that from the standpoint of soil, climate, and market advantages, no agricultural crop offers better commercial possibilities than the potato."

Prizes to Students.

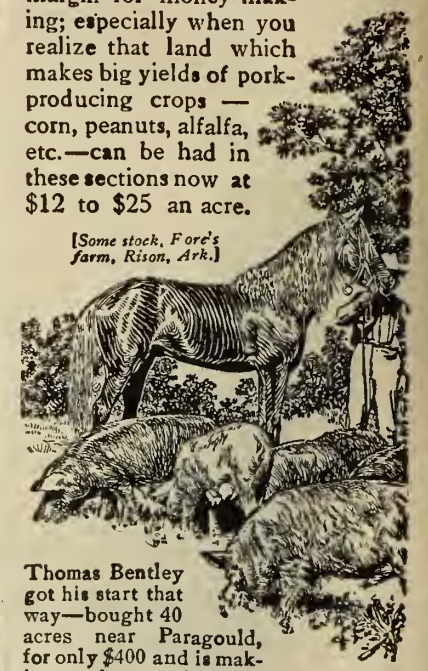
At the next annual meeting of the Illinois State Horticultural Society to be held in Champaign-Urbana, Illinois, December 10 to 13, one session is to be given over to essays, papers and addresses by students. The Society offers a prize of $15 for the best production on a Horticultural topic by any enrolled student in Illinois, whether in public school, academy, college or university. The student may select any horticultural subject. A second prize of $10 and a third of $5 are offered. Subject matter, treatment and practical value to count eighty points; composition and delivery twenty points. Paper not to exceed five minutes in delivery. Contestants may send their name, post-office address and topic to W. B. Lloyd, Secretary, Kinmundy, Illinois, any time before December 7; after that, address care Beardsley Hotel, Champaign, Ill.

Take up a few plants of parsley and place in pots or boxes in some basement or kitchen window. Parsley will grow with very little light and furnish an abundance of green material which is appreciated in the winter.

You Can Produce pork at 1½c per lb.

in Arkansas and Texas; and with pork bringing 8¢ to 9¢, there's a big margin for money-making; especially when you realize that land which makes big yields of pork-producing crops — corn, peanuts, alfalfa, etc.—can be had in these sections now at $12 to $25 an acre.

[Some stock, Fore's farm, Rison, Ark.]



Thomas Bentley got his start that way—bought 40 acres near Paragould, for only $400 and is making good money from his hogs and cows. His place is worth more than $3000 today. T. B. Fore of Rison, Ark., has lifted a mortgage off a fine 157-acre farm through his profits from hogs, cattle and horses. Mr. Fore raises *all his own feedstuffs*. All along the

Cotton Belt Route in Arkansas and Texas

you'll find many a man who is getting more profit *every year* than his land cost him. Gus Palmer, who lives just below the Arkansas line, near Shreveport, La., sold $2100 of alfalfa from 30 acres—a profit of $70 per acre. J. E. Gandy paid $3000 for an improved farm near Mt. Vernon, Texas; and the local people thought he'd paid too much. Since then he's refused offers of $7500 for his place.

These lands won't stay cheap always. They have already doubled in value since 1905; but even this year you can buy at $12 to $25 per acre, as good land there as you are farming now. And you'd have *every* advantage of schools, churches, close neighbors, good local markets, phones, rural free delivery, etc. This proposition deserves serious thought.

On the 1st and 3rd Tuesdays of each month there are low round trip excursions to Arkansas and Texas via Cotton Belt Route, allowing 25 days' time and free stopovers. Go on the *next* one.

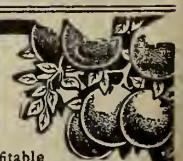
Get our free books!

Written by a farm man who knows farming from A to Z. He traveled over thousands of miles in these sections to learn where the *real* farm opportunities were—the kind he knew *you* would grasp if you saw them. He tells you, in plain words, all about them. 100 pages and farm pictures. Send a postal today for your *free* copies.

E. W. LaBEAUME
General Passenger Agent
1450 Pierce Bldg., St. Louis

COTTON BELT ROUTE

BIG PROFITS

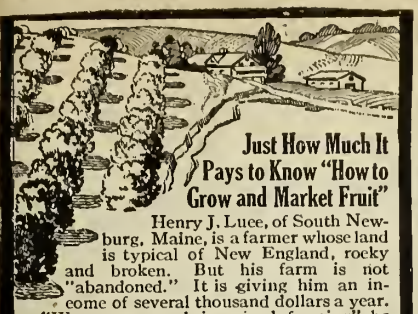


No doubt about the profitable returns from Early Vegetables, Oranges, Grape Fruit, Celery and Sugar Cane in the famous Manatee Country, Brooksville and Annuttalagga, Hammock Area. Lands can be secured reasonably yielding several crops annually. Delightful and healthful climate. Water plentiful. Good schools and churches. Quick transportation to big markets. Write for descriptive booklets.

J. A. PRIDE, *Gen. Ind. Agt.*
Seaboard Air Line Railway,
Suite 367 NORFOLK, VA.

IN THE SOUTH

Coyne Brothers Handle All Kinds of Fruit and Produce
160 Water Street, Chicago, Ill.



Just How Much It Pays to Know "How to Grow and Market Fruit"

Henry J. Luce, of South Newburg, Maine, is a farmer whose land is typical of New England, rocky and broken. But his farm is not "abandoned." It is giving him an income of several thousand dollars a year.

"We are engaged in mixed farming" he says, "but our leader is apples. We get our profit and enjoyment from raising apples. We have forty acres in trees. I would not sell some acres for $1,000 each, for they net $500 a year."

This is the way one successful man talks. You may make your farm yield a profit of three or four thousand dollars a year, if you make your main work the growing and marketing of fruit by modern, scientific methods.

It is possible to make more money out of fruit now than you could in the past, because of greater knowledge of how to produce perfect fruit regularly every year, and how to pack it and sell it for highly profitable prices.

To be alert to the best practices, to understand the improved methods that make the money, read "How to Grow and Market Fruit"—the best guidebook published. Price 50 cts., which is rebated on a $5 order for trees.

Ask for "The How and Why of Shade Trees and Evergreens"—a 64-page book, free. Our complete catalog of the best fruit trees grown in America also sent you free. Come to Berlin and see for yourself how we grow trees. Eastern Shore Farms for sale.

HARRISON'S NURSERIES, Atlantic Avenue, Berlin, Maryland

Spray Trees Now

WHILE YOU'VE TIME TO DO A THOROUGH JOB. DON'T PUT OFF TILL BUSY SPRING. USE

Target Brand Scale Destroyer

A miscible oil that destroys San Jose and all other scales, also kills larvae and eggs of the leaf roller. It spreads on contact with the tree, thus covering every part, even those missed by the direct spray. Endorsed by every experiment station where tested. **Agents Wanted. Write for Circular.**

HORTICULTURAL CHEMICAL COMPANY
135 South Fourth St. Philadelphia.

Spray with SAN-U-ZAY Scale OIL

Ten Million Dollars is the estimated damage done last year's fruit crop by the dreaded San Jose Scale—an unnecessary waste to be sure, resulting in great measure from the use of inefficient sprays.

Here in his own words is how one progressive grower turned his share of this great annual loss into profit:

"'San-U-Zay' is an absolute success, and I cannot find a living Scale on my trees. My orchard was infested with the Scale to a finish had I not obtained your Oil, though I used Lime-Sulphur until I got tired of it. W. F. DeVilbiss, Fort Wayne, Ind."

Hundreds of the country's best growers have been using "San-U-Zay" for years. Our new free book "Better Spraying" tells why. Get facts also about our "Misty-Make" Sprayers. Write to-day to Dept. C.

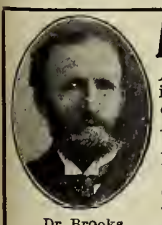
The Gardiner-Johns Company
210 Livingston Bldg., Rochester, N. Y.

ENTOMOID

THE UNIVERSAL SPRAY

for scale, all soft-bodied and sucking insects, is the spray that "Delivers the Fruit" in quality and quantity as no other spray can. It is a fungicide, too. Highest effectiveness and lowest price are its great points. Sample and prices on request.

Entomoid Chemical Co., Woonsocket, R. I.



Dr. Brooks

AGRICULTURE

A course of forty lessons in Soils, Tillage, Fertilizers, Farm Crops and Animal Husbandry under DR. WILLIAM P. BROOKS of the Massachusetts Agricultural College. Courses in Horticulture, Floriculture, Landscape Gardening, Forestry, Poultry Culture, Farm Accounting, etc., under able professors in leading colleges. We have made a specialty of the teaching of Agriculture and related branches by correspondence for many years.

250-page catalogue free. Write today.

The Home Correspondence School
Dept. 59, Springfield, Mass.

DIRT BANDS Have all the advantages of paper pots and none of the disadvantages. They are the best thing for early vegetables ever offered the grower and will increase your profits $50 to $100 an acre. Let us show you.

P. B. CROSBY & SON
BALTIMORE, - - - - MARYLAND

Successful Fight With Insects

Wonderful Results From Thorough Spraying

I believe every one of your readers will be interested in our experience in ridding our thirty-acre orchard of worms, and producing great crops of apples. We had always sprayed by hand, but by 1904 the worms, especially the canker worms, were so bad that the trees were bare and brown in June and put forth new leaves in July. As everyone knows, this threatened the orchard with destruction. In fact, we did lose one tree and some of our Rome Beauties got such a setback that they are only just recovering. Then we got a gasoline sprayer, and about that time I read Professor Melander's splendid article in The Fruit-Grower. Following his advice to the letter, we sprayed as we had never sprayed before.

Not satisfied with our work, we got another gasoline power sprayer and used both outfits, part of the time in our own orchard, and part in those of our neighbors. I studied bulletins, I caught the worms, bred them in cages to determine when successive sprayings should be timed. I got the best nozzles, apparatus of all kinds, and the best poisons that experience could suggest. To what end? The result is that this year I saw only one canker worm and one green fruit worm in our orchards. We have about one codling worm in 1,000 apples, I suppose; certainly not more than that. Case-bearers, bud moths, leaf rollers are not to be found at all. In fact, we have had what would be called a perfect success in exterminating worms, or as near perfection as anything comes in this world. As for web worms and tent caterpillars, we went over the orchard and over the whole farm with the farm wagon and gathered the nests by the wagon load and made a bonfire of them, and now they, too, are exterminated.

The next great problem was to restore the soil fertility depleted by a century of farming before the orchard had been planted. Accordingly, following the advice of the Pennsylvania Experiment Station, carloads of chemicals were bought, mixed on the barn floor, and broadcasted on the whole surface of the orchard, not merely under the trees. Rock phosphate, sometimes called "floats," was bought by the carload in Tennessee, the rest in Baltimore. The following is our formula for home-mixing one ton:

CHEMICALS.	Cost, per ton.	Weight of one bag.	No. bags for one mixing.	Wt. each chemical for 1 mixing.
Nitrate of soda....	$48.80	200	2	400
Floats	8.00	150	8	1,200
Muriate of Potash	37.80	200	2	400
Total				2,000

We put the floats on the floor in a layer, empty the soda and potash beside it, smash the lumps in them with a pestle made of a scantling shod with iron; spread the soda and potash on the floats, shovel them over three or four times, and we have a ton of high grade fertilizer.

We shovel this ton into twenty bags and we have our fertilizer in 100 pound bags, easy to handle. It is no use to weigh the chemicals, the apples will do the weighing. About 4½ scoop shovelfuls make 100 pounds, so we never weigh the bags, though we have platform scales on the barn floor. We sow 200 pounds of this mixture to the acre in May or June, and 200 more in July. The same mixture is excellent for general farming, but for small grains we omit the nitrate when seeding and apply it broadcast by hand after the plants have rooted to avoid the loss of the nitrate when there are no roots in the soil to absorb it.

The results of fertilizing the orchard are wonderful, and almost beyond belief. The apples are hung from the trees in ropes and strings and we had in the neighborhood of 5,000 bushels. I had men thinning the surplus apples to prevent overbearing and breaking down. In fact, I was overwhelmed with the size of the crop and with the impossibility of getting thinners to thin the apples and to prevent the trees from breaking down. I would have put fifty men at work at thinning if I could have got them.

J. C. M. JOHNSTON,
New Wilmington, Pa.

The Univbersity Cannery

Realizing that tons and tons of fruits and vegetables go to waste on the farms annually in the state of Idaho, and believing that this waste could be utilized by canning and sold at a profit, the University of Idaho recently installed a complete canning factory to demonstrate this point. It will be the object of the University to show just how profitable a home canning factory can be made in connection with fruit and vegetable growing on the farm. If the undertaking proves a success, it will mean a saving of thousands of dollars to the farmers. How much better it would be for the grower to utilize his by-products in this way than to sell the raw materials at loss on a glutted market. Some might hesitate, fearing that the canned products would not sell. But the grower need have no fear along this line for he will find that the longer he follows this business the better will be the market, and if he takes pains he can produce an article that will sell as readily as that put out by the large canning plants. A plant, similar to the one installed by the University, having a capacity of 500 to 1,000 cans daily can be secured at a nominal figure. The installation of this outfit will enable the horticultural department to offer a complete course in canning this fall. Each student will have an opportunity to become familiar with modern factory equipment and methods. He will be required to learn the methods of handling the raw material, grading, washing, preparing and blanching the fruits and vegetables, filling the cans, exhausting, capping, testing for leaks, processing and cooling. Detailed instructions will be given as to how the various products such as apples, pears, peaches, plums, beans, tomatoes, beets, etc., are handled.

While the University cannery has only been in operation a short time, several varieties of apples, pears, plums, peaches, cherries and beans have been canned. These products will be exhibited at the various fairs this fall.

C. C. VINCENT.

Protect the Pigs.

Warm nights seldom occur in October. The stockman should bear this in mind and provide adequate shelter for his young stock, especially swine. Pigs have no coats of fur to keep out the cold, so need some additional attention as cold weather approaches.

Most pigs have been sleeping on the ground without bedding. This was all right during the summer, but now in order to keep them comfortable at night, they should have access to shelter of some sort. If they are not allowed the run of a straw stack or straw shed or a well bedded portion of a hog house, enough straw should be hauled into the feed lot to bed all hogs thoroughly. Such a bed would be greatly appreciated by the pigs. They will in turn repay the owner many fold for his time and trouble by additional gains.

W. F. HAGERMAN.

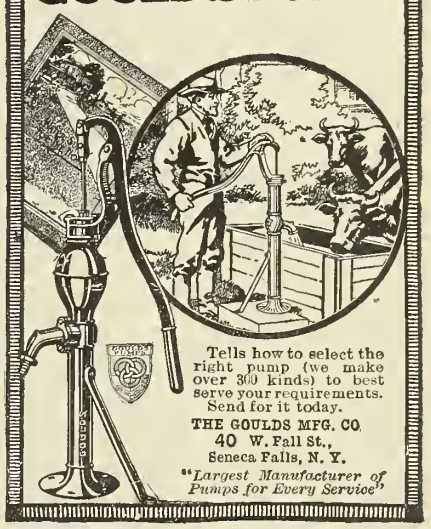
MYERS BUCKET BARREL or POWER SPRAY PUMPS

FOR FALL SPRAYING

Are you going to Spray This Fall? If so, results are more certain if you use a MYERS OUTFIT—Bucket, Barrel or Power. Up-to-date dealers are glad to supply our Catalog, or we will mail you one direct. Better ask or write for it immediately—it's time to Spray.

F. E. MYERS & BRO.
160 Orange Street, Ashland, Ohio
ASHLAND Pump and Hay Tool Works

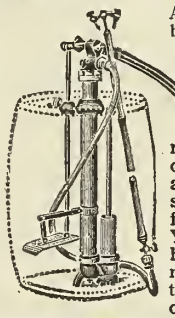
You Need This
FREE Water Supply Book
It tells how to solve your water problem; also about the service you get from
GOULDS RELIABLE PUMPS



Tells how to select the right pump (we make over 300 kinds) to best serve your requirements. Send for it today.

THE GOULDS MFG. CO.
40 W. Fall St.,
Seneca Falls, N. Y.
"Largest Manufacturer of Pumps for Every Service"

GET THE BEST



A Good Spray Pump earns big profits and lasts for years.

THE ECLIPSE

is a good pump. As practical fruit growers we were using common sprayers in our own orchards—found their defects and invented the Eclipse. Its success forced us to manufacturing on a large scale. You take no chances. We have done all the experimenting! Large, fully illustrated Catalog and Treatise on spraying **Free.**

MORRILL & MORLEY MFG. CO., Box 7, Benton Harbor, Mich

NATURAL FINE-Ground PHOSPHATE

THE RELIABLE LAND BUILDER

In Rotating Your Crops don't fail to apply Natural Fine-Ground Phosphate when breaking your clover, grass or grain stubble sods. This is the best time to apply it to the soil direct. Address,

The right amount applied just then, at not over $1.00 per acre cost per crop, will increase each crop grown during the rotation from 50 to 75%. Write for free Booklet, telling all about it.

THE FARMERS GROUND ROCK PHOSPHATE CO. MT. PLEASANT TENNESSEE

BLACK LOCUST, CATALPA

Speciosa, Box Elder, Sycamore, Ash, Elm, Red Bud, Sweet Gum, Mulberry, Walnuts, Maples, Poplars, California Privet, Deutzia, Spirea. Trees, Shrubs, Seeds, etc., at lowest prices.

Send for wholesale list.

FOREST NURSERY COMPANY
McMinnville Tennessee

With Our Home Folks

Conducted by Mrs. Ruth Motherby. Address all Communications to Home Editor, Fruit-Grower and Farmer

Home-made Garnitures.

There has never been a time when women who do fancywork devoted so much attention to the making of trimmings for their own garments. While they have always made trimmings for underwear, they are now spending even more time making garnitures for their new gowns, and no form of fancywork could be more fascinating than this.

All summer we have seen wash gowns trimmed with crochet and tatting of home manufacture. This was made with the various cotton threads, both white and colored, sold for the purpose, as well as from linen—the ecru linens being most popular. Now, with the coming of cooler weather, silk or heavy mercerized threads are being used for garnitures for the new fall gowns.

An old-rose gown, just finished, is elaborately and beautifully trimmed with black silk tatting, in which the old-fashioned plain insertion of two rows of loops, forms a prominent part. This insertion is used on the waist and sleeves, also on the upper part of the skirt, where it outlines panniers. The insertion is sewed on the gown, after it has been carefully fitted, and then the cloth is cut away from underneath it.

Fancy waists, matching the skirt in color and shade, are worn with the nicest street suits, and this gives great opportunities for the use of the home-made garnitures. One lady has completed a yoke and sleeves of crochet for her new gown that would easily bring fifty dollars in a New York market, and she says it has been simply a pleasure to do it and that she has hardly missed the time at all, for the work was done during odd moments when she would have been doing some kind of fancywork anyhow. Although she speaks of it as a yoke, it is really an entire waist, for it is deep enough to meet the high-waisted skirt of her gown. It will be made up over a lining of messaline silk.

All during the summer great use has been made of silk flowers as dress trimming, and these are easily made at home. One ingenious lady has just completed a yoke and sleeves for her new afternoon gown that is decidedly unique and very beautiful, and yet which is not beyond the powers of the average woman who does fancy work. The new afternoon gown is of black messaline silk, made over from a rather full gown worn two years ago. By working in a few pleats in odd places, she managed to get a very up-to-date draped skirt from the best portions of the old gown, and only needed a new waist to be quite in style. An old party gown of black net, made with a train, furnished the material, for she found enough good pieces for both lining and outside portions of the new waist. Then she made scarlet poppies of messaline silk, arranging them in flat, conventionalized form, and taking care to have them of several different sizes. These were arranged on the net lining and fastened securely by invisible stitches; then the cover of net was placed over them. As I have said, the effect is both unique and beautiful, yet the idea could be worked out in many ways by the inventive home dressmaker.

Did I tell you in my last letter of the woman who attended a department store sale of table linen and bought a number of doilies and centerpieces edged with battenburg lace? She used this, under fine white lawn, for a waist to be worn with a white serge suit, and it was very effective. You see, rather common patterns in battenburg look well under net or lawn or any of the sheer materials. Now, she is having this battenburg waist dyed to match her new suit, and will wear it under chiffon of the same shade.

Some ingenious sisters are making very pretty waists for evening wear of fine white net over a coarse all-over net showing a bold outline. The coarse net is cut and carefully fitted, then the fine net is placed over it and very closely basted; then the worker goes all over it, embroidering portions of the pattern showing through, using silk or mercerized embroidery cotton for the purpose. I saw one entire waist done in Oriental shades, the different colors being set off with touches of black. The effect is surprisingly good. She has a waist that can be worn with any skirt, and not one woman in ten can guess what it is made of unless she has been initiated into this new fad in fancywork.

Old-fashioned netting is again brought into use by the present craze for home-made garnitures, and in my opinion this is really the most effective of all trimmings for fall goods. This work was very popular forty years ago, and it is easily learned and quickly done; but one must have certain implements—most of which can be fashioned at home. A book of instructions is necessary, but I think one could be procured through dealers in art materials. Our grandmothers used cotton or linen threads for this work, which was usually considered best suited to tidies; but now it is made of silks and mercerized threads in colors, and used in all manner of effective ways on the new gown. Yesterday, I saw a hat completely covered with this netting, and it attracted any amount of attention from those who are looking for something uncommon and pretty.

The old-fashioned "hair-pin" lace is another of the old forms of fancywork that have been revived for the modern gown, and it fills its new sphere surprisingly well. In fact, if the modern home dressmaker has a good eye for line and color, she may use any kind of home-made garniture on her gown, and be comfortable in the thought that she is right in style, and in the knowledge that someone is studying her gown with a view to copying it! MARIE SIAS.

Fashion Hints.

Among the most popular materials for the new tailored suit we find wool eponge, zibeline, diagonal serge, wool poplin and uncut velvet. For hard wear, choose diagonal serge, whipcord or wool poplin. For a handsome suit for dressy occasions, choose zibeline or uncut velvet. Use silk in the bodice of the gown intended for hard wear, but use chiffon, crepe meteor, lace or silk marquisette for the more dressy gown.

While plaits are to be seen in the new skirts, they are caught in by tapes on the under side, so as to preserve the slender silhouette. Some of the newer gowns are made on underforms in princess style—the plaits in the overdress being caught down to the lining. No petticoat is worn with these gowns, but fine, wool tights are used for warmth. It is really a very sensible arrangement, for these tights are warmer than two or three petticoats would be.

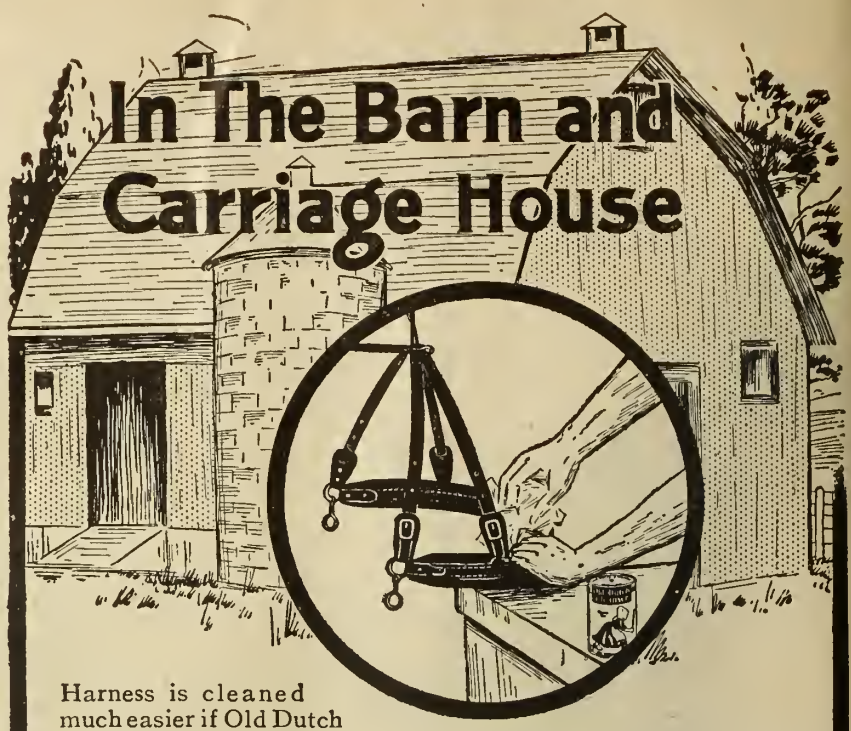
The new jackets are quite long, reaching well below the hips, and many of the newest styles have vests, either real or simulated. When vests are used they should be longer than the coat front, and always of some contrasting material.

Velvet collars and cuffs are seen again. Buttons, as trimmings, are more popular than ever before.

The latest street gowns call for very high collars and long sleeves. Very dressy gowns, or simple gowns intended for evening wear, are made low in the neck, and with short sleeves.

Plain silks are all the rage. Entire costumes are made of them, or plain silks are lavishly trimmed with plaid. If you want to get the girl who is going away to school something new and up-to-date, make her happy with a new gown of plaid silk. One of the latest fashion magazines has this description of a gown lately made for a college girl:

This costume was made with a simple foundation skirt of the solid



Harness is cleaned much easier if Old Dutch Cleanser is sprinkled on cloth or brush. It quickly starts greasy accumulations on saddle, hold-backs and traces.

Mildewed discolorations and stains on carriage tops quickly washed away; grain bins and feed boxes thoroughly cleaned.

Keep a supply of Old Dutch Cleanser in the barn and carriage house for daily use.

Many other uses and full directions on large sifter can, 10c.

Old Dutch Cleanser

The Colorado Midland

Affords the Best Service to

The Fruit Lands and Farming and Grazing Lands of the Western Slope

There are thousands of acres of good lands still uncultivated in the fertile valleys of eastern Utah and western Colorado, and oceans of water in the streams and on the mountain tops. Special rates made for landseekers to go and look at these lands and for settlers. Write us or come in and ask us for information about what has already been done in that section.

MIDLAND ROUTE

E. P. CARR
City Passenger Agent

E. D. WHITLEY
City Ticket Agent

Telephone Main 6280. Seventeenth and California Sts., Denver, Colo.
DINING CARS, PULLMANS AND CHAIR CARS ON ALL TRAINS

SALESMEN Have You a Buggy?

We have a wonderful money-maker for live men—but you must have a rig to handle it. Big sales—big profits—good year 'round. Pleasant, easy, healthy business—just drive around and take orders—best class of farmers and town folks buy—every home needs our goods. Salesmen, Here's REAL CHANCE to cash in on that horse and buggy; $50.00 a week and up. Find out—get our big special offer—Now! Write today for complete facts free. Address **S. D. KRETZER, 2144 DeKalb St., St. Louis, Mo.**
In writing please mention The Fruit-Grower and Farmer.

green with a fifteen-inch finish of the plaid at the foot. Over this was posed a pannier tunic of the plaid, which reached the plaid banding on the foundation skirt. The bodice had a yoke effect of the plaid silk, which was continued at the top only of the sleeves, the under portion of the sleeves and remainder of bodice being of the solid-colored silk. A great square, or rather oblong, lingerie neckpiece covering almost the entire front of the bodice, was worn. A broad crushed girdle of double-faced black satin tied in a bow with long ends, completed this handsome creation. With it was worn a large hat of the sailor type having a round crown, and with a mere wisp of trimming placed directly in the back.

MARIE SIAS.

Unusual Holiday Gifts.

One of the most acceptable gifts I made last Christmas was for a busy mother who has little time to do fancy-work, and whose house full of active children makes it impossible for her to have very dainty things in her home. And this friend was thought of so late in the season that I couldn't do anything for her which would require much time. I presume there are others similarly situated who will be glad to know how I solved the problem.

I found a remnant of heavy, dark grey art linen, one and one-third yards wide and two and a third yards long. The price was eighty-five cents a yard, but, this being a remnant, I got the piece for a dollar. Then I found a lovely piece of striped cretonne, in browns and greens, with touches of dark red. The stripes were four inches wide and very Oriental in design, and when torn apart and stitched on the linen, formed a most effective finish. My piece of linen made one square table cover, one runner for an oblong table, and a sofa pillow. The set of three pieces cost me but little in either time or money, but, when packed in a box, they looked really munificent, and as they were just what my friend needed, they proved, as I have said, the most acceptable Christmas gift I made last year.

This fall I am making a table cover for another friend that has received much praise from all who have seen it. It is for a rather large, round table placed at one end of a living room in English style, and furnished in brown and green. The friend does not do fancywork, and at present has only a little Mexican centerpiece on this table. The cover I am making will give that corner of her room a charming finish, and I know she will be pleased, because I have heard her admire a table cover somewhat similar, made for another friend. I bought round-thread Russian crash for this cover. It is two yards wide and costs two dollars a yard. The table cover is one and one-half yards square, leaving enough of the crash for a gift for someone else; for it is too heavy to be used for a pillow cover.

I had my cover stamped, and am embroidering it with mercerized cotton floss in three shades of green and four shades of brown, the design being picked out with French knots in black. I bought heavy fringe at the upholsterer's which I am having dyed to match the cover, and this will be used as a finish. This cover is rich enough in appearance to fit the finest living room, and when finished will make a handsome Christmas gift.

The remainder of the linen will be used for a traveling apron for another friend who, with her three children, will start soon after the holidays on a long journey to a new home.

Have you seen these traveling aprons? The foundation is made like any apron with rounded corners, but it is almost completely covered with pockets of various shapes and sizes—a pocket for the comb, another for hairbrush, smaller pockets for toothbrushes, tooth powder, soft linen cloths, court plaster, safety pins, hair-curlers, hairpins, needle-book—all the little things, in fact, that are apt to be needed when making a journey. The apron fastens about the waist with a strong band, finished with a good solid button and button-hole. When not in use it is rolled up and takes but little room in a suitcase. It is the handiest thing imaginable for the mother who has small children to dress on a moving train, for everything is right at hand and there is no danger of losing the things that are laid aside for a moment.

Another gift upon which I am at work is a knitted jacket with short sleeves that cover the upper part of the arm where one is apt to feel the cold, but that do not come under the arm where they would be in the way of the woman who sews. This gift is intended for my sewing girl. I cut a pattern, and find no difficulty in widening or narrowing along the edges of my work, as is necessary to make the work fit the pattern. I am using what is known as fairy floss, and am knitting a linen thread in with it to keep the garment from stretching out of shape when finished. It is not difficult to do this work, and I keep it for evenings, when I do not have to strain my eyes. I knit back and forth, plain garter stitch, and shall finish the edges of the garment with a small scallop in crochet. I made one of these jackets for myself more than a year ago, and it has been so satisfactory that I decided it would make a fine gift for this friend.

I do not make gifts to all my friends every year; instead, I make a list of those whom I wish particularly to remember this year, and then try to select gifts that I feel sure are appropriate and will be liked. My friends know this, and feel that when they do get a gift from me it means that I really thought of them and tried to please them. And they also know that I do not give because I have received gifts from them, or expect to; and that I do not care for "duty" gifts from others. I have one friend who sent me a beautiful gift, five years ago, and I've never remembered her since then, except with a Christmas card, because I never happened to think of anything to do that I thought she would appreciate. She has about everything that money can buy. But this Christmas she will get a gift from me, for I've discovered what she can use!

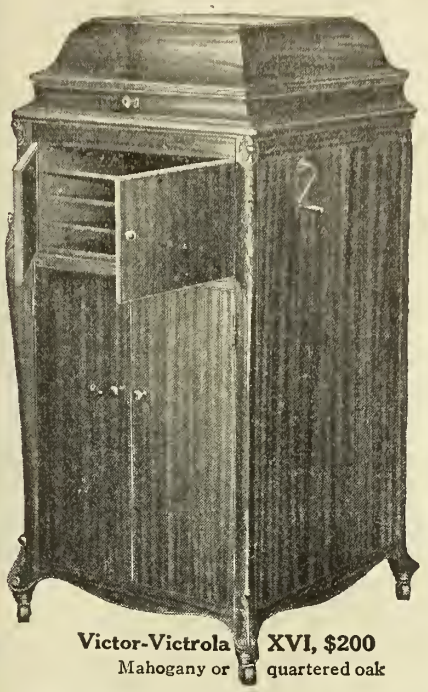
I make a beautiful crocheted lace in the heaviest linen thread. The pattern is in squares, two and one-half inches square when finished. I sew these squares together, making a very beautiful insertion for curtains. I have made enough of this insertion, with border to match, for curtains for her bedroom windows. I couldn't buy anything handsomer, or anything like it, and this will be a complete surprise to her, for she'll never dream of getting a gift from me. She thinks I can't afford it, and I couldn't if I had to spend what this gift is worth. But, like most of my gifts, this is a labor of love.

HORTENSE W. BROWN.

The Young Couple's Opportunity.

We have had a number of hard-time stories, and they have been good reading—more especially to us old people to whom they have recalled experiences very similar, only "more so." But if I remember correctly, these stories were written with a

Victor-Victrola



Victor-Victrola XVI, $200
Mahogany or quartered oak

The complete line of Victor-Victrolas

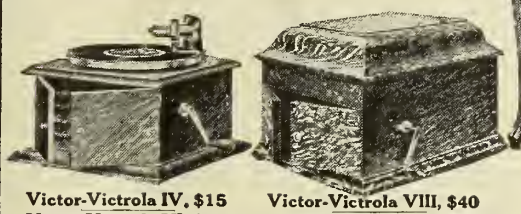
Each year has witnessed important improvements in the development of these wonderful musical instruments, and with the complete line now on exhibition and sale at all Victor dealers, it is certainly well worth your time to at least see and hear them. In no other way can you fully inform yourself so easily.

Any Victor dealer in any city in the world will gladly play any music you wish to hear and demonstrate to you the Victor-Victrola. Write to us for catalogs.

Victor Talking Machine Co., 23d and Cooper Sts., Camden, N. J.
Berliner Gramophone Co., Montreal, Canadian Distributors

The instrument by which the value of all musical instruments is measured.

Always use Victor Machines with Victor Records and Victor Needles—*the combination.* There is no other way to get the unequaled Victor tone.



Victor-Victrola IV, $15
Victor-Victrola VI, $25

Victor-Victrola VIII, $40
Victor-Victrola IX, $50

Victor-Victrola X $75

Victor-Victrola XI $100

Victor-Victrola XIV $150

New Victor Records are on sale at all dealers on the 28th of each month

This Book Helps You

Make Your Hens Lay

Send for and read our book on feeding raw bone. Rich in protein and all other egg elements. Get twice the eggs, more fertile eggs, vigorous chicks, earlier broilers, heavier fowls, bigger profits.

MANN'S LATEST MODEL BONE CUTTER **10 DAYS' FREE TRIAL** No money in advance

Makes bone-cutting simple, easy, rapid. Try it and see. Open hopper, automatic feed. Cuts all bone with adhering meat and gristle. Never clogs. Don't buy until you try. Book free. F. W. MANN CO., Box 109, Milford, Mass.

HUMPHREYIZE

Make your hens lay 150 to 250 eggs a year. Halve the cost of feed. 10 or more hens should mean—Humphreyize. "The Golden Egg" free and a Humphrey Bone Cutter on free trial.
HUMPHREY, Union St. Factory, Joliet, Ill.

Christmas Surprise Box FREE

I will distribute hundreds of Christmas Surprise Boxes the next 30 days. I have one for you. Send me three 2-cent stamps to cover mailing, and I will send you at once 10 beautiful highest grade Christmas postcards like illustration and tell you how to get your Surprise Box FREE. Write today. E. T. MEREDITH.
120 Success Building. Des Moines, Iowa

view to inspiring our young people. I wonder if they have done so. Will any young couple feel more venturesome about embarking on the matrimonial sea with a comparatively empty pocketbook after having read these stories? I doubt it, for I'm rather pessimistic concerning the modern young person who has been brought up to expect a great deal as a reward for a very little effort. And even if the young couple is willing to start as father and mother did, can they get father's and mother's consent? I doubt that, too, knowing how silly modern parents are concerning their progeny! Yet there are really better opportunities today for the penniless young couple than ever there has been, provided they are willing to work.

It is becoming the fashion to hire married men on a farm. This paper has been talking that up for some time—and nothing could be wiser.

This is the young couple's opportunity. In many places, really comfortable little homes are provided for the help, and there are chances for the young wife to earn something for herself by helping in the house on rush occasions. A little garden usually goes with the workman's home, and there are opportunities to buy fruit for almost nothing, or to earn it by picking it on shares. There are a hundred chances for the young couple to get a start in life in this way to one in the city. They can save more money by working on a farm for thirty or forty dollars a month than by working in the city for a hundred dollars. I know this is a fact.

The young couple that starts on nothing should be determined to get along on next to nothing for awhile. They should avoid debt as they would the plague. I've heard young married men boast of their good business standing; their credit was good! To prove it, they opened charge accounts wherever they wish to buy anything. Nothing could be more suicidal. There are few who can save money in that way. A charge account is an inducement to extravagance. I once had a talk with a grocer on this subject.

"Of course," he said, "dealers are anxious to open charge accounts with reliable people, for we know they will buy more than they do when they pay cash for all they get. When the purse is growing light, with those who pay as they go, they begin to economize. If a woman has just six dollars with which to get through the week, she will manage to make it do; but with a charge account she gets what she thinks she needs without realizing how fast the bill is running up."

I know workmen in the city who say that they save a great deal more when they get their pay once a week than they do when it comes only once a month, because with the weekly salary they pay as they go, while the monthly salary is sure to call for a book account. I don't know why it should; but then I've never lived in a city. I do know a man can make his salary stretch in the country, even when he gets it less frequently than once a month.

If I were a young man, and could find a nice girl who was willing to work half as hard as her mother had to, I'd marry her, if I could, and as quickly as I could, for I believe in early marriages. I'd find a farmer who had made provisions for married help, and begin housekeeping. And inside of five years I'd have a little farm of my own and be making plans for a small house for some other young couple who had sense enough to begin life in the same way.

GRANDPA GRUNT.

Thanksgiving.

We have been told that the real old-fashioned Thanksgiving was becoming obsolete. Don't you believe it. What would you think of a governor who would neglect to write a Thanksgiving Proclamation? Well, that is exactly what every right-minded person thinks of the housewife who neglects to provide some kind of Thanksgiving entertainment. Pity, isn't it, if we can't find time for one day of thanksgiving in a year—a real jolly "Thank you," that makes even the most miserly old pessimist wonder if he isn't missing something. I believe in giving thanks every day for blessings received—with something extra on Sunday, when there seems to be more time to devote to it; and I try to do that; but I want to get in my Thanksgiving Day expression of gratitude just the same. And in order to feel that I've done the subject justice in the good, old-fashioned way, I don't object to a little groaning afterward!

I'm not so very particular about my Thanksgiving menu, except that I must insist upon turkey with cranberry sauce, mince pie, nuts, coffee and sweet cider. Of course, I have other things, but they are apt to vary with the years. The turkey, cranberry sauce, mince pie and cider are as necessary to the correct observation of the day, in my estimation, as the governor's proclamation.

Some people insist upon soup as a part of the Thanksgiving dinner. That proves quite conclusively that they are not descended from New England parentage. The first Thanksgiving dinners did not have soup or oysters or ice cream or grape fruit salad or any of the "au gratin" dishes. Why should we have them now? They are not in keeping with the idea, which is to preserve this holiday in its nice, cheery, hospitable, old-fashioned simplicity. There should be plenty of everything; but the dinner should not take so long to serve that the children will become tired. And who wants to spend the entire day at the table? There are other interesting things to do on a holiday like this, when there is sure to be a family gathering of some sort.

When baking your turkey, be sure to put it into the roasting pan breast downward instead of having it lie on its back. You will find that the white meat is much more juicy as well as sweeter when cooked in this way.

When selecting the vegetables to be served, choose such as our forefathers would have been likely to serve. Anyone can see that canned corn or canned asparagus tips would not be in keeping with the day, whereas onions—say, did you ever bake onions to serve with your turkey? No? Just try it once. The large Bermuda onions are best for this purpose.

Remove the outer skin and boil the onions in boiling salted water and milk until tender. Place in a buttered pan, put a little butter on the top, add a little fresh milk, and bake in a moderate oven until brown.

And did you ever make cider jelly for your tart shells? I'm not sure that my great great grandmother ever thought of it, but I know my own dear grandmother made cider jelly tarts and my mouth waters now when I think of them. This jelly is made by boiling a quart of cider with a stick of cinnamon, the juice of a lemon and a small amount of sugar, depending on the sweetness of the cider. Dissolve a tablespoonful of gelatin in cold water and pour the hot cider over it, strain into a mold and allow it to stand over night.

I presume there is no one in this age of moderate priced cook-books who would care for my recipes for mince meat, fruit cake, sage dressing for the turkey, etc., but I have them nicely copied in a blank book where my choicest recipes have been copied for many years. I couldn't cook a Thanksgiving dinner that would seem a bit like the real thing if I used any other recipes!

Do you enjoy decorating the house and the dining table for Thanksgiving? I do. I like to have some of the young people come a day or two before the others, and then I solemnly assure them that I put the task of decorating into their hands, for I'm too busy to think anything about it. Of course, that's only a ruse—to give them an excuse to get out of doors together! Why, I could no more keep out of the fun of decorating than I could get up a Thanksgiving dinner without a turkey!

We never use hot-house flowers for Thanksgiving decoration. They seem out of place. We believe that on that day native flora should be used—hardy out-door ferns, bitter-sweet berries, the scarlet "firebush" and if anything more is desired, chrysanthemums may have a place.

I've told you before, but may as well say it again, that the yellow squash, or the pie pumpkin, provides a most satisfactory decoration for your table.

I have a clipping taken from some magazine or paper a year ago that will help me plan my decorations this year. I can't tell where it was printed, but the writer signs herself Mary Dawson, and I want to say right here, that I'm sure Mary's grandparents and mine must have been neighbors. Here are a few of her ideas:

"A fine, long pumpkin which tilted up naturally at the stem end was hollowed out to represent a cornucopia. Swung from the chandelier with green ribbon and filled with different colored fruits, rosy apples, grapes, purple and white, etc., it hung above the parlor table, making a charming decoration.

For the centerpiece in the dining room another fruit was hollowed out to form a ship (the Mayflower) and was fitted out with a white silk sail having the name and date painted on it. Of course, a ship-like shape was necessary, but this was easily discovered among the Autumn stores. The Mayflower was filled also with the garnered fruits of earth and was set a-sailing upon a sea of green pine boughs, which occupied the center of

UTAH

THE WAY TO REACH the Fertile Irrigated Valleys of

Colorado, Utah *and* New Mexico The Cream of the United States

IS BY WAY OF

COLORADO

The Denver & Rio Grande Railroad

"The Scenic Line of the World"

NEW MEXICO

Valleys in COLORADO	Gunnison	Valleys in UTAH	Gunnison
Arkansas	Uncompahgre	Green River	Uintah Basin
Animas	North Fork	Price River	Valleys in NEW MEXICO
Eagle River	Shenandoah	Strawberry	San Juan
Roaring Fork	Paradox	Utah	Chama
Grand River	Montezuma	San Pete	Espanola
	San Luis		

CHOICE OF TWO SEPARATE AND DISTINCT ROUTES TO THE WESTERN SLOPE

Special Rates for the Homeseeker and Settler via RIO GRANDE to All Points in the above mentioned sections. For free descriptive booklets, folders, etc., apply to Frank A. Wadleigh, General Passenger Agent, Denver, Colorado.

IRRIGATED LANDS

The Perfect Burner

NO SMOKE—NO ODOR

This ingeniously contrived mantel attachment transforms the weak, reddish flame of the ordinary burner into a white dazzling light. Many times more powerful and clear and gives as much light as three times ordinary lamps. Relieves all eye-strain, so common when poor lights are used. Nothing better for all-night use. Every burner guaranteed. Inquire of your dealer or send us 20c and we will mail you burner complete for a No. 1 or No. 2 lamp, or No. 2 cold-blast lantern. AGENTS WANTED.

Perfect Burner Company
462 Spitzer Bldg. TOLEDO, OHIO

In writing please mention The Fruit-Grower and Farmer.

Make $30 to $60 Weekly

selling our new and unequaled portable gasoline table and hanging lamp for lighting city and rural homes, stores, halls, churches. Most powerful light known. Absolutely safe.

WE LOAN YOU SAMPLE

More brilliant and many times cheaper than gas or electricity. Guaranteed five years. Everyone a possible customer. No experience necessary. Large commissions. Exclusive territory free. Write today.

SUNSHINE SAFETY LAMP CO.
235 Factory Bldg., Kansas City, Mo.

Mention The Fruit-Grower and Farmer when writing.

BETTER LIGHT

from your kerosene (coal oil) lamps and lanterns than from electricity or gas. Our great WHITE FLAME BURNER fits any common lamp and gives a soft white light equal to three ordinary lamps. NO MANTLE TO BREAK. Nothing to get out of order. Safe and Reliable. Delights every user. AGENTS make $5 to $15 daily. Everybody wants them. Write quick for particulars and territory. Beware of imitations. Complete sample postpaid 35 cts., stamps or coin, 3 for $1. Money back if not satisfactory.

White Flame Light Co. 33 Clark Blk., Grand Rapids, Mich.

PATENTS THAT PROTECT AND PAY
Send Sketch or Model for Search.
Books, Advice and Searches FREE
WATSON E. COLEMAN,
Patent Lawyer. Washington, D. C.

the table, the ship being elevated above the waves by means of a pasteboard box which the green concealed.

"The dining-room was hung with strings of cranberries, red peppers, dried onions and other Autumn products, which were interwoven by the clever young women of the family into what was really a charming decoration despite its inexpensiveness.

"Small muskmelons, cut with handles to form little baskets and lined with tin foil and placed at regular intervals on the long table, held the salted nuts, other relishes and bonbons."

Are you weary of my oft-repeated suggestion that, to make any holiday really ideal we must share our joy with someone less favored? We can't know real happiness unless we know the joy that comes with making others happy. If we are truly thankful for our blessings, we can prove it by giving someone else something for which to be thankful.

RUTH MOTHERBY.

Thanksgiving Fun.

In country homes where rooms are small, where dancing is not allowed and cards are forbidden, it often becomes a serious question as to how to entertain one's guests. I have noticed that my guests seem to enjoy themselves most when given something to do that calls for activity. And this is especially true after having partaken of a hearty Thanksgiving dinner.

We have a glassed-in porch that is comfortable during the middle of the day even when the weather is quite cold, and I usually send my guests out to play on this porch while the dinner dishes are being cleared away. We have a bean-bag game that is very popular. Heavy canvas, containing pockets, is stretched on a three-cornered wooden frame, each side of which measures three feet. This frame stands on pegs that raise it about eight inches from the floor on one side and four inches at the point in front. There are three pockets in the upper row, two in the next, and one in the lower point of the frame, which is in front. Each pocket bears a number. There are ten bean bags, made of strong canvas and partially filled with beans. The players stand a dozen feet from the frame and try to throw the bags into the pockets. When a player has thrown all ten bags, he adds together the number of the pockets containing bags, and the sum is set down to his credit on a blackboard provided for the purpose. Usually, two armies are formed. Captains are selected, who choose sides as they do in spelling school, and one side endeavors to make a bigger score than the opposing side. The children can take part in this game with their elders, making it fine for family reunions.

We also have a game that we call "wall quoits," that we play in the house when the porch is too cold for the purpose. We procured a smooth, rather thin board which we sawed into two parts and fastened together by means of cleats on the underside, making a surface three feet wide by four feet long. We screwed a number of clothes hooks into this board, using those of different shapes and sizes, and painting numbers under each. We tried the board several times before painting the number upon it, so as to give the highest number to the hook most difficult to hang a ring upon. We have ten rings cut from heavy sole-leather. The idea is to try to throw the rings from a distance so that they will hang on the clothes hooks. We play the game very much as we do the game of bean bags.

A simple little game that fills in a half-hour very acceptably is called "What are you thankful for?" The players are seated about the room, and one is selected as "it." "It" goes to each in turn and asks: "What are you thankful for?" then taps the floor five times with a cane. If the person does not reply before the fifth tap, he changes places with "It." Now, that looks easy, but it is not, and for this reason: The first person questioned must be thankful for something that begins with A. Apples, ambition, apron, Alice, adversity would all be good replies. The next person questioned must be thankful for something beginning with B; the third for something beginning with C; and so on through the alphabet. Try it, if you fancy it would be too easy to be amusing, and you'll find that some of the reasons given for thankfulness will be too mirth-provoking for words. When "It" has managed to secure a successor, and the questions begin again, the replies must go on with the alphabet, as if the first questioner were still at work.

Another interesting diversion consists of telegram writing, and this is also a strictly Thanksgiving game. The general question is asked: "Why are you thankful? Reply by wire." The difficulty lies in the rule that the words making up a telegram must begin with letters that come in regular alphabetical order. The writer may begin where he pleases, but if his first word begins with G, the next must begin with H, the third with I, and so on. One telegram read: "Got Henry in jeopardy," which, as you will perceive, brought the initial letters in their order; and it was particularly interesting to those present, for the writer really had Henry in a tight place through the working out of a practical joke. When the telegrams were read, they were voted upon, prizes having been offered for those that were considered best. The prizes consisted of small turkeys of papier mache filled with sweet-meats.

MARIE SIAS.

Twenty-nine Hens Passed 200 Egg Mark.

We have arrived at the last month of the first year in the National Egg Laying Contest at Mountain Grove, Mo. The year closes October 31st and no variety is yet far enough in the lead to claim the honors for the year. The second contest begins November 15th, and so much interest is being taken in this contest that all pens were filled nearly two months in advance of that date.

There was a great decrease in the number of eggs laid during the month of September, due principally to the moult. Many hens are almost entirely naked and are sorry looking specimens. Many others have finished putting on their winter coats and have begun laying again. But the record of every pen has been affected to a great degree by the moult this month. Some hens have laid right through the moult, but they are the exception. Many of the best layers have moulted but very little, and the best layer, No. 717, has not even started to moult on the last day of September. This would indicate that as a rule the best layers do not moult until late in the season. Instead of taking time, feed and energy in building up and putting on a beautiful coat of feathers, they use all their feed and energy in manufacturing large numbers of eggs.

Four Breeds in Lead.

The best record for September was made by pen No. 33, S. S. Hamburgs, which laid ninety-seven eggs. Pen No. 52, White Wyandottes, was second with ninety-four eggs for the month, and Pen No. 40, Black Minorcas, was third. The total number of eggs laid by all pens for September was 5,716 which makes a grand total of 84,011 eggs to October first.

Seventeen pens have laid more than 800 eggs in eleven months.

The best record made by a pen of Indian Runner ducks is pen No. 129, laying 647 eggs to date.

The R. C. Reds still lead by fifteen eggs, but the White Leghorns and White Wyandottes are both gaining on the Reds and stand a good chance to pass them before the contest closes on October 31st. The race for first place has practically narrowed down to the Barred Rocks, White Leghorns, White Wyandottes and R. C. Reds.

Twenty-nine hens have laid more than 200 eggs in eleven months. The best individual record so far has been made by White Plymouth Rock hen No. 717, Lady Showyou. No other hen stands a chance to equal her remarkable record unless she should die, and even then, hens nearest her would have to lay practically every remaining day. She did not lay as many eggs this month as usual, but added twenty-three for the month, making her total for eleven months 260 eggs. She has thirty-one days yet in October to complete her year's record. If she does not moult, and lays even half the days in the month, she will have made a record equaled by few hens. She has a chance to make a new world's record, but we are pleased and satisfied, even if she does not lay another egg.

Begin Breeding Experiment

Twenty varieties of poultry have been entered in the second contest. Each variety is represented by thirty hens, making 600 hens in all. These pens come from England, Canada and the United States. An additional 100 hens will be used on the outside to try out a breeding and a feeding experiment along with the regular contest, the hens being trap-nested, records kept and the reports made each month. For this experiment, one contestant, from California, sends one pen of hens which he claims to have been so bred that he guarantees them to average 220 eggs each if no deaths or sickness takes place in this pen. He is to also send two males, one bred along the same lines as these females and the other one he claims is not bred-to-lay. The first of these males is to be used in the pen with the bred-to-lay females for a certain length of time, the eggs hatched and the chicks marked and the pullets from this mating to be trapnested the following year. This male is to be removed and the poor one later placed in the same pen with the bred-to-lay females. The eggs from this mating are to be hatched the chicks marked, and the pullets trapnested. He claims that the pullets from the first male but from the same females, will lay twice as many eggs as the pullets from the second male, showing that the laying qualities of a flock depend more upon the breeding of the male than upon the female. The result of this test will be awaited with interest.

The feeding experiment will consist of ten pens, each pen being composed of five Buff Orpingtons and five S. C. W. Leghorns. We use these two varieties so that we can note what effect the different feeds have upon the large and small breeds. All of these birds are bred from the same pen, are the same age and about the same weight. The ten pens will each be fed a different ration, the exact formulas for which will be announced later. This will make 700 hens in the next contest and the result obtained from these ten pens will be announced each month with the regular monthly report. Other interesting data will be collected, and every effort will be made to make the next laying contest of great value to the entire poultry fraternity.

The Golden Egg Silver Cup was won this month for the second time by Pen No. 33, Silver Spangled Hamburgs. T. E. QUISENBERRY.

EVERY GOOD HOME
WANTS THIS GREAT REFERENCE WORK
Webster's Universal Dictionary
(UNABRIDGED)
This Dictionary is not published by the original publishers of Webster's Dictionary, or by their successors. It is a New Creation.
JUST OUT—Copyrighted 1912
THE ONLY UNABRIDGED DICTIONARY IN BOTH INDIA PAPER AND REGULAR EDITIONS
Send postal for Free Sample Pages.
AGENTS WANTED
UNIVERSAL PUBLISHING CO., AKRON, OHIO

WANTED A man or woman, all or spare time, to secure information for us. Experience not necessary. Nothing to sell. GOOD PAY. Send stamp for particulars. Address M. S. I. A., Indianapolis, Ind.

We Ship on Approval
Prepay Freight, and allow
30 Days Free Trial
IT ONLY COSTS ONE CENT to learn our unheard of prices and marvelous guarantee on "Brictson" Detachable Treads.
Let us show you how to save from 300% to 400% on your tire expenses. Write to-day for full particulars.
The Brictson Mfg. Co.
38112 Main St.
BROOKINGS, S. D.

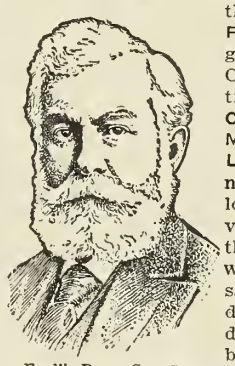
A. G. MILLER
Breeder of
Barred Plymouth Rocks
Cockerel line exclusively; fine, large cockerels to offer. Among them some exhibition birds that will win for you. Write for prices.
A. G. Miller, 1501 5th Av., St. Joseph, Mo.

HONEST MAN OR WOMAN WANTED
A large, well-known company, about to spend $100,000 on a tremendous advertising campaign, requires the services of a bright man or woman in each town and city. The work is easy, pleasant and highly respectable, and no previous experience is necessary. We will pay a good salary and offer an unusual opportunity for advancement to the person who can furnish good references. In addition to this salary, we offer a Maxwell automobile, a Ford automobile and over $3,000 in prizes to the representatives doing the best work up to December 31. In your letter give age and references. Address Ira B. Robinson, Advertising Manager, 902 Doty Bldg., Boston, Mass.

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing
Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*
M. BRUNSWICK & CO., Rochester, N. Y.

SELL YOUR FARM
QUICKLY FOR BEST PRICE. Advertise it in American Land Directory; reaches 20,000 farm buyers everywhere. Send description and 25 cents cash (no further cost. Secretary, 6378 Penn Ave., Pittsburgh, Pa.

RHEUMATISM
To Get You to Try My Drafts NOW I'll Send Them on Free Trial—Just
Sign and Mail My Coupon
Don't take medicine—write me. Return mail will bring you, prepaid, a pair of the famous Magic Foot Drafts, the great Michigan Cure for Rheumatism of every kind, Chronic or Acute, Muscular, Sciatic, Lumbago or Gout, no matter where located or how severe. The cures these Drafts are working upon thousands seem so wonderful to me that I do not ask you to believe what I say, but simply to send in my coupon and try the Drafts for yourself. Then if you are fully satisfied with the benefit received, send me One Dollar. If not, they cost you nothing. I take your word. If they can cure all stages of this cruel disease at all ages of life, surely you can expect quick relief. Don't delay—but act at once. Send no money—just this coupon. Do it Now.



Fred'k Dyer, Cor. Secy.

This $1 Coupon FREE
Good for a regular $1.00 pair of Magic Foot Drafts to be sent Free to try (as explained above) to
Name.....
Address.....
.....
Mail this coupon to Magic Foot Draft Company, 1132-F, Oliver Bldg., Jackson, Mich.

Our Classified Advertising Department

For advertisements in this department, of not less than twenty words each, in which no display type is used, we make a special rate of FIVE CENTS PER WORD, EACH INSERTION. If several different advertisements are inserted in the same issue, the charge will be $1.00 for each ad, no matter how small. The first four words of each ad will be set in black type. Every initial and number to count as one word. This department is for the benefit of our subscribers who have anything to sell, including farm lands, fruit farms, dogs, ponies, poultry and eggs, live stock, plants, shrubs, vines, etc. All advertisements for this department must be PAID FOR IN ADVANCE. Count the number of words you send, and remit at rate of 5 cents per word, stamps, currency or money order. This is considerably less than our display rate, and offers a splendid opportunity to reach our readers at a low figure. Send a trial advertisement with remittance at rate of 5c a word THE FRUIT-GROWER, St. Joseph, Mo.

Pacific Land Show

For the first time the Pacific Northwest will hold a land show. It will be in Portland, November 18th to 23rd, and in scope it will cover the entire Pacific Northwest. It is to be given under the auspices of the Oregon State Horticultural Society, and is expected to bring 20,000 people to Portland that week.

Naturally, fruit exhibits will be given a very prominent place, but every product of the soil will be welcomed and there promises to be a very wide showing from the four states. It will take $20,000 to pay for the prizes that will be offered. This will be divided among individuals and districts which make a district display of fruits as well as district displays of agricultural products. In addition, there will be farming implements of various kinds offered as special prizes, trophy cups, and subscriptions to agricultural papers.

The railroads are supporting the land show generously with funds and reduced rates. One and one-third fare for the round trip is offered from all points in Idaho, Oregon, Washington and Montana. It is expected that California and British Columbia will also share in the reduced rates.

The exhibit of the Oregon Agricultural College, which was the talk of the State Fair, will be brought to the land show. This exhibit was of great benefit to the fruit growers and farmers and it is bound to add largely to the interest of those attending the exposition. The Domestic Science Department of the Oregon Agricultural College will conduct demonstrations in cookery while the show is in progress and will also operate a restaurant in connection therewith.

An annex to the land show building, which is located at East Morrison and East First streets, will be given over to a display of farm implements and machinery. A forest of fruit trees has been offered as prizes by the various companies and many articles are being offered as premiums by manufacturers throughout the East.

The land show, as a permanent institution, seems to be of great educational value, and the Pacific Northwest has taken it up in earnest. It is expected to make it an annual event in Portland hereafter. The uses of the land show in this territory will be to afford an easy means for the settler and land seeker to become familiar with what the Pacific Northwest has to offer them, as well as to point the land-hungry city dweller to the soil.

Portland business men are subscribing the fund necessary for prizes, believing that the forthcoming show will be of lasting value to the state.

Dwarf Essex Rape for Pork Production.

High prices for all grain feeds and the failure of clover on many farms have caused a large number of feeders of hogs to look for forage crops which, with a light grain ration, will produce fairly rapid gains at a moderate cost. Investigations at the Ohio Experiment Station have shown rape to be one of the very best crops for this use if clover is not available.

Six pigs, weighing about forty-five pounds each at the beginning of the test, were kept on slightly less than one-quarter of an acre of rape for eleven weeks. During this time the pigs received 825 pounds of a mixture of nine parts, by weight, of ground corn to one part tankage, and gained 369 pounds in weight. Another plat, more fertile than this one, yielded an even more luxuriant growth of rape, and showed a larger carrying capacity.

The rape from the better plat showed a replacement value of over $48 per acre when the gains produced and concentrates consumed by pigs, some receiving corn alone and some receiving corn and tankage, on the rape and by similar pigs fed corn and tankage in dry lot were compared. In this calculation corn was valued at fifty-six cents per bushel, and tankage (sixty per cent crude protein) at $48 per ton.

If wet, rank rape is pastured, soreness of skin, particularly about the ears, is occasionally developed. This may be avoided to some extent by keeping pigs from the rape while very wet, or if it occurs, may be relieved by the application of lard, oil, or other similar material.

Dwarf Essex rape is the variety best suited for forage. It may be broadcasted or drilled solid at the rate of five to seven pounds of seed per acre, or drilled in rows at the rate of three to four pounds of seed per acre, at any time from April 1st to July 15th. Rape will do well in ordinary seasons in any part of the state, if provided with a good seed bed in fertile, well drained soil. On weedy land there is an advantage in drilling in rows far enough apart to permit cultivation; besides, there is likely to be less damage to the rape from trampling.

Under favorable conditions rape should be ready for pasture in six to eight weeks from time of seeding. It will continue to grow until late fall. It may be pastured with a moderate number of pigs continuously, or may be fed down rather closely and then allowed to grow up again, whichever plan is most convenient.

Farm Bookkeeping.

Farmers' Bulletin No. 511 of the Department of Agriculture contains some interesting facts and recommendations in connection with bookkeeping on the farm. "That there are over six million farms in the country which utilize land, labor and capital as means of income making" gives the author the opportunity to discuss the subject of the value of the farmer keeping an accurate and systematic account of his farm management the same as the business man or the railroad magnate.

This bulletin is not an attempt to outline a system of bookkeeping for the farmer. It is rather a discussion of the principles which are applicable to accounts on the farm. It is believed that any farmer who studies this bulletin sufficiently to grasp these principles will be able to devise a system suited to his particular needs.

Two important points must be considered in an attempt at farm bookkeeping. What does it cost to produce farm products? By selling at market prices, what profit is made on them?

"The problem of the farmer is to meet conditions on his own farm in a way which will give him the greatest net returns for his labor and the use of his capital. He should receive interest on his capital as well as wages for his labor, but owing to the lack of proper records, few farmers know what wages they actually receive. There is reason to believe that the majority of farmers are really living on the interest of their investments rather than on the profits of their farms."

These suggestions are offered:

(1) Consider as one unit all that may be termed real estate, as land, farm buildings, fences, ditches, etc., whether the farm is rented or owned by the operator.

(2) Do not consider that the farmer or his family receive anything for their labor unless they are paid in cash the same as hired labor. If there is a surplus at the end of the year, it is their compensation. In this way the accounts will not be confused with items not strictly cash.

(3) Farm products used by the household should not be credited to the farm in the cash account along with the products sold, but should be taken care of separately."

POULTRY DEPARTMENT

Sheppard's Famous Anconas. The world's best, single or rose comb. First at world's greatest shows, including London, England; Madison Square, and Cleveland. Greatest egg record, 256 average. Catalogue free. Cecil Sheppard, Berea, Ohio. President International Ancona Club.

R. C. W. Leghorns—Pekin ducks. Yearling males and females for sale at prices that will move them. Bred from Chicago, Minneapolis, Oshkosh, Fond du Lac winners. Circular. Joseph H. Kitchen, El Dorado, Wisconsin.

By carefully mating the very best stock obtainable, I have produced a high-scoring winter-laying strain of Partridge Wyandottes. Stock and eggs for sale. W. E. Brockelsby, Lawrence, Kansas.

For Sale—Some choice S. C. W. Leghorns, B. P. Rocks and Mammoth W. H. turkeys. Winners at leading shows. Southern Slope Poultry Farm, Box A, Jacksonville, Ill.

Ninety young thoroughbred Rose Comb Reds. Utility, breeding, exhibition, layers. Indian Runners, Fawn, White. Quick sale, bargains. Alleshouse, Trenton, Mo.

Will close out rest of stock for sale at $8 dozen. Pure Rocks, Leghorns, Reds, also Toulouse geese; Guineas. Mary Dowell, Prowers Co., Granada, Colo.

Closing out sale. My entire flock of Crystal White Orpingtons, Kellerstrass' best, direct, at bargain prices. Rosetta Schwerer, Blandinsville, Ill.

Here to please. Barred Rock, Buff Orpington, Red; cockerels, pheasants and Indian Runner ducks. Julia E. Wise, New Market, Iowa.

Fawn and White Indian Runner ducks. Pens only four ducks, one drake, $7.50. E. L. Andrews, Maryville, Mo.

Indian Runner Ducks—Fawn and white or penciled stock for sale, $1.50 to $3 each. J. W. Fretz, Bosworth, Mo.

S. C. B. Leghorns—600 hens for sale at a bargain. R. Hendricks, Washburn, Ill.

FARM LANDS FOR SALE

Arkansas

A snap—410 acres black peach land, the finest in the world. Partly improved, some Elbertas, beautiful location, healthy, 600 feet elevation; crops never fail. Sandy, gravelly red clay sub-soil, with lime, potash and iron in abundance. Splendid air and water drainage. Excellence freestone water at 20 feet everywhere. Ideal for agriculture and all fruits. Lands at and near the famous Highland orchard, now selling at from $50 to $300 an acre. Near railroad, schools and churches. Price $25 acre; worth $150. Diamond State Land Co., Murfreesboro, Ark.

Forty-acre commercial fruit farm in famous Benton County apple district. 1,800 apple trees 9 years old, 400 Elberta peach trees 3 years old. Ideal location, water and air drainage. A bargain for $4,000. Particulars, R. T. Osburn, Bentonville, Ark.

For Sale—1,000-acre Arkansas stock farm, good improvements, 300 acres bottom land, about 200 in cultivation, good fencing and good house. Price $10,000, on terms. Polk Real Estate Co., Little Rock, Arkansas.

Grow strawberries for early Kansas City markets on cheap land in Arkansas. "Homeseekers Guide" free. Porter Land Co., Horatio, Ark.

Cuba

Rich soil, ideal climate. Abundant rainfall, best transportation; 20 acres, $600, $10 monthly. Map and literature free. S. O. Sanderson, 184 Palace Bldg., Minneapolis, Minn.

Iowa

Apple Orchard For Sale—One of the most profitable orchards in Iowa, and located at Glenwood, the recognized center of the fruit-growing section. Contains 70 acres. Price, per acre, $325. Address C. H. Dyar, Glenwood, Iowa.

Single-Comb White Leghorns, Young and Wyckoff strains; Indian Runner and Rouen ducks, bargains, as I have not the room to winter them. Robert F. Wittbecker, Lansing, Iowa.

Louisiana

For Sale—200 acres improved bottom land, above overflow, three miles from railroad; timber on place. Address T. Duke, Kelly, La.

Missouri

For Sale—Orchard farm situated in Howard County, one mile from New Franklin, Mo. Contains 256 acres, 200 acres in apple trees, 10 acres in pear trees; one-half this large orchard is composed of young trees bearing two years, the other half has been bearing some fifteen years. A splendid chance for fruit man. If can get quick sale will make inducements. Want $150 per acre. Write Luther E. Todd, 1611 Pine street, St. Louis, Mo.

If you want to live, come to Springdale. Ideal climate, mild winters, pure soft water; 20 acres, close in, 8 acres clover, 5 acres apples; fine well, log buildings, school one-fourth mile; $1,200, easy terms. Free lists. Fredricks, Springdale, Washington Co., Ark.

I will sell ten acres of unimproved land in heart of famous Koshkonong peach district for $500, part time. W. E. Barlow, Blacksburg, Virginia.

New Mexico

For Sale—Finest improved farm in New Mexico, containing 13 1-2 acres choicest valley land under irrigation; dwelling, two modern greenhouses, 80x36, 50x20, stocked, vegetables, pumping plant, tank and tower, barns, etc.; 1,000 young trees in orchard, 3,000 shade trees 5 years old, in nursery; five minutes from street car, one mile from city. Crops included. A good living the day you buy. Write and investigate this. J. Woodward, Old Albuquerque, N. Mex.

Pecos Valley apple orchards. Small tracts planted to young orchard. Railroad station on the land. Ample water. California irrigation systems; excellent schools; good roads; ideal climate; exclusive market. Within two miles of second largest city in New Mexico. Pecos Valley Investment Co., owners South Spring Orchards, Roswell, New Mexico.

North Carolina

Come South. Mountain section, altitude 2,250 feet. Mild winters, cool summers. Dairying, fruit growing, diversified farming. Cheap lands. Information Bureau, Hendersonville, N. C.

Ohio

For Sale—55 acres; 1,500 peach and apple trees, half of orchard set six years, under up-to-date culture, on good pike, 1 1-2 miles from county seat, the best school town in Ohio. Unsurpassed for markets. Fair buildings, good land, slightly rolling, excellent for fruit of all kinds, and poultry. Can be made a beautiful and profitable home. A bargain at $6,000. Walter Glenn, Delaware, Ohio.

Oregon

Rogue River Valley orchard for sale cheap. Ten acres, full bearing; going east, must sell. J. H. Bissell, Medford, Oregon.

Texas

As much as $1,000 per acre has been made from our berries. McDonald berry earlier than Harvest. Twice as productive. Dallas, Robinson, Jordan and others. All fine everywhere. Tree fruits. Write for catalogue. Fitzgerald's Nursery, Stephenville, Texas.

For Sale—One hundred and sixty acres; alfalfa; hogs; dairying; fruit; a good all-round farm. Address J. E. Lutz, Vernon, Texas.

Virginia

Look ahead live years—What's in store for you? Would a pretty home in absolutely healthy climate and comfortable living income every year appeal to you? One of our ten-acre apple orchard tracts, planted with 500 trees—which will cost you a few dollars now and small payments monthly—will insure your future home, income and happiness. Write now for descriptive book 1. Shenandoah Valley Apple Lands Company, Waynesboro, Virginia.

Washington

The Walla Walla Valley has never experienced a cyclone, tornado, hurricane or blizzard, crop failures are unknown, abundant opportunities for successful investments. Write for information regarding fruit growing, truck gardening, dairying and poultry raising. Ask for beautiful free illustrated booklet C, Commercial Club, Walla Walla, Washington.

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace Bldg., Minneapolis, Minn.

MISCELLANEOUS

Free—"Investing for Profit" magazine. Send your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine. It is worth $10 a copy to any man who intends to invest $5 or more per month. Tells you how $1,000 can grow to $22,000. How to judge different classes of investments, the real power of your money. This magazine six months free, if you write today. H. L. Barber, publisher, R434, 20 W. Jackson Boulevard, Chicago.

Bargain in Oil Pots—I have eleven hundred 3-gallon Hamilton oil pots for sale, complete, with covers, for 30c apiece f. o. b. Beeville, Tex. They were bought last winter brand-new. All have been filled with oil, but only about 350 have been fired for one night. All are in first-class condition. I have sold my orchard and therefore have no use for them. Write to A. V. Schvab, Beeville, Tex.

Free illustrated book tells about over 360,000 protected positions in U. S. service. More than 40,000 vacancies every year. There is a big chance here for you, sure and generous pay, lifetime employment. Easy to get. Just ask for booklet A 802; no obligation. Earl Hopkins, Washington, D. C.

$$$$$ for names, information, etc. Lucrative; spare time, permanent position; no canvassing; experience unnecessary. Enclose stamp for particulars. National Information Sales Co., A. B. P., Cincinnati.

Practice demands my time. Special price on equipped poultry plants, or stock; 40 kinds poultry, pigeons, pheasants, collies, Jerseys (registered). Write wants. Dr. Pauly's Pheasantry, Kahoka, Mo.

Land owners, find out what the minerals on your land are worth. Accurate analysis of ores, minerals and commercial products. Prices reasonable. Box 6, Blacksburg, Virginia.

Consulting horticulturist—J. F. Littooy, Boise, Idaho. Directs orchard operations. Investigates orchard values and operations. Expert for counsel at law.

Wanted—A secondhand broom-making outfit. Press winder, etc. Write what you have and the price, to J. D. Caldwell, care W. C. Bell, Pallsades, Colo.

DOGS AND PET STOCK

For Sale—Scotch Collie puppies from imported and registered stock. Every fruit grower should own a Collie and for a good one should write D. B. Rice, Marcellus, Mich.

10,000 Ferrets For Sale—Write for price list and catalogue; it's free. De Kleine Bros., Jamestown, Michigan. Box 12.

HONEY

Finest quality new clover honey in thirty-pound cans; price for one can, $3.45; two or more cans, $3.30 each. Sixty-pound cans, $6.30 each. Send for price list. M. V. Facey, Preston, Minn.

Honey sample, 10c. Leaflet free quoting prices. California honey, fruits, nuts; freight prepaid. Agents wanted. Spencer Apiaries Co., Box 178, Nordhoff, Cal.

HELP WANTED

Wanted—Two capable families. One to manage orchard and board help, the other to run a market garden. State experience, when and where; age and size of family. Box 715, McCook, Neb.

Kill the Quack Grass

Quack grass is spreading in the West. It is scattered largely in the seed of Hungarian brome grass and other commercial grass seeds. In the past fifteen months, D. H. Rose, assistant in botany in the Kansas Agricultural College, has found quack grass seed in many samples of commercial grass seeds he has tested. The pest has gained a foothold in several eastern counties in Kansas.

Chokes Out Other Crops.

This weed has long underground stems, or rhizomes, and tools used in cultivation tend to scatter these rhizomes, thus increasing the size of quack grass patches. As the stand of quack grass becomes thicker, farm crops are choked out, until in some parts of Canada and the northern United States, some fields have been given over to the weed. Unless great care is taken in the introduction of grass seeds, this weed may soon become as bad in Kansas as it is in Northern states.

The stems of quack grass sometimes grow to a height of four feet, when they are in good soil. The stems bear seed spikes from six to twelve inches long, and these spikes contain many seeds. However, the scattering of roots by farm tools is one of the most common methods by which the weed's territory is increased. After a patch of quack grass has started in a field, it will spread until it has covered all the ground, unless it is checked.

Plowing Out Roots Helps.

One of the methods that commonly is used to check the progress of this weed is to plow the ground shallow in the fall and harrow it, which drags out the underground stems. The stems then are raked into windrows with a sulkey rake, and burned. Usually, this process is repeated several times, and most of the stems can be gotten from the soil. The following spring, the ground must be cultivated every little while up to the middle of June, and all growth of young quack grass killed. After that, the ground should be kept in some kind of cultivated crop for several years. The eradication of quack grass is a slow and expensive process.

As it is so frequently found in commercial grass seeds, these seeds should be tested. The department of botany at the Kansas Agricultural College will do this work free.

Commercial Grading of Grain.

A senior student at the State College of Washington recently has completed, as his thesis work, a comparison of commercial grades of grain as established at the wholesale markets to which the cereals of the Northwest are sent. He found a great variation in grading and the standards as established at the market centers. Certain markets were found to grade grain on a basis which took into consideration the flour-making value of the wheat as indicated by the terms "hard," "soft," and the like, while others based their grading upon variety names.

The bushel weight was found to be one of the factors in grading at all market centers, but a No. 1 grade in one market frequently would not have the same bushel weight in another market.

The methods of grading-off impurities and as a basis for dockage were found to vary greatly. Certain markets showed a very simple and easily intelligible system of estimates for dockage, while other systems were so complex as to be almost unintelligible to anyone except the officials in charge.

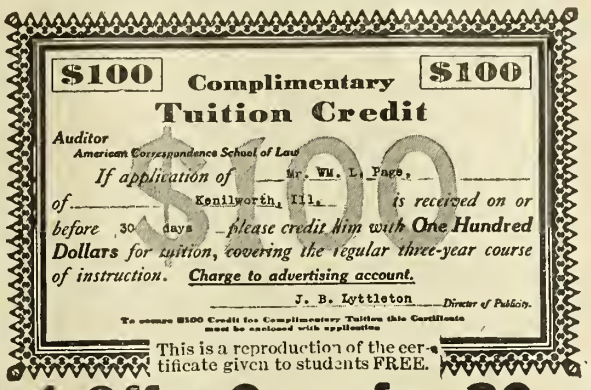
The Division of Chemistry of the Washington State Experiment Station is now engaged in a study of the relation of market grades of wheats, as established in the Pacific Northwest markets, to the milling value of the wheat, and the bread-making quality of the flour. Reports of these investigations already have been published in bulletins 84, 91, 100 and 102, and may be obtained free by writing to the Director of the Experiment Station, Pullman, Washington.

Most woodlots on farms in Missouri, Kansas and other Western states are not returning a high profit. In many cases, they are not paying taxes and even a fair return. They never will produce a profit until they are cared for better.

The owners have cut the best trees all the time, and this has left some very poor trees behind. Take, for example, in eastern Kansas where there is a considerable growth of trees along the creeks; the best trees have been cut until now sixty per cent are white elm. The white elm is not a valuable tree, and only in exceptional cases will it return a profit.

If you desire to keep the land in trees, make every effort to grow valuable species. A tree like white elm, that is useful only for firewood, never will be profitable. The most profit is to be made from trees like catalpas, that are valuable for posts. But, of course, you can't put all the timberland in catalpas at once, but you can use this method in cutting: Always cut the least desirable trees that will do for your purpose. In other words, cut the poor species like white elms when you can, and then cut the crooked trees of the more desirable varieties, like walnuts, when they will do for your purpose. If you will do this, the stand of trees may be improved by cutting, instead of being injured.

Many times a dollar's worth in a year's subscription to The Fruit-Grower and Farmer.



This is a reproduction of the certificate given to students FREE.

LAW

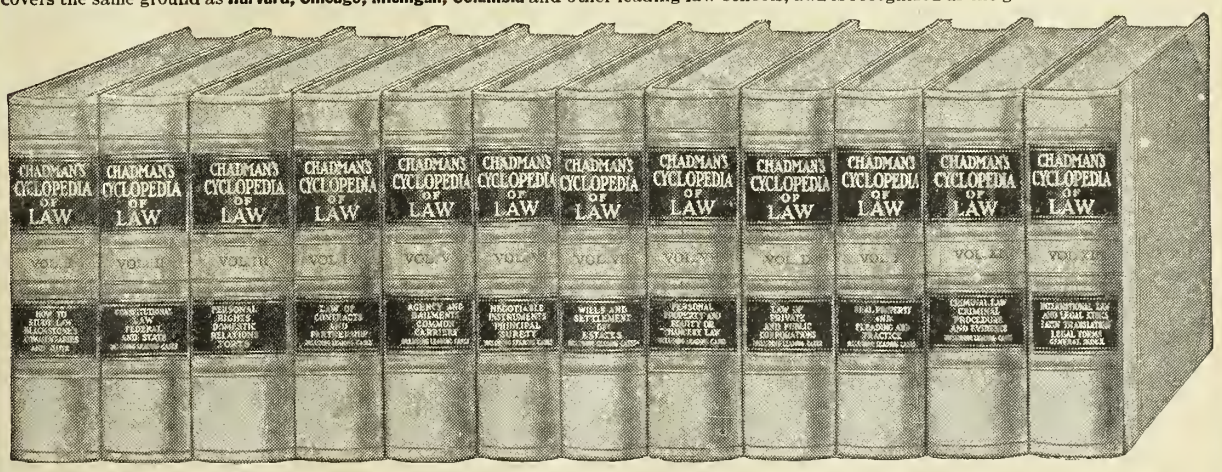
This $100 Certificate of Tuition FREE

Offer Open for 30 Days—Write at Once

A tremendous—positively tremendous offer—for the ambitious man on the farm. Here is an opportunity to get your tuition in a great law school positively **without a cent of cost to you.** Read—Read the offer which we make on the complimentary tuition credit for $100 which we picture here Note that we are doing this for advertising purposes. These complimentary tuition credits will be given out only in a limited number. We expect to withdraw this offer absolutely in thirty days, so if you want to be one of the few lucky ones to get a three years course in law absolutely free, don't wait, but mail the coupon at the bottom of this page to us **at once.** If you follow the lives of our greatest lawyers and statesmen you will find that nine out of ten of them were born and raised on a farm. Lincoln was a lawyer—home trained. You need a knowledge of the law right on the farm. No longer is the farmer simply a tiller of the soil. The farmer of today is a business man—with big business interests. A knowledge of the law will enable you to more perfectly carry on your business transactions. When you sell your crops—take out insurance—contract for building materials—make a contract with your neighbor—in fact, any thing you do—you need a knowledge of law.

Learn Law in Your Own Home on This Great Offer

Learn the law at this great school just as well as if you attended a resident university. Graduate correspondence students hold highest records and are most successful in passing bar examinations. Our complete home-study course covers the same ground as **Harvard, Chicago, Michigan, Columbia** and other leading law schools, and is recognized as the greatest in the world.



We Furnish This Magnificent Law Library With Every Free Certificate

We Guarantee to coach free any student failing to pass the bar examination. The course we offer covers both theory and practice and prepares for the bar **in any state.** Abraham Lincoln, Henry Clay, James A. Garfield and thousands of our most prominent men and lawyers studied law at home. Send the coupon at once for full information.

Twelve of the most magnificent law books published. With each of these splendid volumes are the masterful lessons and lectures that we furnish you. You will master the most difficult law problems in a short time—a very short time. Don't fail to send the coupon right away. **Everyone should have a knowledge of the law.** Only cost to scholarship students is for text and postage.

A Special Business Law Course for Farmers

We have arranged to give you a special course in Commercial Law. Every farmer in the country should have the principles of commercial law. Know your rights. Avoid expensive lawsuits. **You should know the law in order to protect yourself**—in order to know just what to do when you are confronted with any problems

Mail This FREE COUPON At Once

Put your name and address on this coupon and mail it in to us today and we will send you our big 132-page catalogue and full particulars of this greatest law school offer. Remember—**a complimentary tuition credit for $100** covering the regular three years course of instructions. Every man who lives in the country should sign the coupon and mail it to us at once. Remember those who get the $100 complimentary tuition credit free pay absolutely not one cent for tuition. No obligations—so send the coupon at once.

American Correspondence School of Law
Dept, 3668, Manhattan Bldg., Chicago, Ill.

FREE COUPON

American Correspondence School of Law
Dept. 3668
Manhattan Bldg., Chicago, Ill.

Gentlemen—Without any obligation or expense to me, please send me your 132-page catalogue and full particulars of your free tuition credit offer.

Name.....

Address.....

.....

A Genuine Rupture Cure Sent On Trial to Prove It

Don't Wear a Truss Any Longer.

After Thirty Years' Experience I Have Produced An Appliance For Men, Women and Children That Actually Cures Rupture.

Are You Ruptured?

If so, the BROOKS APPLIANCE is made for You; You and all other Men, Women and Children who are sufferers from this annoying and dangerous trouble. That truss you have been wearing—one of many you have tried—chafed and irritated you and was worse than nothing. It had springs and pads and harness and straps and fixings galore and was continually getting out of shape—slipping down or working up and always needed attention. Then, there were salves and washes and ointments to make the case worse and harder to bear. I want to say that you will find none of these annoyances and vexations in the BROOKS APPLIANCE. At least they are reduced to a minimum. This APPLIANCE was made with a view to eliminate, to do away with, just such trouble. I would have been foolish to work half a lifetime, thinking out and perfecting a thing that had no advantage or was not better than scores of other inventions upon the market. In my APPLIANCE you will find the old objectionable features LEFT OUT. You will find it easy to wear. You will scarcely realize you are wearing it. There is no binding, drawing and slipping out of place. It does its work effectively and with comfort to the wearer. I want you to read my book, in which I have taken pains to give full particulars about it. Then there are a few letters printed in it—selected at random from among hundreds written by men and women who have been cured. You can write these folks and see what they say. If I were you I would see to this matter without waiting. You can put off some things without running much risk, but a rupture is a dangerous proposition to neglect. A rupture is not only bad and serious of itself, but it leads to things infinitely worse. Fill out coupon and mail TODAY. Tomorrow will do, but today is better.

Don't Make The Child Wear A Truss Through Life

I Want to Reach the Parents of Every Ruptured Child in the Country.

The Truss is a Flesh Torturing Invention Fit Only as a Relic of Barbarity.

I want them to know about the Automatic Air Cushion Rupture Appliance that I make for children who are afflicted in this way.

The Brooks Appliance Cured His Rupture. Now He Is As Sound And Whole As If He Had Never Been Ruptured.

My appliance can be put on any child with perfect safety to the little one. For growing children there is nothing better to be had—no matter how much you pay—than my Appliance. I want the parents or others who may have children in their care to understand that there should be no delay in getting proper help for ruptured children.

Every day that the rupture is allowed to go on without the right means of correcting it—just so much harder will it be for the child to get rid of it.

No ruptured child can ever be free from the thought of the rupture and it is not fair to any child not to have an equal chance with other children. No matter what we may wish to think—ruptured children do not have an equal chance.

Common trusses do not help.

Thousands of men and women know that from their own experience with such trusses.

But it is not necessary for children to wear harsh, cumbersome, steel trusses any more.

You may have had to wear something like this but don't make your child do it. Give the child something better.

My Appliance is better and I want to prove it to you.

I will make an appliance to the child's measure, send it on TRIAL—put it into your hands to see and use and then you can say whether it is what I claim or not.

The Automatic Air Cushion conforms with every movement of the child; there is an even, gentle pressure which gradually binds the broken parts together—as you would bind a broken limb—and then no matter how much the child jumps, runs, rolls over or falls down—the pressure is kept up just the same—always drawing the parts together.

Write me today and get all the information—send the coupon.

The above is C. E. Brooks of Marshall, Mich., the Inventor, who has been curing rupture for over 30 years. If ruptured write him today.

If you have tried most everything else, come to me. Where others fail is where I have my greatest success. Send attached coupon today and I will send you free my illustrated book on rupture and its cure, showing my Appliance and giving you prices and names of many people who have tried it and were cured. It is instant relief when all others fail. Remember, I use no salves, no harness, no lies.

I send on trial to prove what I say is true. You are the judge and once having seen my illustrated book and read it you will be as enthusiastic as my hundreds of patients whose letters you may also read. Fill out free coupon below and mail today. It's well worth your time whether you try my appliance or not.

Others Failed But The Appliance Cured

C. E. Brooks,
Marshall, Mich.
Dear Sir:—

Your Appliance did all you claim for the little boy and more, for it cured him sound and well. We let him wear it for about a year in all, although it cured him 3 months after he had begun to wear it. We had tried several other remedies and got no relief, and I shall certainly recommend it to friends, for we surely owe it to you. Yours respectfully,

WM. PATTERSON.
No. 717 S. Main St., Akron, O.

Pennsylvania Man Thankful.

Mr. C. E. Brooks, Marshall, Mich.
Dear Sir:—

Perhaps it will interest you to know that I have been ruptured six years and have always had trouble with it till I got your Appliance. It is very easy to wear, fits neat and snug, and is not in the way at any time, day or night. In fact, at times I did not know I had it on; it just adapted itself to the shape of the body and seemed to be a part of the body, as it clung to the spot, no matter what position I was in.

It would be a veritable God-send to the unfortunates who suffer from rupture if all could procure the Brooks Rupture Appliance and wear it. They would certainly never regret it.

My rupture is now all healed up and nothing ever did it but your Appliance. Whenever the opportunity presents itself I will say a good word for your Appliance, and also the honorable way in which you deal with ruptured people. It is a pleasure to recommend a good thing among your friends or strangers. I am,

Yours very sincerely,
JAMES A. BRITTON.
80 Spring St., Bethlehem, Pa.

Remember

I send my Appliance on trial to prove what I say is true. You are to be the judge. Fill out free coupon below and mail today.

Ten Reasons Why

You Should Send for Brooks' Rupture Appliance.

1. It is absolutely the only Appliance of the kind on the market today, and in it are embodied the principles that inventors have sought after for years.
2. The Appliance for retaining the rupture cannot be thrown out of position.
3. Being an air cushion of soft rubber it clings closely to the body, yet never blisters or causes irritation.
4. Unlike the ordinary so-called pads, used in other trusses, it is not cumbersome or ungainly.
5. It is small, soft and pliable, and positively cannot be detected through the clothing.
6. The soft, pliable bands holding the Appliance do not give one the unpleasant sensation of wearing a harness.
7. There is nothing about it to get foul, and when it becomes soiled it can be washed without injuring it in the least..
8. There are no metal springs in the Appliance to torture one by cutting and bruising the flesh.
9. All of the material of which the Appliances are made is of the very best that money can buy, making it a durable and safe Appliance to wear.
10. My reputation for honesty and fair dealing is so thoroughly established by an experience of over thirty years of dealing with the public, and my prices are so reasonable, my terms so fair, that there certainly should be no hesitancy in sending free coupon today.

Cured at the Age of 76.

Mr. C. E. Brooks,
Marshall, Mich.
Dear Sir:—

I began using your Appliance for the cure of rupture (I had a pretty bad case) I think in May, 1905. On November 20, 1905, I quit using it. Since that time I have not needed or used it. I am well of rupture and rank myself among those cured by the Brooks Discovery, which, considering my age, 76 years, I regard as remarkable. Very sincerely yours,

SAM A. HOOVER.
High Point, N. C.

Child Cured In Four Months.

C. E. Brooks,
Marshall, Mich.
Dear Sir:—

The baby's rupture is altogether cured, thanks to your appliance, and we are so thankful to you. If we could only have known of it sooner our little boy would not have had to suffer near as much as he did. He wore your brace a little over four months and has not worn it now for six weeks. Yours very truly,

ANDREW EGGENBERGER.
21 Jansen St., Dubuque, Iowa.

Recommend From Texas Farmer.

C. E. Brooks,
Marshall, Mich.
Dear Sir:—

I feel it my duty to let you, and also all people afflicted as I was, know what your Appliance has don for me. I have been ruptured for many years and have worn many different trusses, but never got any relief until I got your Appliance. I put it on last November, but had very little faith in it, but must say I am now cured. I have laid it away—have had it off for two weeks and doing all kinds of farm work with ease. While I was wearing it, I had la grippe and coughed a great deal but it held all right. Words cannot express my gratitude towards you and your Appliance. Will recommend it to all ruptured people.

Yours sincerely,
J. E. LONG.
Bald Prairie, Texas.

FREE INFORMATION COUPON

C. E. BROOKS, 57B State Street, Marshall, Mich,

Please send me by mail, in plain wrapper, your illustrated book and full information about your Appliance for the cure of rupture.

Name .....

City .....

R.F.D. ..... State.....

354.05
WE

"The National Farm Magazine"

The Fruit-Grower and Farmer

December, 1912
Vol. 23 No. 12

ST. JOSEPH, MO.

IN THIS ISSUE:

Winning Success on a Small Farm
Making a Farm By Drainage
Setting Eggs in Cold Weather

TEN CENTS A COPY—ONE DOLLAR A YEAR

Trade Mark. Bro. Jonathan

Title Registered in U. S. Patent Office. Copyrighted by The Fruit-Grower and Farmer, St. Joseph, Mo.

Am I Too Particular?

By R. E. Olds, Designer

Some men in this line call me an extremist. Some use the word "old-maidish."

They say that I waste $200 per car on features that men don't appreciate.

These are some of those features. Do you, as a car buyer, regard these things as wasteful?

Tires 34 x 4

My latest extreme—adopted Oct. 1—is 34x4-inch tires.

That means 22 per cent greater tire capacity than I used on this car before.

It means a vastly over-tired car, for its size and weight, according to usual standards.

But tire makers say that 22 per cent will add 65 per cent to the average tire mileage. Does it seem extravagant to add 22 per cent to save you 65?

190 Drop Forgings

Another extreme lies in costly drop forgings. In Reo the Fifth as made today I use 190.

But each one gives both lightness and strength to some important part. Together they give me these racy lines, with even more strength than heavy, cumbersome cars.

The cost comes back to you, over and over, in the saving on tires.

Roller Bearings

Another useless expense, so some men say, lies in these roller bearings. What buyer sees the bearings?

But I have found that ball bearings do not stand the strain. So I have thrown them out. In Reo the Fifth I use 15 roller bearings—11 of them Timken, 4 Hyatt High Duty.

Over-Capacity

Each driving part, by actual test, is made amply sufficient for 45 horsepower. That gives a big margin of safety.

My springs are made two inches wide, and of seven leaves of steel. The front springs are 38 inches long, the rear are 46. That means both strength and comfort.

In my cooling system I use a centrifugal pump, to give positive circulation. Some say a syphon will do.

My carburetor is doubly heated—with hot air and hot water—to save the troubles due to low-grade gasoline.

I use a $75 magneto, to give a hot spark at low tension. You can start on this magneto.

I use 14-inch brake drums for safety. Also cable connections, not noisy rods.

Extreme Tests

Each lot of steel is analyzed twice, before and after treating. So there's never a weakness here.

Each gear tooth must stand 75,000 pounds, and prove it in a crushing machine.

Each engine is tested 20 hours on blocks, and 28 hours in the chassis. There are five long-continued tests.

The cars are built slowly and carefully. Parts are ground over and over—ground to utter exactness. Each car gets a thousand inspections.

I limit my output to 50 cars daily, so these things can all be done.

Rare Finish

I use a special, costly body, because it saves you 50 pounds in weight. And it takes a wonderful finish. Each body is finished with 17 coats.

I use the best genuine leather and the best curled hair—also springs in both the backs and seats—to give you this comfortable upholstery.

Every detail shows the final touch. Even the engine is nickel trimmed.

Center Control

As for center control and left-side drive, you will note that the best cars for next year have come to them. But no control compares with mine, where all the gear shifting is done by moving a handle only three inches in each of four directions.

I operate both brakes by foot pedals, so the front of the car is kept entirely clear. Those are some of the features which I have contributed to the modern motor car.

After 60,000 Cars

In 25 years I have built some 60,000 cars. I have created in that time 24 models, each better than the last.

I have watched these cars under every condition, and I've watched other makers' cars. I know pretty well, after 25 years, where cars fail to meet the test.

No builder can be over-cautious. One can't build cars too well. And petty skimping is what leads to trouble.

It is true I might save $200 per car. But in time I should lose that splendid faith which men now show in me.

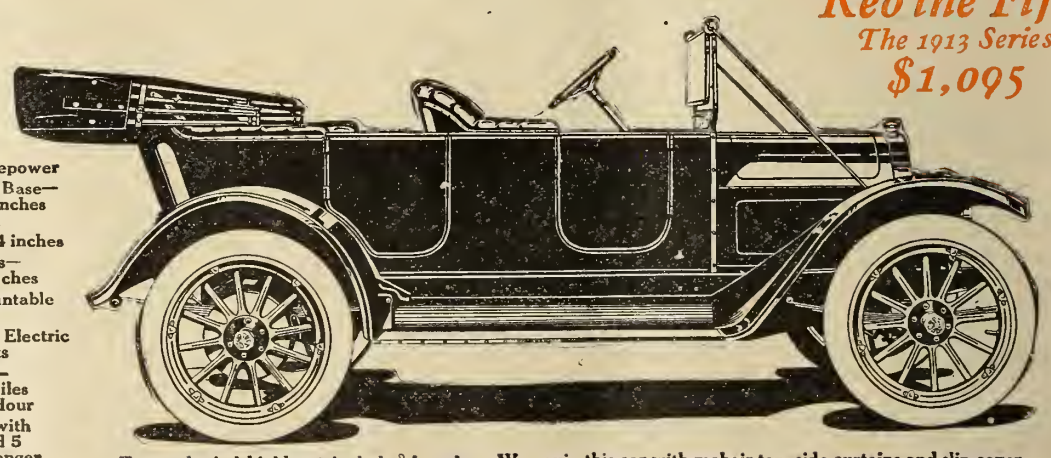
And you would lose—two, three, maybe ten times over—all you saved on price.

So I offer you only the best car I can build. And I offer the car at an underprice, so my extremes cost you little.

I know that enough men want cars like this to take all I can ever make.

A thousand dealers now are ready to show the Fall model of Reo the Fifth. Write for our catalog, showing various bodies, and we'll direct you to the nearest Reo salesroom.

Reo the Fifth
The 1913 Series
$1,095



30-35 Horsepower
Wheel Base—112 inches
Tires—34 x 4 inches
Wheels—34 inches
Demountable Rims
Three Electric Lights
Speed—45 Miles per Hour
Made with 2 and 5 Passenger Bodies

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip cover windshield, gas tank for headlights, speedometer and self-starter—all for $100 extra.

R. M. Owen & Co. General Sales Agents for **Reo Motor Car Co., Lansing, Michigan**

Canadian Factory, St. Catharines, Ont.

(121)

Do You Want To Get An Education at the Agricultural College

¶The Fruit-Grower and Farmer will send one boy or girl from every county to any Agricultural College they desire to attend, in return for a few hours' work a week for us.

¶There are hundreds of boys and girls who want higher education. They are hungry for the help the agricultural colleges can give. We are determined to help these boys and girls get the education they desire, and want to hear from every one of them.

¶The plan we have to propose is one which will appeal to every ambitious boy and girl. The work is fascinating and in itself is an education in a most practical line.

¶The agricultural colleges of the country—one in each state—are ready to help every boy and girl who will attend the school. They stand ready to make better citizens of them, to make them more efficient for any line of work.

¶With the proposition we have to submit, no boy or girl need be without this education. Don't be satisfied with anything less than this college training.

¶Write me today for full particulars.

James M. Irvine
EDITOR
The Fruit-Grower and Farmer
St. Joseph Missouri

Increase Crop Yields

Do you think the yields of the crops on your farm are so large as they should be? Don't you believe it would be possible to change the way you handle your fields so you could get better crops? Much of the land in the West is not handled so well as it should be. The greatest need on most farms is for a good, logical crop rotation. What is a good rotation? It will have in it a crop like clover or alfalfa that adds nitrogen to the land and improves its physical condition, a crop like corn that requires good cultivation, and a crop like wheat for which the seed bed must be well prepared. Either of the last two crops may be left out, but a good rotation always should contain a leguminous crop.

Many of the fields have a soil that is acid. Most crops, especially the legumes, do not do well in acid soil. How can you find out whether your soil is acid? Get some blue litmus paper at a drug store, and put some of the soil around the paper. Let it stand for one hour, then look at the paper. If it has turned red the soil is acid. Repeat this test in several parts of the field, in order to see whether it is all in the same condition. If there is a tendeney toward an acid condition, the soil needs lime.

Many of the fields of the West are deficient in phosphorus, and it would pay to add this element to them. This especially is true of some of the fields that have been cultivated for many years. Almost all of the land in the hardpan section of southeastern Kansas is deficient in phosphorus, in many eases the amount is down to a very few thousand pounds to the acre. Rock phosphate should be used on most of this land.

Probably two-thirds of the manure produced on the farms of the country is badly damaged before it is applied to the soil. The prompt application of barnyard manure to the soil is important, especially in the summer months. If manure is allowed to heat and beeome "fire-fanged" and if the soluble elements are leached away, the manure will lose most of its value. Haul all manure out promptly.

Adopt a good crop rotation, apply lime and rock phosphate if the soil needs it, and save all of the manure. Keep plenty of humus in the soil, which may be supplied by the manure that is added, and by growing catch crops and plowing them under.

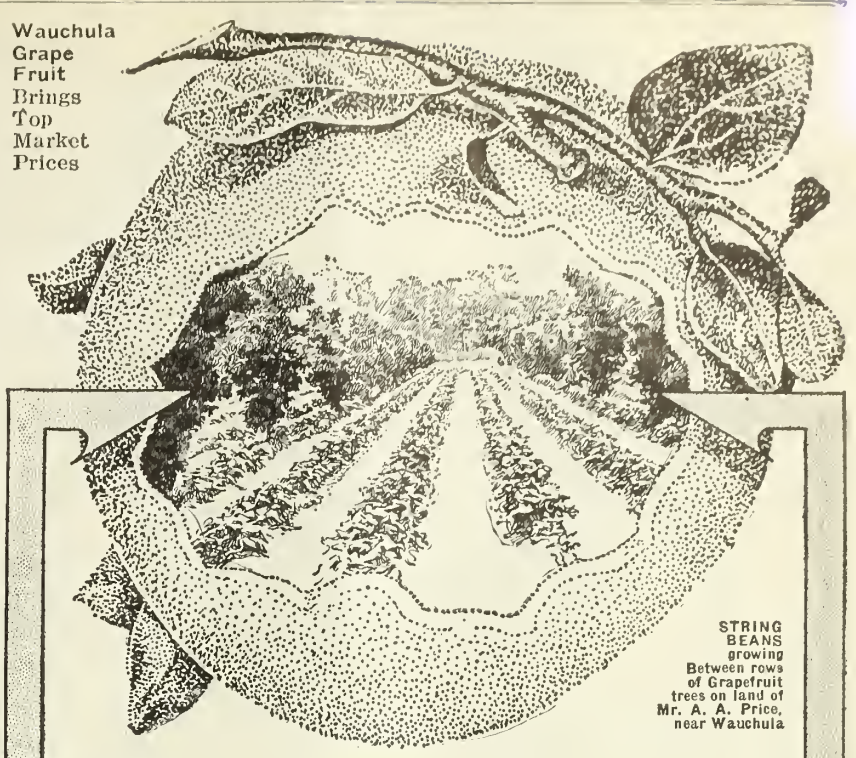
Losses in Barnyard Manure

In handling barnyard manure, the farmers can save or lose hundreds of dollars annually. A manure heap is a hot bed of baeterial aetivities. Some of the nitrogen is formed into ammonia and passes into the air; this is a clear loss. Some is transformed into nitrates, which are soluble. These are washed out by rains and sink into the soil, or run off into the ditch; this also is a direct loss. Some is formed by bacteria into nitrates, and these nitrates attacked by another species of bacteria which change into nitrogen gas, which passes into the air and is lost.

Nitrogen is worth at least eight cents a pound. A horse will produee fifteen tons of manure and litter a year, containing one hundred thirty pounds of nitrogen. At eight cents a pound, the value of that manure is $10.40. It pays to save it. Experiments have shown that liquid and solid manures when kept together deteriorate much more rapidly. Also the more compact the manure is stored away from the weather, the less loss will result. Here is a hint for progressive farmers. Our farmers lose this nitrogen and when it represents at least $10 a horse, one can afford to take a little better care of manure.

Idaho. J. F. NICHOLSON.

The loss from planting neglected seed corn reduces or destroys the profit on the eorn erop of each individual farmer, and in the aggregate is an annual loss to the country of many millions of dollars.



Florida Land
GUARANTEED BY BANKERS

Here is conclusive proof—**flourishing orange and grape fruit groves** demonstrate conclusively that you can make $5,000 to $10,000 per year near Wauchula, Florida. These **incomes are being made right here NOW. Bankers guarantee every statement** and the land itself. Read guarantee below.

In the beautiful Peace River Valley the man who has a little money and who is willing to work will find soil, climate, altitude with good drainage and well distributed rainfall that will produce grapefruit and oranges with large, steadily growing profits. **Read letters from men here; come down and talk with them.** The center of this district is Wauchula, with its 1,500 inhabitants, two flourishing banks, neat, up-to-date stores, good schools, churches, lodges. It offers all the advantages of the aggressive northern towns. Hunting and fishing nearby. **No negroes in Wauchula.** A safe, pleasant place to bring your family.

Vegetables Keep You in Comfort

The famous Wauchula **combination soil** enables you to put out your young orange and grapefruit trees and then raise beans, cucumbers, onions, watermelons, sweet potatoes, etc., between the rows. Vegetables keep you and your family in comfort until the grapefruit and orange trees begin to bear. **Your ten-acre plot pays for itself.** You'll find in our literature actual photographs of the rich yields of vegetables among the orange trees. This is the only large body of land where both vegetables and citrus fruit can be grown to advantage—**where they're being grown side by side today.** Our expert here on the ground will show you how to get the best results.

You need a little money to start. Once settled your income grows steadily year by year until it is on a par with that of the grove owners now here—men who drive their own cars, send their children to college. And these people show their confidence in this country by continually buying more land and setting out more orange and grapefruit trees.

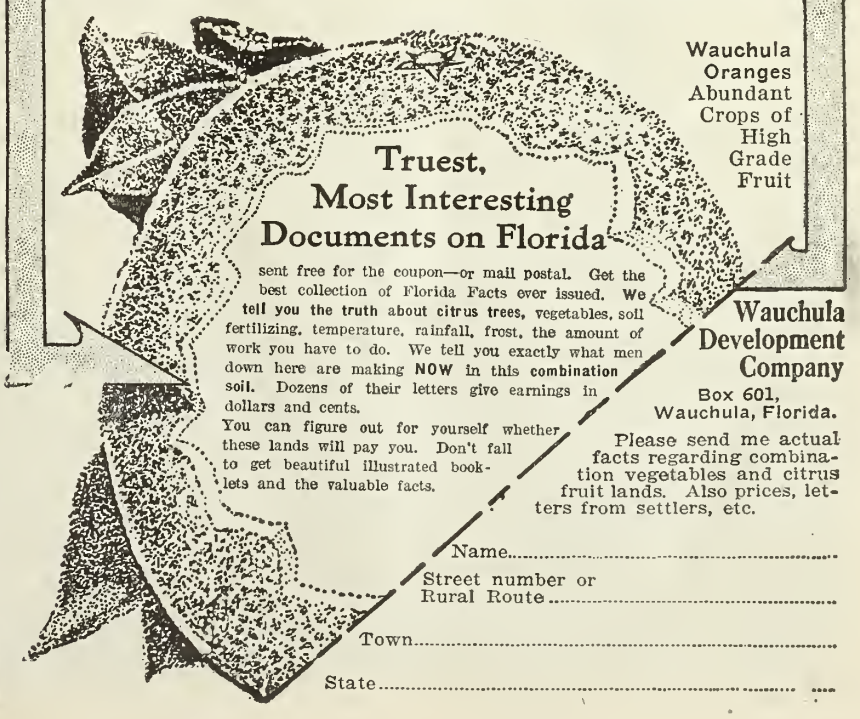
Then $5,000 and Upward From Grape Fruit

All the time you're raising vegetables your orange and grapefruit trees are getting bigger until finally they begin to produce the returns that will put you on "easy street" for life. Groves here at Wauchula ten and twenty years old and older. The terrible freeze of '95 did practically no damage here when thousands and thousands of groves throughout Florida were killed. The rich soil, the high ground, the safety from sea-winds strengthen and protect these trees so that it is certain they will survive the most severe frosts. Investigate this banker's offer.

A Year For Inspection—Then Decide

The Wauchula offer is on plots of 10 acres and up. **Moderate first payment, then a dollar per acre per month. Guaranteed land;** a year's time in which to make inspection. Come down here and look over this Peace River Valley Combination Soil. This is no "sight unseen" proposition. See with your own eyes how vegetables and citrus fruit flourish. If you can't come now **make your reservation,** which is more liberal than a year's option. **Any time within a year you can inspect your land; if you're not satisfied you get back every cent with 6% interest.** That's the guarantee backed by bankers of established reputation. The treasurer of this company is president of the Florida Citrus Exchange. Address

Wauchula Development Co.
Box 601 **Wauchula, Florida**



Truest, Most Interesting Documents on Florida

sent free for the coupon—or mail postal. Get the best collection of Florida Facts ever issued. We **tell you the truth about citrus trees,** vegetables, soil fertilizing, temperature, rainfall, frost, the amount of work you have to do. We tell you exactly what men down here are making **NOW** in this **combination soil.** Dozens of their letters give earnings in dollars and cents.

You can figure out for yourself whether these lands will pay you. Don't fail to get beautiful illustrated booklets and the valuable facts.

Wauchula Development Company
Box 601,
Wauchula, Florida.

Please send me actual facts regarding combination vegetables and citrus fruit lands. Also prices, letters from settlers, etc.

Name.....

Street number or Rural Route.....

Town.....

State.....

Actual Size of "Delicious" Weight Averages 13 oz.

Orchardists Are Getting Their Biggest *and* Best Profits From This, The Prince of Apples!

Never in the history of modern orcharding has **any** fruit reached such a pinnacle of success as Stark's world-famous apple, The "Delicious." Orchard men—old timers and amateurs—are cashing in with bigger net profits, three to one, than ever before, because they foresaw the gigantic demand this luscious fruit would bring. Right **now** the Christmas spirited man is seeking a fruit **good enough** to eat with his turkey and cranberries—**and he's buying "Delicious" apples. The city man** is even paying as high as 40c **apiece** for this apple. P. D. Southworth, Chaves Co., N. Mex., says: "Always good for $2 to $4 per box"; M. E. Stewart, Chelan Co., Wash., says: "Delicious **our best payer.** Have received as high as $5 per box."

These are but two of the successes that "Delicious" apple trees bring. These are just examples of what this, the world's best apple, can do for **any** orchard man—and in **any** apple climate. The "Delicious," remember, **is not** a restricted fruit—it is the best money-maker you can plant in any section of the country where even the **commonest** apples grow. It is a strong, hardy, deep-rooted tree with ample strength to hold up its heaviest crop of fruit.

On **your** farm—no matter how small it is—there should be at least 10 acres of Stark Trees—"Delicious" trees will net you remarkable profits, supply you with the finest fruit in the world, and keep you healthy—so some "Delicious" trees are really a **necessity.** Other fruit trees from Stark Brothers are just as successful, proportionately, just as profitable. Stark one-year trees can't be equalled **anywhere.**

Stark One-Year Apple

Will Overtake The Older Tree Planted At The Same Time—Will Bear As Quickly—Make a Longer-Lived Orchard Tree—and You Have Your Own Choice of Heading (High or Low.)

Stark one-year apple trees (shown in picture) are one year tops with 3-year-old roots. They are the standard of the orchard planting world. They have proven themselves to be the **ideal** foundation for the finest of fruit trees—and today they are being called for nine times out of ten by old-time orchardists in **preference** to 2-year trees.

Why It Will Pay You To Plant Stark One-Year Apple Trees

In the first place, one-year apple trees cost you **less,** are cheaper to plant and your loss the first season is materially **reduced.** A one-year tree stands the shock of transplanting from the nursery row to its permanent home in your orchard much better than an older tree. There are no extra large roots to be cut off in digging—instead, nearly all the smaller and fibrous roots remain **untouched.** These are the roots that take hold of the soil **quickly** and start **successful growth at once.** Then the one-year tree can be headed just exactly as it should be. Limbs that are to form the framework of the tree can be allowed to grow just the right height from the ground—and just the right number of limbs can be left. All other buds are rubbed off and the **strength** thrown into the ones you want to grow. So the one-year tree **really does** produce fruit for you as quickly as an older one and gives you a **stronger and more vigorous tree.**

The Stark Perfected Method of Growing One-Year Apple Trees

These trees are grown in the finest apple nursery soil in the United States. This soil is selected only after exhaustive study and experiment by our soil experts and Stark Brothers expert nurserymen have been known for nearly 100 years. In our propagation strong No. 1 French and American seedlings are used, scions carefully selected from vigorous, healthy trees bearing best strains of fruit —and our finished product is just what the careful, exacting planter wants.

The Stark Reputation Dates Back Nearly 100 Years

For almost one century **quality** has been the watchword here at the Stark Brothers' Nurseries. Stark nurserymen have always been recognized as progressive leaders in this line; Stark trees have been the acknowledged aristocrats of the nursery world since Judge James Stark came up from Kentucky 96 years ago, with those carefully selected scions in his saddle bags; Stark Trees have invariably been the best paying fruit trees in this country in any proven apple region since Stark propagation methods were first introduced; Stark Tree profits have made a score of millionaire fruit men within the period of Stark Tree supremacy—**and today the Stark reputation means more than ever before to the orchardist, who cannot afford to take chances with inferior, poorly-grown fruit trees!**

Stark Free Special Service Department Is for the Benefit of YOU and Your Orchard

Here we have under one roof more than 100 years of experience in successful fruit growing. We have the accumulated, "boiled-down" knowledge of America's foremost orchardists. We **know** how to make orchards pay **biggest** profits. We **know** how to clean up old, woody, poor-paying orchards and make them produce $100 an acre **and better!** We **know how** to prune—how to spray—how to cultivate, and this **guaranteed** knowledge we now offer to you **absolutely free!** All the 100 years that we've spent in experimenting and succeeding in growing Stark's famous trees—every bit of this **know how** backed by Government statistics, experiment station reports and the **experience** of the country's best orchardists, is ready for you and will be mailed immediately upon receipt of your name and address. We want to hear from every planter—large and small —who reads this paper, and wish to advise the large planter, particularly, that we will meet **any** competition offered for trees equal in quality to our **Stark Trees.**

Write us tonight sure and let us send you free of charge (postage prepaid) **The Stark Orchard Book**—an authority just off the press that will vitally interest you.

Send for This FREE Book

Stark Bros. Nurseries & Orchards Co.
Louisiana, Mo.
Established 1816

Fill In This Coupon NOW!

Stark's Standard 3 to 5 ft. Orchard Grade Yearling Note the Perfect Root System

View in a Field of One Million Stark One-Year Apple

COUPON STARK BRO'S NURSERIES & ORCHARDS CO., Louisiana, Mo. Box 300.
Gentlemen: I am interested in your Stark Special Service Dept. and all information about the ways of improving my orchard. Send me the free books and all information about the Stark Delicious apple. Am also interested in the following varieties:
I expect to plant..... trees this coming season.
Name.....
State.....
R. D.....

WM. G. CAMPBELL
General Manager
JAMES M. IRVINE
Managing Editor
ERNEST H. FAVOR
Horticultural Editor
FLOYD B. NICHOLS
Agricultural Editor

Entered as Second-Class Matter in the Postoffice at St. Joseph, Missouri

The Fruit-Grower and Farmer

"THE NATIONAL FARM MAGAZINE"

AN ILLUSTRATED WEEKLY MAGAZINE FOR PROGRESSIVE AMERICAN FARMERS

Subscription $1.00 a Year

ADVERTISING RATE: 50 Cents Agate Line; $7.00 Inch

Volume 23 | St. Joseph, Missouri, December, 1912 | Number 12

A Successful General Farm in Missouri

Cattle, Tobacco and Fruit Form the Combination

By Floyd B. Nichols, Agricultural Editor

Five thousand and fifty dollars was paid, several years ago, for a Hereford bull from the herd of Benton Gabbert and Son, Dearborn, Mo. More than $1,000 has been received for animals several times. The herd now consists of 175 head. The animals are kept on a 437-acre farm that is on the fertile, loess soils of that section.

This is a good example of a big, successful, general farm. In addition to the Herefords, hogs and horses are grown for market. Considerable wheat is sold. Then, in the last few years, tobacco has been grown as one of the profitable lines. The growing of tobacco is of considerable importance in that section, and the acreage is increasing. A good quality of tobacco is produced and it usually brings a fair price. The yield will average upwards of a ton an acre, which is good.

Most of the Herefords are sold at public sales. Formerly, animals were sold at private sales, but in recent years the auction system is used mostly.

Mr. Gabbert is a member of the Gabbert and Funkhouser Sale Association, which now has twelve members. This association holds an annual sale, at Kansas City, on the first Tuesday and Wednesday in March. This sale has been held for many years, and is one of the events fixed in the minds of the champions of the Hereford breed. The animals now at the head of this herd are Beau Folly 248132 and Bonnie Lad 17th 355366.

The herd is kept on the rich, bluegrass pastures of the farm, in the summer. No grain is fed, usually. Other grasses and legumes are grown on this farm, too, so, in case of a drouth, the herd still would have feed, if the bluegrass was dried up by the heat of the summer. However, this soil stands drought remarkably well, as loess soils usually do. A total failure of crops has not occurred in that section for many years.

The cows are allowed to wean their calves. In speaking of this, Mr. Gabbert said: "I used to determine the time when the calves would be separated from their mothers, but I don't any more. It is not necessary. Let the calves run with the cows, and they will wean them as soon as they need it. We teach the calves to eat grain, largely shelled corn, just as soon as possible. It is remarkable how soon young calves will learn to eat grain, especially if they see other calves eating.

"Cows with calves are wintered on a strong ration of legume hay, mostly alfalfa, in addition to a liberal amount of roughage. We don't feed much grain to cattle, except when we are fitting them for the show ring. We do, however, grow a large acreage of oats, and the bundles are stored in the barn, and are fed to the animals, without threshing, as sheaf oats. This tends to take the place of straight grain, of course. When we are feeding animals that are to be fitted for the show ring, they receive a strong ration of corn, alfalfa and oats. The bull and heifer calves are separated before they get very old."

In speaking of the Hereford breed, Mr. Gabbert said: "I kept Shorthorn cattle, at first. I began raising this breed in 1883, and have been breeding Herefords every year since. I think this is a splendid breed for general farm conditions. They do well when they are being roughed, and when put on full feed, they fatten rapidly. I think they are good animals for the conditions such as are found on Western farms."

Tobacco Is Profitable.

About twenty-five acres of White Burly tobacco are grown. The yields have been averaging about 2,000 pounds of dried leaves to the acre, which were sold, this year, for eight cents a pound. Frequently, the price is higher than this. This industry, in that section, commenced 19 years ago, but the acreage was not large at first. A man from Kentucky came to a farm in that country, and planted some tobacco for his use. The crop grew well and produced leaves of good quality. Several neighbors planted the crop the next year, and as they also grew good plants, the industry was firmly established. The most difficulty the growers had was in learning how to grade and market the crop. Most of the farmers never even had seen a tobacco plant growing, and the marketing methods were hard to learn. About two million pounds of tobacco now are grown, every year, in the Dearborn section.

It takes capital, of course, to grow this crop, for the plants must be stored in barns, to cure. A specially constructed barn is essential for the best results. This year, the crop was large, and many growers did not have sufficient room in their tobacco barns, and some of the product was stored anywhere it would be protected from the weather. A small part of the crop was killed by frost, and was not harvested.

Tobacco stems are rich in potash, and they make a good fertilizer. As the stems remain on the farm, the way the crop is harvested in this section, this makes a valuable by-product. Mr. Gabbert has noticed that an application of these stems aids materially in getting a stand of alfalfa, probably because the potash requirements of alfalfa are heavy.

The seed is sown in beds just as soon as the land can be worked, in the spring. Some of the growers grow their seed, and some buy it. Tobacco seed is expensive. The plants usually are set about the second and third weeks in May. Most of them are set with a machine similar to a tomato plant setting machine. This machine works best when the plants are five inches high. If the plants are set by hand, and a small acreage is set in this way, more range in size is allowable. When set by hand, there should be plenty of moisture in the land.

The plants are set 14 inches apart usually, in rows which are three feet six inches apart. Leaves at the base of the plants interfere with the cultivation, and close cultivation is not possible. Considerable hoeing must be done, around the base of the plants, especially. The crop usually is cultivated four or five times, and hoed three times. Cultivation generally is finished by July 15.

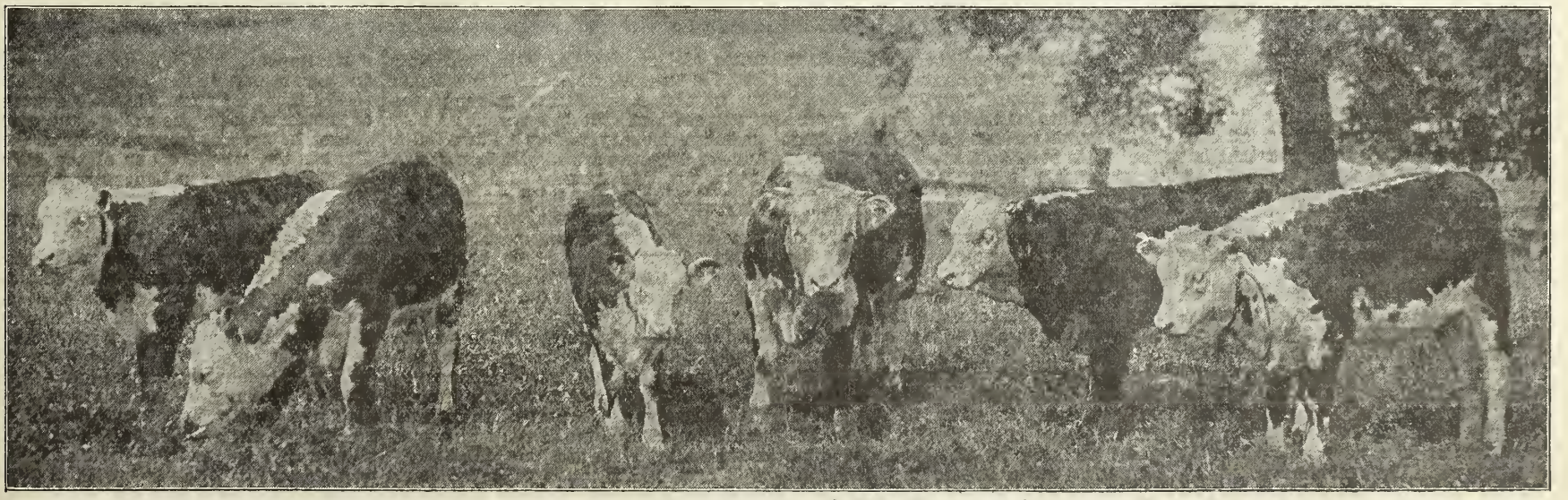
Tobacco Worms Cause Trouble.

The killing of tobacco worms is quite a probem, and requires considerable attention, and work. Paris green, applied with a blower, is the poison used. Then, some of the worms are picked off. The moths that lay the eggs for the first brood of worms usually emerge about June 10, and it is necessary to begin to dust the plants soon after. The second brood comes a month later, and there usually is a third brood after that. The second brood always is the largest, and requires the most attention, and work. Mr. Gabbert used 200 pounds of Paris Green, this year, on 25 acres of tobacco.

As soon as the bloom appears, the tobacco plants are topped, to prevent the growth of seed. Some growers allow the plant to produce seed, but Mr. Gabbert believes better results may be obtained if the plants do not produce seed.

The stalks are cut in the field, and hauled to the barns, to cure. A stick, somewhat similar, but heavier than the lath, is placed in the ground, and a cap, called a "speer," is placed over it. Five of six stalks of tobacco are placed on this stick, by running the speer through the stem near the base, which allows the part of the plant which contains the leaves to hang from the lath. These laths then are hauled to the barns, on specially constructed frames on wagons. The sticks, still holding the stems, then are placed in barns, so the air will

(Continued on page 43.)



BEAU FOLLY YOUNGSTERS ON THE GABBERT FARM.

Winning Success on a Small Farm

The Problems a City Man Had to Face. Strawberries the Solution.

By W. C. Hebdon, Nebraska

Like a great many folks of today, we got the "back to the farm" fever. It came four years ago. At that time we were living near Niagara Falls, and my occupation was a guide at the Falls. It was my duty to show visitors around and under the great cataract. I had to wear a water-proof suit and was in the dampness all day and every day. After eight years it reached the point where my health began to fail. On consulting the doctor he told me I either had to quit the job or it would quit me. As I was young, with a wife and two boys to look after, I decided to take the advice of the doctor and try something else. It was about this time we began to think of farming. I gave up my job as guide and tried several others, but my health was not extra good for a young man of twenty-six years, so we decided to "go West and grow up with the country."

In April, 1908, we made a move in that direction. We owned a little home, but we decided not to sell that until we had another one in sight. My father, mother and two sisters were living in Eastern Nebraska. They looked up the fruit conditions, and as far as their knowledge went, assured me that Blair was a good place to locate. So we sold everything but our home and a few things which we could ship by freight, and arrived in Blair about the middle of April, 1908. We did not want to rush into things, as we were strangers in a strange country, and so decided to take our time and look things over.

A Photograph and a Strawberry Bed.

One of the first things to happen after my arrival here was to be called on to take some photographs of a strawberry patch. The berries were ripe and I surely filled up on strawberries as well as every bit of knowledge, facts and figures I could get. I decided, then and there, to try my luck with fruit. Up to this time it had not been my good fortune to have been or ever lived in the country, having always lived in the city.

My knowledge of the farm was about the same as the average person living in the city. I had a general idea about when the different kinds of fruit got ripe, but outside of that I didn't bother my brains about how it was produced. On poultry, I was not so bad off, as in town I had kept a few chickens.

After spending a year in reading and visiting the different fruit farms, getting all the information possible, I finally decided to make a start, on a nice little five-acre place that I could rent. I leased it for three years, moved on in April, 1909, and started in to see what I could do raising poultry and garden truck. This place already had cherries, plums and grapes in bearing, and I added strawberries.

THE FIRST BERRY FIELD.

My first stumbling block was how to propagate the strawberries. The truth of the matter was, I didn't know whether I had to plant seeds, cuttings, plants, or what was really necessary. From a neighbor I learned the proper way, and for a start, got 1,000 plants from him and set them out. More by good luck than by good management, the most of them grew. To stock my farm, we got a horse, cow, some pigs and chickens, and it was not very long until we felt like real farmers. My wife was learning her part, attending to milk, cream, churning, etc., which was all new to her. I remember our first trip to town with butter and eggs. We made all kinds of mistakes, picked and sold our fruit, and the first year on the farm was gone almost before we realized it.

The next spring, 1910, we were very hopeful. One thing I decided on, was to make strawberries the backbone of my fruit business. I benefitted by the experience of the growers around me in that respect. They had found after many years of experience, that in this particular locality, the demand every year was always greatest for strawberries, and as a result the price was always better than for other kinds of fruit.

Being so inexperienced, I started with only one-fourth of an acre of strawberries. I had to plow some sod ground, and late at that, but made the best of a poor situation. I measured exactly one-fourth of an acre and set it, using the Senator Dunlap variety, putting my rows three feet six inches apart, and the plants two feet apart in the rows. At the same time I branched out in garden truck, not only raising what we used, but tomatoes, peas, peppers and cabbage for sale.

While we were doing fine with the growing end of our business, I bumped up good and hard against the selling end. To peddle it out was not so bad, but to find a market, to pack and ship correctly, and to have the stuff that brought good prices was much more difficult. It was quite a surprise, but I got a day book, a ledger, quotation cards, etc., and it was not long until I was making fine progress with the selling end.

How the Association Helped.

About this time the growers of the neighborhood got together, having found out that the up-to-date way to handle fruit is through an association, and a meeting was called, which nearly all of them attended. After talking things over we decided to try association methods for one year. We signed an agreement, and for myself, was glad to do it, as I had all the troubles I wanted trying to raise the stuff.

With me, the deeper I got into it, the better I liked it, and I liked it so much better than anything I had ever done, that we decided to raise enough money by mortgaging our little home at Niagara Falls to make a payment down on a small place. So we began to look around. Above all other things, I wanted to get some land that would be the best for strawberries and other fruit; not how cheap, but rather how good. We finally decided on a ten-acre place, of fine land, well drained and rich black soil, about one mile from town, with good, new buildings. There was not much fruit already on the place, but that suited me, as it left me free to set it out to the kind I wanted, and as I wanted it. We saw the owner and told him how we were fixed, and he let us pay part down, with the balance in eight years.

The Biggest Job.

In the spring of 1911 we moved. After getting settled I began to get ready for a good-sized strawberry

(Continued on page 36.)

From Desperados to Farmers

Influence of a Colored Minister in Making Farmers of a Lawless Gang on a Mountain Top

By F. Winslow Fegley

Of all the farms in Pennsylvania, where small fruit is raised, probably none other towers above the Welsh Mountain Mission Farm, not because of its lofty situation, but on account of the remarkable good work that has been done for the settlers of this mountain district. Literally speaking, this little farm is probably the only one where Christianity intermingles with fruit culture, solely for Christianity's sake.

The Welsh mountains extend through Lancaster county, Pa., known throughout the country as the "garden spot of Pennsylvania," where tobacco is the chief crop. On either side of this lofty ridge that extends down into Virginia, where the Allen gang at Hillsville wiped out the entire court of one county, there is a wide belt of fertile land, where in the past millions of dollars have been acquired through agricultural pursuits.

Right after the close of the Civil War, lawlessness reigned supreme on top of these lofty mountains. The settlers were about equally divided between white and black. Both figured in court for various crimes, and among the white settlers there was a gang of desperadoes, known as the Buzzard tribe. They lived in mountain huts and the majority of them lived on what they could steal from the farmers in the valleys on either side of the mountain. Abraham and Isaac Buzzard were arrested time and again, and served long terms in the jails and penitentiaries; and today, one is still serving time, and the other is blind and suffering for his sins in a Pennsylvania almshouse. In the heydey of their crimes the costs to Lancaster county to bring to justice black and white violators of the law, who lived on this mountain, often exceeded $3,000 a year.

At about this time there appeared on the scene a colored minister by the name of Rev. Melford Hamilton Hagler. He built a little church and began to spread Christianity among the negro settlers. He was a real Presbyterian missionary among his own folks, and he began to work with hands and brain, for two causes: First, to reform the settlers; and, second, to get them to earn their own living. He began at his own door, clearing land, raising corn and picking huckleberries. At this time the colored folks lived in dugouts, and Rev. Hagler often carried his life in his own hands. Some of his first sermons fell by the wayside, and bore no better fruit than the corn he planted among thorns and briars. But he was a fighter among his own men. He hired them and started to clear some of the wilderness around him. The soil was rich and it took only a few years to bring forth good results. He kept on the good work until 1891, when for several years he left the scene to go to Arkansas as a missionary, but he soon returned and again took up the work. After his return from Arkansas, he visited some of the farmers in the valley, and also addressed several congregations of the Mennonites, who are one of the leading congregations in Lancaster county.

A Mission Farm.

His appeal for aid from the Mennonite Christians, not only for his own people, but for many of the white settlers on the mountain, was finally heeded by this church, who sent a committee to the summit to investigate conditions. The Mennonites had been accustomed to give hundreds of dollars to home missions, and an equal amount annually to the cause of foreign missions, but they never realized before, how much a mission station was needed right at the back doors of their prosperous farmers, until the fact was pressed upon them by Rev. Hagler.

After the committee had reported, it was decided to establish a mission

MT. AIRY SCHOOL ON THE WELCH MOUNTAINS.

farm and a mission industrial workshop on the very summit of the mountain, in the midst of the negro and white settlements, where a decade or two before Rev. Hagler paved the way, and where no white man would have ventured at night, except he was a "Buzzard," or had the audacity of a Jesse James.

The first work those Christian farmers did was to teach the mountaineers that they should earn a livelihood in the sweat of their brows. Timber was quickly removed from many acres. The first supervisor was Rev. Noah H. Mack, who with his wife and Lydia Stauffer, took charge of making farmers and fruit growers of every settler on the mountain.

Rev. Mack was raised and grew to manhood on a large farm in Montgomery county, in a section where Mennonite folks had the honor for a hundred years to be among the best agriculturists and horticulturists in the state. He knew that he had to keep the settlers on this mountain busy, if he wished to keep them out of the clutches of the law. He preached to them on Sundays and during the week he rolled his sleeves above the elbows, and made every other man on that mountain do likewise, who was strong enough to pull out briars, remove trees, lift stones and plant corn, sow wheat and cultivate berries.

After some land had been cleared a large farm-house was erected, constructed of stone, picked from the mountain side. This building was spacious, and in one part a mission store was established, and in the basement looms were installed for making rag carpet.

The next move was to erect a barn to house some of the crops. Then came a mission building, which served as a meeting place on Sundays to study the word of God, and during the week the negro settlers were kept busy making brooms, and manufacturing shirts until enough land could be cleared to keep the settlers busy in the strawberry fields. The shirt factory is not needed any more, on account of things having so changed horticulturally that all the settlers have work.

Rev. Mack soon had things going in his own way, and while he is today the general superintendent of the work, guided by a board of twelve directors of the Mennonite Church, the real work at present is in charge of John S. Musselman, a native of Lancaster county, assisted by Mrs. Lydia Kendig and Miss Anna Martin.

Dwindle of Lawlessness.

As soon as the mountaineers were taught how to grow two blades of grass where heretofore only one grew, and how to raise luscious strawberries in fields that a few years ago were covered with thistles, lawlessness dwindled down to a minimum, so that today the court proceedings caused by the Welsh mountain settlers annually do not reach fifty dollars, being a marked difference to the $3,000, the figures of years ago. Rev. Mack and Mr. Musselman have taught them how to plow, to harrow and to sow, physically, in unpromising fields, and morally in fields that were even less promising at the outset.

The result is, that today, during the strawberry season, the telephone in the mission store tingles all day long, bringing inquiries from dealers in the valleys below, asking how many quarts of strawberries they can supply on the morrow. There are acres and acres of strawberry fields that are still surrounded by big forests, which will soon fall to the woodman's axe, to make room for more strawberry fields. The crop is marketed in two ways. The majority of the berries picked are removed by storekeepers in the nearby towns, who drive over the mountain road every morning and call at the mission store to get them fresh. The other method followed is the delivery of berries by the negro workers, who haul them into the valleys and sell them from house to house, bringing every cent back to the superintendent on their return, for every one who is employed by the Mission must do a strictly honest business and make daily settlement. The Mission pays every employee so much for the work he does. The pickers are paid by the box, and they can either demand cash for them, or have the privilege of exchanging for goods in the Mission store.

What is true of strawberries is equally true of raspberries and blackberries, as far as growing, picking and marketing is concerned, and hundreds of bushels are raised annually.

The ordinary methods of cultivation is closely followed. The strawberry fields are on soil of virgin fertility. Rye is grown and turned under while green. Commercial fertilizer and manure is also used, and rotation of crops is practiced with corn, wheat, oats and grass.

Harvest the Wild Fruits.

Still having access to thousands of acres of land, not under cultivation, where native chestnut trees bring forth fine crops, and where huckleberry bushes supply delicious fruit, the Mission turns the negro settlers' attention to the fact that there is an open avenue to make some money to help them to properly clothe their children. For every quart of chestnuts or huckleberries they pick, they are paid within half a cent of the value they will have when placed on the market. This pays for the extra expense of running this industrial mission and farm, which is in no way operated by the church fathers with the idea of any remuneration other than that of helping to spread Christianity.

The mission store is a necessary adjunct to this fruit farm. Here all the necessities of life are kept, that are needed by white and colored settlers, except tobacco, because the mission fathers do not deem tobacco a necessity of life. Everything is sold to them at as low a figure as possible. Second-hand articles of clothing are kept, so that those whose earnings do not enable them to buy new clothes, will still be kept comfortable at a lesser cost. There are no book accounts, no credit system whatever. The settlers are paid in cash for everything they do at the mission, and they must pay cash for everything they get.

This fruit farm is just in its infancy. Lots of fruit trees have been planted during the last year; both peaches and apples; and other cleared land is intended for orchards.

Besides fruit, the cereal crops receive a good deal of attention, for it is the purpose of having work nearly the whole year round for the settlers, so that when one crop is over, there will be work at another. Corn receives a good deal of attention, and at corn-husking time the negro children even earn snug little sums of money for husking the yellow ears.

Then when good old summer time is over, and the settlers have nothing else to do, the mission is again at their elbows with ways and means. A large amount of broom corn is raised by the thrifty farmers in the valley. This they bring to the mission and negro broom makers turn the straw into brooms, charging so much per broom to do the work. The mission also buys broom corn in large lots to keep their men busy during the winter months. The same method is followed in the carpet industry. The rags are given to the colored women, who sew them together, and they are paid so much per pound for this work, and their husbands get still more for weaving the rags into pretty carpets. As high as 5,000 yards of carpet are manufactured here, and sold throughout the state. The profit goes into the treasury to further improve the fruit farm, and thus giving more work to the settlers, and more joy to their homes.

While this mission fruit farm is on the very summit of the Welsh mountains, it is not removed from the touch of civilization. Telephone wires run into the mission building, and a rural free delivery mail carrier passes over the mountain every day. This 'phone is also the means of introducing the mountaineers to the people of the valley, where the owners of the largest farms have a great deal of trouble with the scarcity of farm help. Since those fruit growers have become Christianized, they can be trusted as faithful farm workers. Mr. Musselman often answers an urgent telephone appeal by sending young negro settlers, both men and women, to the farms to work as farm hands and servants, bringing them still closer to real civilization, and improving them morally and physically.

The great change that has resulted from the establishment of this loftiest fruit farm, is shown at the door of the mountain settlers; where instead of the former dug-outs, they now have comfortable little mountain homes, constructed of logs and frame. Quite a number own a few acres of land, acquired from savings, and on a small scale they are turning to fruit culture for their own financial benefit.

A good school is maintained near the Mission station, where both white and colored children are educated. Two of the pastor's daughters, Mary Isabella and Nancy Ella Hagler, left the mountain and became students at a colored seminary, and are now teaching school in a Pennsylvania city. Other colored children have received the same educational inspiration.

REV. MELFORD H. HAGLER. JOHN S. MUSSELMAN.

STRAWBERRY FIELD OF THE WELSH MOUNTAIN MISSION.

Ohio Market Methods

Unique Auction System in Ohio's Peach District. Cultural Methods

The influence of large bodies of water is what has made many fruit sections. Examples of this are numerous along the great lakes. At no place, however, is a better example than in the Port Clinton, Ohio, peach section. This is one of the really great peach sections of the country. Most of the orchards are as nearly frost proof as one can find in this world of imperfections.

Much of the Port Clinton district has water protection on both sides. They don't have to worry about crop failures there. This year, in that part of the country between Sandusky Bay and Lake Erie the crop was very good, but farther back, where there was water protection on but one side, frost did considerable damage. One of the coldest nights last winter, the temperature went down to 26 degrees below at Columbus, Ohio, while at Port Clinton the temperature was 13 F. below. And Columbus is south, half way across Ohio. The last fruit failure in this section was in 1897, and before that, the last one was 1885.

Peach growing in this section really began about 1870. Before then it was not understood that the combination of the favorable soil with the lake protection would produce the very finest kind of fruit. The district has been gradually extended until it is now about twenty-five miles long and about two to three miles wide. About half of the land is in peaches. On Catawba Island, about 80 per cent of the land is in peaches. This "island" really is connected with the mainland. It is five miles long and two miles wide.

The Farms Are Small.

This Port Clinton district is a section of small farms. Many of the farms on Catawba Island are as small as five and ten acres, and they are not so very much larger other places. William Miller, at Gypsum, owns a farm of 200 acres, and this is the largest in that locality. Most of the growers own their own farms, and most of the work, except during rush seasons, is done by the owners. The fruit growers in this section are prosperous and contented, and most of them belong to the family of The Fruit-Grower and Farmer, thank you.

In addition to preventing the excessively low temperatures in the winter, the lake influences delay the bloom about ten days to two weeks in the spring. On an average, harvest begins about August 20th, with the rush starting September 1st. The harvest usually is over by October 10th. Most of the peaches go to Western Pennsylvania and Ohio towns. But few are shipped west. This section has the competition of the Michigan peach section. Most of the Michigan peaches are shipped to Chicago and other Western points. Most of the crop from the Port Clinton section is sent South. The small towns of Ohio take a large part of the crop.

One of the interesting things about this section is the marketing methods. R. S. Gallagher, a lawyer at Port Clinton, began to auction off the loads of peaches in 1906. He charged one cent a bushel for selling. The idea seemed to take with the growers. The commission house solicitors at first sought to discredit the plan, but, unable to get consignments, became buyers. The auctioneer then built a platform in the street on which the buyers could stand and inspect the fruit as in turn the loads were driven alongside. The next year a "block" was established at Gypsum, a station four miles away, the largest shipping point in the territory. Here during the height of the Elberta and Salway season, as many as 6,000 to 10,000 bushels a day are sold in this way. The market opens at 1 p. m. and continues until no more teams are in line. The growers have adopted a uniform system of grading and packing. Mechanical graders are used, making three sizes, "AA", "A" and "B". A printed slip giving the grade and the name and address of each grower is placed under the netting, with which the basket is covered. The driver gives the auctioneer the number of baskets of each grade his load contains. When sold, the auctioneer hands him a slip with the name of the purchaser, the price paid a bushel for each grade, and the car number at which it is to be unloaded. With the car loader's O. K. on his slip he returns to the platform and gets the purchaser's check upon the local bank, where his funds have been deposited.

HARVESTING PEACHES NEAR PORT CLINTON.

Nearly all the markets supplied can be reached with cars on the road no longer than thirty-six hours. This method brings buyers from many small towns where only one carload can be sold in a season, enabling them to get a supply quickly and return to attend to their marketing. Many of these give orders to brokers who buy and load on a margin of so much a bushel or car. The buyers are kept in close touch by wire with market conditions in the cities, and price fluctuations are quickly shown by the more or less spirited bidding. The grower sometimes receives less than his fruit would bring by consigning, but all uncertainties are eliminated, and he feels better satisfied with a check in his pocket for each day's sales. Those whose orchards are large enough, load their own cars and then sell the loaded car. These usually bring premiums over the wagon fruit.

This year the prices for the AA grade varied from $1.75 to $1.85 a bushel. The price for the A grade was about $1.40 a bushel, while the B grade sold for $1. These prices are for the peaches graded, and free on board cars.

Cooperation Is a Feature.

Not all fruit is sold by auction system. There are two co-operative associations. The Island and Gypsum Fruit Company has thirty members and a capital stock of $5,000. It has a packing station at Gypsum, and the orchard run of peaches is taken to these packing stations, where they are graded and packed. What every man is to receive for his fruit is determined after it is packed.

The Peninsula Fruit Company is another fruit-selling association. It was organized last January. It has a membership of 110. John Muggy is president, and Gilbert Johns is general manager. This association differs from the other in that it has no public packing sheds. All the fruit is packed on the farms of the members, and is sold and delivered on the orders of the manager. There is a membership fee of $5. Some of the fruit is sold at auction, but most of it is not.

INTERIOR OF A PEACH-PACKING HOUSE IN THE OHIO PEACH BELT.

There is a canning factory at Port Clinton that has a large capacity. It buys a large part of the smaller peaches, and furnishes a good market for them.

The methods used on the farm of William Miller are fairly typical of the methods used by the better growers in this section. His farm is of 200 acres, of which fifty acres are in peaches. The principal varieties are Elberta, Smock, Salway and Lemon. The soil the peaches are grown in is a clay loam. Some of the peaches on Catawba Island are grown on a rocky limestone soil, but most of the best peach land in that district is clay loam. The low, muck lands, of which there is a small acreage, are not good peach soils.

The yields on this farm are good. This year, 2,800 bushels of peaches were harvested from the fifteen acres of Elberta trees. One orchard of twenty-year-old Elberta trees averaged three bushels to the tree. His oldest Elberta trees were set in 1887, and some of them are still producing good crops. The long life of the trees in this section is one of the interesting and important things. The reason, of course, is the careful annual pruning the trees receive and the favorable climatic and soil conditions.

In speaking of the care of his orchard, Mr. Miller said: "We head our trees low for convenience in picking and spraying. I believe it is essential, in order to get the best results, that every tree be pruned every winter, and we always do at least a little work on every tree. We take away all broken wood and all growth that needs removing, to preserve low-headed, stocky trees.

How Brush Is Burned.

"The burning of the brush was quite a problem until we constructed our brush burner. Now, all the brush is burned as soon as it is cut, so when we quit work at night no brush is left on the ground. This burning machine consists of a half-round piece of heavy sheet iron, with ends riveted on. This may be placed on a stone boat or a low-wheeled wagon. The principal advantage, of course, is the bed of coals carried along. All that the hands do is to throw the brush on the boat."

Cultivation is given, sometimes, before the leaves come out. The ground is plowed early, mostly with a disk plow. Disk plows are used extensively in that section. The cultivation is continued, mostly by disking, until July 15th. Mr. Miller does not believe it pays to cultivate much after that date. In general, the ground is cultivated after every hard rain.

Most of the orchards in this section are sprayed. Mr. Miller sprays with commercial lime-sulphur, of a strength of 1 to 10. The spray is applied as soon as the frost is out of the soil and before the buds begin to swell. This spraying is mostly for the San Jose Scale, but it also is a remedy for leaf curl. There is very little summer spraying in this section, but it is increasing. Mr. Miller uses a power sprayer, with a 2 H. P. gasoline engine. He usually keeps a pressure of 200 pounds. He has two compressed air spraying outfits also. Compressed air outfits are rather popular in this section, and many growers have them.

Quite a bit of labor is imported in the picking season. The average price paid is about $1.75 a day, without board. A few of the best hands are paid $2.00 a day.

The Port Clinton section, while it is not large, is a very good fruit section. The business has been built up on a very substantial basis. Most of the growers own the land they farm, and do most of the labor in the orchards except during the rush seasons. They get a good price for their produce. In other words, this is a community where the people live on and till their land, and they produce a specialized product that brings in good returns.

Great American Nurseries—A Series

On the Lake Shore of Ohio Has Been Developed One of the Large Nursery Centers. Thousands of Acres in Trees and Shrubs

By Floyd B. Nichols, Agricultural Editor

ARTICLE I.

Between the grape belt of New York and the peach belt of Ohio is Painesville, Ohio, one of the important nursery centers of the country. Fruit growing is quite an important industry in that section, and the business of growing plants has been developed at Painesville until it has reached great proportions. From the trains passing a short distance east of town, the travelers are treated to a magnificent sight. The Storrs & Harrison Nursery is along the Lake Shore tracks there, and it is a very beautiful place.

About 1,200 acres are used by this

THE MORNING "ROUND-UP" OF STORRS-HARRISON EMPLOYES.

firm for the production of nursery stock. More than 400 hands often are employed, and the average is about 275. Almost all lines of nursery stock are handled, and, in addition, quite a business is done in seeds. The company was established in 1853.

There are several types of soil on the farm of the Storrs & Harrison Company. About 300 acres are of sand-gravel loam, and this is used largely for the production of small fruits and shrubs. About fifty acres are of heavy, drained muck soil that are used mostly for growing asparagus and rhubarb, and seedlings of various kinds. The rest of the farm consists of heavy clay loam land used for growing ornamental and fruit trees. Thus, this nursery has soils that possess a range of adaptation that helps greatly in producing the many kinds and varieties of plants.

About 800 acres are tile drained. The tiles are thirty-two feet apart, and the size ranges from three-inch on most of the laterals, to larger sizes where there is more water to be carried. The company still is extending the drainage system, and about twenty acres were drained last year.

Soil Fertility is Maintained.

Every effort is made to maintain the fertility of the soil. The proper handling of the land in a nursery presents some very hard problems anyway, for much of the digging, and frequently the cultivation, must be done at a time when there is an excess of moisture in the ground, and very often the physical condition of the land is injured every time a crop of trees is removed. After the heavier soils are puddled, they are rather hard to get back into good condition. The growing of trees is hard on the soil, and the removal of successive crops, without plenty of attention to the return of the elements that are removed, will result in a depleted soil. One of the things Robert George, manager of the Storrs & Harrison Company, prides himself on is the proper care of the land. Of course, if the land in this nursery, which has been in trees for many years, had not been properly cared for, it would not be possible to produce the quality of trees that are grown.

In speaking of maintaining the fertility and the physical condition of the soil, Mr. George said: "All our land is under a rotation, and when we take a crop of plants off a field we put the field in some legume before we return it to trees again. We have found the legume crop will not only add nitrogen to the soil, but also will help the physical condition. We either put the land in cowpeas, and keep it free from trees for one year, or we put it in red clover and let it stand for two years. We have found we can grow nitrogen cheaper than we can buy it. We have had very good success with red clover.

"We use some commercial fertilizers, mostly potash and acid phosphate. Sixteen per cent acid phosphate costs us $15 a ton, and the muriate of potash about $40 to $45 a ton. These prices are for the material delivered here. Then we use an average of about two cars of manure a week from Cleveland. These cars hold thirty tons each, on an average. They cost us $1 a ton delivered here, and, of course, the manure costs us quite a bit more before we get it on the land. We get over about 150 acres a year. While the cost of this material is considerable, I believe it is profitable for us to use it. If we did not use manure we would have to make a much more liberal use of commercial fertilizers and cover crops, and then I don't believe we would maintain the soil fertility so well as we do now."

Peaches a Main Line.

Peaches is one of the leading lines with this nursery. More than one million trees were budded this year. A large proportion of the trees go to the peach orchards of Michigan where Storrs & Harrison has a fine trade. Many of the owners of the older, bearing orchards in that section have bought trees to plant their land several times, and after the trees become old and die, the owners come back to get more trees to set on the same land. There are many orchards in Michigan that Storrs & Harrison has renewed two or three times.

Peaches are all sold as yearlings and all are budded. Some apples are grafted, but, in general, not a great amount of grafting is done.

Some of the other lines of trees that were budded or grafted this year are: Apples, 200,000 trees; pears, 150,000; plums, 150,000; cherries, 200,000.

About one-third of the acreage is in ornamental plants. This nursery makes a great specialty of this line. About sixty acres are in roses. The Storrs & Harrison nursery is one of the largest growers of hardy, outdoor roses in the world. One of the most interesting things about the nursery is the magnificent acreage of ornamentals. All the ground from the railroad back to the extensive greenhouses and packing sheds, in the summer, is a fine blending of colors, and it is worth the time of anyone who is interested in beautiful plants to stop at Painesville when they are going through that section, and spend a day or more viewing this nursery.

In hardy, ornamental trees, the hardy maple, silver maple and weeping elm are some of the most popular. Shrubs are grown very extensively, and about fifty acres are devoted to this line.

Fifty Thousand Orders.

The Storrs & Harrison Nursery has a fine packing shed that is well equipped. About 50,000 orders were

(Continued on page 42.)

TEN ACRES OF PEONIES AT THE STORRS-HARRISON NURSERIES.

Erosion of Roads

After hard or prolonged rains, roads which have been constructed with a flat surface are often gullied in the center, or, if the road was well crowned, the gutters or ditches are usually badly washed.

As a rule, the damage is more extensive on grades than on level stretches. This is because the damage in general depends on the velocity of water, and this, of course, is controlled by the steepness of the slope. If the water cuts ditches very deep, it might be advisable to reduce the grade of the road, if possible, either by cutting down the summit or filling at the foot of the hill, or both. It must be remembered this is likely to be economical in the end even if the first cost seems high, since it will not only save on future maintenance, but will decrease the tractive force required to pull a load at this point. There are, however, many grades that can not be changed, because of local conditions.

In sandy sections, the wash may be effectively stopped by 2-inch planks from six to twelve inches wide, and cut into 3-foot sections. These short planks are sharpened on one end, and then enough of them to cover three feet in width of the gutter or ditch are driven in edge to edge for a depth of more than three feet, at right angles to the grade of the road. If they are driven in a little more than flush with the gutter, there is no danger of the road machine or drag striking them.

In a clay section, it is practically impossible to drive a plank three feet without splintering it. The method of construction is entirely different from that described for sandy sections. Old logs or railroad ties, if they can be secured, are better under these conditions. They should first be cut into 4-foot lengths. Trenches then are sunk in the gutters at right angles to the road, and the tie or log is placed in the trench. Where the wash is severe, several logs are placed directly over each other, like the flashboards in a dam. The top log or tie is placed at least four inches below the gutter in order to prevent it from coming in contact with a road drag or road machine in operation. The ties or logs are placed from 20 to 60 feet apart, according to the grade of the hill, and it is an easy matter to insert one whenever required.

The chief advantage gained by this use of logs or planks is that deep and dangerous ditches which are not only a menace to travel, but also make the road narrow, are removed. When the planks or logs are used, the entire width of the road can be used by the public, and the road is always safe.

Many sand beds that are bad at all seasons can be improved by mixing clay with sand by means of a plow and harrow and then using the road drag systematically. On the other hand, many clay sections that are bad in wet weather can be improved by first plowing and then mixing in sand by means of the harrow, and finally using the road drag.

Prune Bitter Rot Cankers.

In sections where bitter rot is known to occur, the disease is a constant menace to the apple grower. It varies greatly in virulence in different years, sometimes being so destructive as to destroy the crop over large areas. It seldom bothers the fruit of early apples, as it does not appear on the fruit until mid-summer. It attacks the limbs, however, and forms cankers from which the spores are given off early in the season. The cankers are sunken areas of the bark which are dark in color, adhere closely to the underlying wood and more or less cracked. These areas produce the spores from which the disease is spread.

Remove these cankered limbs in pruning. Where the canker is small and on a large, vigorous limb, pare off the dead bark with the pruning knife, and paint the wound. Spray the trees at least four times the next season with bordeaux mixture.

The Fruit-Grower and Farmer

"The National Farm Magazine" St. Joseph, Missouri

Trade-Mark "Brother Jonathan" and Title Registered in U. S. Patent Office. Copyright, by The Fruit-Grower and Farmer, St. Joseph, Mo.

Address all communications and make remittances payable to The Fruit-Grower, and Farmer, Eighth and Charles Streets, St. Joseph, Mo.

WM. G. CAMPBELL, General Manager E. H. FAVOR, Horticultural Editor
JAMES M. IRVINE, Managing Editor F. B. NICHOLS, Agricultural Editor
C. R. GREISEN, Traveling Advertising Manager

SPECIAL REPRESENTATIVES ADVERTISING DEPARTMENT:

Chicago Office.....I. C. BILLINGSLEA...First Nat'l Bank Bldg.
New York Office.....A. H. BILLINGSLEA.....No. 1 Madison Ave.
Kansas City Office.....MART J. BARRONS..821 New York Life Bldg.
St. Louis Office.....A. D. McKINNEY.....Third Nat'l Bank Bldg.
Minneapolis Office.....ROY. R. RING.....711 Globe Bldg.

ADVERTISING RATE—50 Cents an Agate Line. $7.00 an Inch. Fourteen lines to an inch.
Special Rates—Quarter Page, $78.75; Half Page, $147.00; Full Page, $280.00.
No advertising in class generally termed "objectionable" accepted under any conditions. Editions mailed first day of month. Forms close 20th of preceding month, i. e., January forms close December 20th, etc.

The Fruit-Grower and Farmer will place you in touch with over One Hundred Thousand of Most Prosperous Farmers in America

SUBSCRIPTION RATES—One Dollar a Year; Three Years, $2; Five Years, $3; Ten Years, $5—In Advance. Canadian Subscriptions, $1.50 per Year. Foreign Subscriptions, $2.00 per Year.

We make a rate of 50c or in other words allow a commission of 50 per cent from the one-year rate of One Dollar, to anyone who will send in three or more NEW subscribers. Regular readers may renew at the 50c rate by securing three new subscribers and remitting $2.00 for the four names. We solicit renewals on this basis, as we depend largely on our old subscribers to increase our list. Write for Special Terms and Cash Commissions to Agents.

Remit Coin, Currency, Postoffice Money Order, Express Money Order, Registered Letter or Bank Draft, at our risk. Send stamps if more convenient.

Unless otherwise ordered, subscriptions will commence with month following date of remittance, and continue until ordered stopped. If you desire paper to stop when time is up, notify us. The letter "S" after date on address tag signifies that paper will stop on that date. The address tag stands as receipt for your remittance.

In compiling a list of a hundred thousand subscribers it is an easy matter to make mistakes, but we guarantee fair treatment to everyone. If you find an error in your address tag, or do not receive paper promptly, write us and we will investigate.

Entered as Second Class Matter in the Postoffice at St. Joseph, Missouri.

Volume 23 DECEMBER, 1912 Number 12

Need Help to Solve Marketing Problem.

Selling the farm produce to best advantage is the hardest problem the farmer has to tackle. Dealing with the commission man is not always satisfactory, and direct methods of selling to the consumer are out of all possibility for the greatest amount of farm crops. Associations are helping to find the right markets for wheat, fruit and milk, but it is still a long step before the average producer can dispose of the crops he has raised in a manner that will bring him a better price than he is now receiving.

Not many men who are experts at growing any certain crop are sufficiently skilled in salesmanship to place the crop on the market in such a manner as to get the best money for it. The time of the producer is occupied with raising a crop. That keeps him busy, and no time is available for hunting up the various markets and placing his produce where it will bring the biggest price. The associations have been developed as a means of solving this difficulty, since the association represents the selling department for a group of producers.

But the isolated farmer, the man who is growing a crop away from any considerable number of persons who are growing the same crop, cannot always avail himself of the opportunities of associational selling. He must find his own market, and here is where he faces new conditions. His state agricultural college, farm demonstrators, railroads, bankers and various other organizations are teaching him the best methods for growing his crops, but no one as yet has stepped to the front to teach him how his crops may be sold. The methods of teaching farmers how to farm, the methods of transporting farm produce and methods of packing have all been developed and are still advancing along lines that are distinct advancements, but there is a time coming when it will be necessary to divide all these departments of instruction so as to include one which will teach methods which will put the producer in better position to market his own crop.

The associations will not be displaced, but their methods will be improved. Instead of associations competing with each other, great central associations, made up of several small organizations will and must come into existence, but in addition to this, the producer must be taught how to sell his produce.

The railway lines which are striving to develop the territory along their lines will undoubtedly be the first to take this step. They realize that contented, prosperous farmers are their greatest asset, and this condition cannot be reached until these farmers sell their produce to the best possible advantage. Most of the lands along the lines of those railroads which are doing most to settle the country are peopled by men of limited means. This is the class of people who are in the greatest need of assistance in finding ways to market their crops. Many of them are laboring under conditions which are new and strange. The local markets are unfamiliar to them, the ways of reaching distant markets are unknown to them, and how to sell on either of these possible markets is imperfectly understood.

The immigration departments of any of the big transcontinental railways will answer any inquiry as to where is the best place to open a general merchandise store, laundry, hotel or any other line of business along their line, but not many of them can tell the farmers tributary to their lines where to market their butter fat, apples or potatoes, outside of the farmers' own local market.

Something must be done to help solve the marketing problem. Farmers must get better prices for the crops they grow and the consumers must get these products at lower figures. Larger crops must be grown. There must be no idle acres, and every hill and every tree must produce its fullest every season. How to handle the soil to best advantage must be fully understood by everyone who tills, but in addition there must be a greater dissemination of knowledge about how to sell the products of the soil to better advantage. This can be done by every institution, public and private, which is now aiding the farmer so fully in growing bigger, better crops.

It will not be simply a matter of telling each producer to send his crops to such and such a city and he will get the satisfactory price. Far from it. It will be a bigger, broader problem of teaching the growers how to find the markets himself, how to pack his produce for that market, and whether to sell it direct to the dealers in that city immediately after the harvest, or whether to store it for later sale. As an example: In the last issue of The Fruit-Grower and Farmer, the statement was made that there was no excuse for selling apples so cheaply as was done this year. A Middle Western grower writes, appealing for aid in disposing of a crop of several thousand bushels of apples, saying that all he is offered is 50 cents a hundred pounds. A score or more similar letters have come since the harvest of the apple crop began. What is to be done? These growers need help in finding ways of marketing their crops. They are good growers, and have produced crops of excellent fruit, but how are they to dispose of it? Where are they to find a market? Who will teach them where to find a market? The only way open to them now is to find out by expensive, bitter experience. To learn by this method is a relic of ancestral times. It is out of date, yet for the lack of anything better it must be endured. Market experts are wanted in every farming community just as badly as farm experts. The time is surely not far distant when we shall have teachers of marketing just as we now have men who teach us how to make our acres turn off heavier, better crops. Let that time come quickly.

The Fruit-Grower and Farmer Beginning a New Year.

This issue closes the sixteenth year of this paper. Started as a small publication, with a small circulation and limited influence, it has grown until today it has 100,000 readers and is the most influential paper of the kind in the country.

Under its new name, with its broadened field, it is reasonable to believe that the growth of The Fruit-Grower and Farmer will be more rapid hereafter than it has been up to this time. Certainly we shall strive to make it more helpful to its readers than ever before.

The January number is our annual anniversary number, devoted specially to the subject of spraying. A lot of new things are being developed every year in the fight that is made against insects and diseases. Our readers are leaders in this fight, and we naturally look to them to take a prominent part in the improvements that are made.

We want you to tell us what your experience has been. If you had any unusual experience last season, tell us about it. If you failed, tell us about your failure, for your experience may be even more helpful than if you had succeeded.

Now, here's what we want you to do, to help make the first issue of The Fruit-Grower and Farmer for 1913 the best we have ever sent out: Send us a report of your experience. Tell us how you sprayed your trees and plants and the results that followed. Especially do we want to hear from those whose orchards have not been sprayed heretofore, but who made a fight against their enemies last spring.

For the best article giving experience in spraying, we will give a prize of $5 cash, for the second best, $3, and for the third best, $2. Send a photograph to illustrate the story if possible. Send your report at once, for the great January issue.

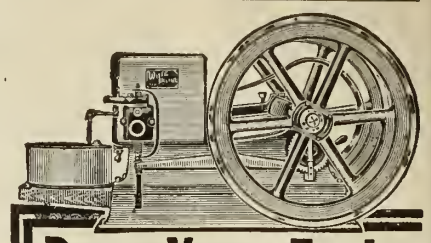
The 1912 Apple Crop.

The apple crop of 1912, which was claimed would be the greatest harvested in this country since 1896, seems to have shrunk wonderfully, if the figures of the American Agriculturist are correct. This publication reports that the crop of the present season is somewhat more than 38,000,000 barrels. The official figures are not in yet, but certainly the crop was much less than was claimed early in the season.

The discouraging feature of the crop, however, was the poor quality of fruit marketed. Thousands of barrels of apples which should have gone to the cider mill or to the evaporator were put on the market, and at this time this low-grade fruit is glutting all the markets of the Middle West.

Prices of apples are not high, but it is believed that the trouble is due chiefly to these apples of poor quality. If they were out of the way, it is thought apples of good quality would bring fair prices. As it is, the markets are full of these apples, keeping good apples out, and preventing the purchase by those who want good fruit.

It is probable that low-grade apples have caused more trouble this season than ever before. It is to be hoped the lesson of the present season will not be lost on those who produced these poor apples.



Does Your Engine Work for 1 Cent an Hour?

If not, get a Witte Engine quick. Because an average of 1 cent an hour per horsepower means you save just about half your running expense. No *quality* engine is offered as low as the Witte is sold direct to you. And the Witte is *conceded* the best gasoline engine in America.

60 Days' Free Trial —on your own place to prove every statement —5 year guarantee if you keep it. And we not only save you middlemen's profits, but give you benefit of low production cost, due to our natural gas well —no expense for power, testing, heating, lighting, fuel, etc. *Prices remarkably low.* Write for books. Mention size needed.

WITTE IRON WORKS CO.
2141 Oakland Ave., Kansas City, Mo.

Now Sold Direct — You Pocket Dealers' Profits

Eight Years' Service
"Have used one of your engines 8 years, and as you know, just ordered another; that speaks for the reliability and economy of the first."—Geo. Plumb, Emporia, Kan.

GUARANTEED TREES

FROM

The Wragg Nursery Company

We are the oldest nursery in the state of Iowa doing business under the same name and management.

We have originated and introduced many new varieties of fruit, such as the Wragg Cherry, Stoddard Plum, Hartford Pear, Iowa Raspberry and many varieties of ornamental and herbaceous plants. Our stock is pedigreed; we know its history.

If you are interested in planting a commercial orchard, write us; if you are only wanting a home orchard, get our catalogue. We are large growers of all kinds of fruit and ornamental trees, shrubs, roses and small fruits adapted for planting in the Mississippi Valley.

We give a list of a few of the items we are growing in cherry and apple:

CHERRY

	5-6 ft.	4-5 ft.	3-4 ft.	2-3 ft.
Montmorency	8950	2364	1910	1642
Wragg	180	1613	4890	5735
Early Richmond	6930	3485	3130	4560

EVERGREENS

We make a specialty of these. We grow them by the million. All Evergreens are transplanted two and three times before offered to the public.

APPLE

	3-yr. 5-6 ft.	2-yr. 4-5 ft.	2-yr. 3-4 ft.	1-yr. 2-3 ft.
Jonathan	1320	18950	7420	44224
Gano	1750	3820	2420	16000
Ragan (Blk Ben)	2620	3345	2083	3128
Grimes Golden	1328	....	1732	1856
Stayman Winesap	1958	1842	2984	5424
N. W. Greening	3228	2143	3846	5427
Delicious	....	484	1830	15483
Ingram	1846	....	1321	6457

The above we give to show our proportion of standard sorts. We have over one-half million apples in other sorts of summer, fall aud winter varieties.

OUR GUARANTEE—We guarantee all our stock to be true to name and delivered in good growing condition. For full information about our stock address

The Wragg Nursery Co.
DES MOINES, IOWA
Landscape Gardeners and Horticulturists

The Banker and the Farmer

It is said that the addition of one grain to each head of wheat grown in the United States will increase the value of our wheat crop by $25,000,000 a year. Better methods of seed selection can increase the number of grains each head contains by much more than one grain. Better methods of farming will accomplish this result, without any additional expense on the part of the farmer, thereby adding $25,000,000—and a great deal more—to the profit of the farmers.

When one considers this, it is easy to understand why bankers' organizations everywhere are taking an interest in the subject of better farming. A few years ago the work of better farming methods was taken up by the Illinois State Bankers' Association, through the efforts of Mr. B. F. Harris of Champaign. At that time the proposition of the banker helping the farmer was entirely new. Now scarcely any meeting of bankers is held without a discussion of the question of how the bankers, individually and collectively, can improve the farming methods of their respective communities.

So general has become the movement among bankers' associations that a conference of bankers' committees on agricultural development and education was recently held at Minneapolis, Minn., at which Mr. Edward A. Rumely delivere a most excellent address, on "Some Thoughts on Agricultural Education."

And why should not the bankers of the country be interested in the welfare of the farmers? Why should not all business men be so interested? Of every dollar the farmer collects for his produce, at least 70 cents goes to the business men of his community. And of his savings, it is safe to say that the bankers are the custodians of most of them. The welfare of the bankers and other business men, therefore, are intimately related with the welfare of the farmers.

Just now there is a great opportunity for bankers to help the fruit-growers of their respective localities. Within recent years horticultural practices have undergone great changes. Fruit trees must be properly pruned, sprayed and otherwise cared for if they are to produce maximum crops. A lot of the men now owning orchards planted their trees when this work was not so necessary, and thousands of them have not yet adapted themselves to the new conditions. Some of them are cutting down their trees. Within the ten years from 1900 to 1910, the number of apple trees in Missouri decreased from about twenty million to somewhat more than fourteen million. The same change was taking place in Iowa, Illinois, Kansas and other states of the Middle West.

The destruction of these orchards represents a great loss to the several states. To cut down an apple tree in full bearing not only means the loss of the years devoted to bringing the tree to bearing age, but it means that the land will be devoted to crops bringing much less returns per acre. For instance, in his address referred to, Mr. Rumely called attention to the value of certain farm crops. Placing the yield of corn at the maximum of 100 bushels per acre, he gave the value of an acre's product at $60; an acre of wheat yielded a return of $34, while an acre of apple trees is capable of producing a crop worth $600.

It is much better, of course, to cut down an unprofitable apple tree than to permit it to stand and bring no returns—but it is infinitely better to preserve the tree and make it produce profitable crops. That this can be done has been demonstrated over and over again. It is a good investment on the part of bankers and other business men, therefore, to help the growers of their respective localities, so that not only shall the trees not be cut down, but they shall be brought to such condition that they produce profitabe crops.

A big job is cut out for the fruit farmers of the Middle West, and they are entitled to the support and encouragement of those whose interests are identical with those of the farmer. It is encouraging to note that the bankers, at least, are coming to an appreciation of this fact and are interested in every move that looks toward better farming methods.

Need of Organizations

If there is one lesson to be derived from the experience of the present season in marketing the apple crop, it is that there must be a better organizaton of the growers, and also there must be more co-operation between the different associations of growers now engaged in selling apples.

In various parts of the country thousands of bushels of apples were permitted to rot on the ground, because no organization was ready to market them, and individual growers were not prepared. In other parts of the country, where shipping associations exist, there was also much loss on account of low prices, because the association of one locality had no sort of co-operation with the associations of other districts in the same part of the country.

The great work of organization for the coming season should be, first, to form associations in sections where the growers are not now organized, and second, to bring about closer co-operation and affiliation of all existing associations.

The second feature of this program is now being worked out. In the Northwestern States the Northwestern Fruit Exchange is perfecting its plans, and by another season will likely be able to do better work than ever before. This is an organization, not of individual growers, but of associations. The general plan is for the local association to look after the details of the local work, such as furnishing supplies to members, inspecting fruit, etc., and the general organization, the Northwestern Fruit Exchange, will look after the selling end of the business.

This organization is to the apple growers of the Northwest very much what the Ozark Fruit-Growers' Association is to the strawberry and peach growers of Southern Missouri and Northern Arkansas. The Ozark Fruit-Growers' Association is composed of many local associations of growers, which look after the growing, grading and packing of the fruit, loading the cars, etc., but the general manager of the larger organization sells the entire crop.

The hard part of the organization work will be to bring individual growers in any locality together. When once they are brought together in a local organization, it is not hard to convince the growers that they should co-operate more closely with the associations in neighboring counties. The really hard job is to get the local associations into good working order.

The Fruit-Grower and Farmer believes firmly in organizations of fruit farmers. We are willing to lend aid to every movement to organize them in any part of the country, and during the present winter we stand ready to co-operate with every forward movement.

Why organize? Some persons seem to think that the purpose of a local organization is to form a trust and raise prices. Such is not the case at all. There are too many districts where apples can be grown for any one district to have a monopoly. But there are other reasons for organizations, and here are some of them:

First—Better methods always follow the organizing of growers. The members are brought together for conference, and an exchange of ideas is always helpful. A standard of grading and packing is established, and even the most careless member of the organization is made to bring his work up to this higher standard.

Second—Supplies for the entire membership can be bought at a lower price than if each member bought his supplies separately. A substantial saving is effected here.

Third—With a good association at work, the fruit of all members is carefully graded and packed under the direction of the inspectors of the association. The cost of packing the crop, therefore, is greatly reduced. Where buyers do the packing, they must maintain large forces of men far from the base of supplies. This is expensive work, and the extra cost is borne, in the long run, by the growers.

Fourth—Because of better methods, improving the quality of the fruit and the adoption of higher standards, better prices are secured for the apples. Thus, not only is the cost of production lowered, but the price received for the fruit is raised, increasing the profits of the growers at both ends.

Believing that growers in every locality should be organized, we want our readers to call on us for help at any time. We have a little pamphlet giving the plan of organization of some of the best shipping associations in the country. This booklet will be sent free of charge to any subscriber who asks for a copy.

Then we shall be glad to send a representative of our publication to meet with the growers in any locality, where possible to do so. Of course, we cannot cover the entire country this season, but so far as possible, we will send a man to help get the growers together and to tell what has been done in other sections of the country.

Let us get together. It will be better for the growers, as we have shown. It will be better for the buyers, for strong associations, which will stand back of the fruits shipped by them, mean a less expensive system of marketing. It will be better for the consumers of fruit, for it will mean that they will get apples of higher quality. They may not pay more for the fruit, but, by eliminating some of the lost motion in the marketing methods, the growers will get more of what they do pay.

The need of proper organization on the part of apple growers was never more forcibly shown than during the present season. We visited one orchard not forty miles from St. Joseph which was typical of thousands of others. The owner of this orchard sold the crop of apples on the trees for $1,500. The man who bought it packed over 5,000 barrels of good, marketable fruit, much of it of extra fancy grade. He likely sold the fruit for $10,000 to $15,000. This orchardist simply did not know what to do with his apples; he did not know how to pack them, nor how to sell them after they were packed. A good, strong organization would have been worth several thousand dollars to this man in handling this season's crop alone. And there were thousands of others just like him.

Now is the time to get together. Call on us for help. Send for our free booklet, and we will personally assist wherever possible. The Fruit-Grower and Farmer stands for the greatest prosperity of its readers, and this is one way to bring about improved conditions.

Read the advertisement of Wilkinson Sprayer Co., on page 38; there is something new in spraying machinery, and the best outfit ever invented for commercial orchards, the invention of a practical orchardist after 20 years' experimenting.—Adv.

Subscription expired? Renew today.

$200 Per Acre From Old Forsaken Orchards

Think of it—old, dilapidated, hog-yard apple trees producing over $200 per acre annually. A few years ago it would have been considered impossible. Today it is being done in all parts of the country. Men are renting—buying—leasing old orchards and turning them into gold mines. It's becoming a regular business. And the only equipment needed is a spraying outfit and a supply of

REX Lime and Sulphur Spray Solution

The effect this solution has on the health and bearing qualities of the trees is little short of a miracle. It kills disease and kills insects. Is always uniform, mixes easiest and does not clog nozzles.

Puts new life—new ginger in the trees. No matter how large your orchard nor how old the trees, they need Rex Lime and Sulphur Solution, and need it bad.

Don't Fool With Home-Made Mixtures

Home-made sprays are not uniform and are not dependable. They do not comply with state laws, are not tested, not analyzed pure, do not give proper results. That's why the government is passing and enforcing such rigid spraying laws. You can't make a mistake in using Rex Lime and Sulphur Solution. It is the accepted standard of merit in every state experimental station as well as the United States Department of Agriculture.

FREE "Rex Spray Bulletin." Send for it.

Tells all about spraying. Every fruit grower needs it. Ask for prices. We also furnish Rex Arsenate of Lead, spray pumps, frost pots, etc. Ask for special literature.

The Rex Company
Omaha, Neb.

Factories at
Rochester, N. Y. Toledo, Ohio
Benicia, Cal. Payette, Idaho
North Yakima, Wash.
Wenatchee, Wash.

Drainage of Irrigated Land

An Important Feature That Is Often Overlooked

By E. B. House, Colorado Experiment Station

The drainage of lands in the State of Colorado is of as great importance as the subject of irrigation itself. We apply water to the soil and call it irrigating; we spead it over the ground and see it sink from sight; we see crops grow and forget all about the excess water we apply. This water, however, is not lost and in later years will return to bless us or curse us, as the case may be, and it usually comes in the form of a curse rather than a blessing.

What is there that detracts more from the appearance of a prosperous farming community, as we drive along the country roads and look at the magnificent crops, than to see here and there large tracts of barren waste covered with white alkali so common in this state, producing absolutely nothing and all on account of a high water table? Perhaps this ground used to be as productive as any in the community but in later years farmers have found it impossible to raise anything upon it. They have finally abandoned it, and there it lies worthless to the farmer and worthless to the community at large.

Why this state of affairs? It is due, as stated before, to the high water table, or, in other words, to the fact that the underground water has risen until it is within a few feet of the surface. Capillary action is then set up and excessive quantities of water work from the water table to the surface of the ground and there evaporate, leaving behind the elements that they carry in solution. These salts form the alkali which we see on the surface of the ground.

Can this land be reclaimed and can it ever be made first class farming land? The answer to this question is "yes." It may be reclaimed in a number of ways, but the only permanent way is to thoroughly drain the tract. The laying out and installation of a drain is not the simplest problem in the world and is too often attempted by men who know nothing about it. My advice to the farmer is to hire some engineer who is capable of making the necessary survey and who knows how to lay out a drain system. Have him not only set the necessary grade stakes, but supervise the laying of the drain. Many drains have failed because of improper installation.

There are a number of different drain tile on the market, and to say that one is good and another is worthless would be not only unfair, but untrue. All of the burned clay tiles, if properly made, will last fairly well and make a suitable pipe for this kind of work. Wooden boxes also have a long life, but I believe it is a mistake to place in the trench open bottomed wooden boxes, unless the fall is ample to give a good velocity to the water. They clog more readily than do the tile pipe and animals are continually digging into them, when water is not running, and filing them up to a greater or less degree with dirt.

Drain tile made of cement are coming into more general use and have the advantage of being easily made at home. A simple little machine is on the market for moulding cement drain tiles.

Water is becoming extremely valuable in Eastern Colorado and in many instances land may be drained, the outlet of the drain being so placed that the discharge enters some irrigation canal, and after filing upon the same the owner may sell it or rent it profitably. This has been done in a number of cases near Fort Collins. In some cases the flow has been sufficient to pay for the installation of the entire drainage system. Drain water makes good late water, as the flow usually continues well into the fall and when water in the ditches becomes low. The seepage water entering the drain is a maximum, hence the value.

The drainage of lands should be considered whenever irrigation is contemplated, because, if the sub-soil of the community does not of itself form a natural drain, it is only a question of time when the underground water will be so increased in volume that the water table will reach the surface in the many low spots. The worst alkali and seeped tracts that could be found in the country have been experimented upon and reclaimed in such a manner that luxuriant crops have been grown upon them, while surrounding them upon all sides was a barren alkali waste. A drainage system properly installed may be counted upon to do the work.

A FRIEND'S ADVICE

Something Worth Listening To.

A young Nebraska man was advised by a friend to eat Grape-Nuts because he was all run down from a spell of fever. He tells the story:

"Last spring I had an attack of fever that left me in a very weak condition. I had to quit work; had no appetite, was nervous and discouraged.

"A friend advised me to eat Grape-Nuts, but I paid no attention to him and kept getting worse as time went by.

"I took many kinds of medicine, but none of them seemed to help me. My system was completely run down, my blood got out of order from want of proper food, and several very large boils broke out on my neck. I was so weak I could hardly walk.

"One day mother ordered some Grape-Nuts and induced me to eat some. I felt better and that night rested fine. As I continued to use the food every day, I grew stronger steadily and now have regained my former good health. I would not be without Grape-Nuts as I believe it is the most health-giving food in the world." Name given by Postum Co., Battle Creek, Mich.

Read the book, "The Road to Wellville," in pkgs. "There's a reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.—Adv.

Horticultural Society Meetings.

Western New York Horticultural Society, Rochester, Dec. 11-13.

Northern Nut Growers' Association, Lancaster, Pa., Dec. 18-19.

Fourth Ohio State Apple Show, Zanesville, Jan. 20-24.

Virginia State Horticultural Society, Lynchburg, Jan. 8-10.

New York State Fruit Growers' Association, Rochester, Jan. 15, 17.

Eastern Fruit Growers' Association, Washington, D. C., Dec. 17.

Nebraska State Horticultural Society, Lincoln, Jan. 20, 24.

Iowa State Horticultural Society, Des Moines, Dec. 10-12.

Southeastern Iowa Horticultural Society, West Liberty, Dec. 3-5.

Southwestern Iowa Horticultural Society, Council Bluffs, Dec. 3-5.

Northwestern Iowa Horticultural Society, Storm Lake, Dec. 3-5.

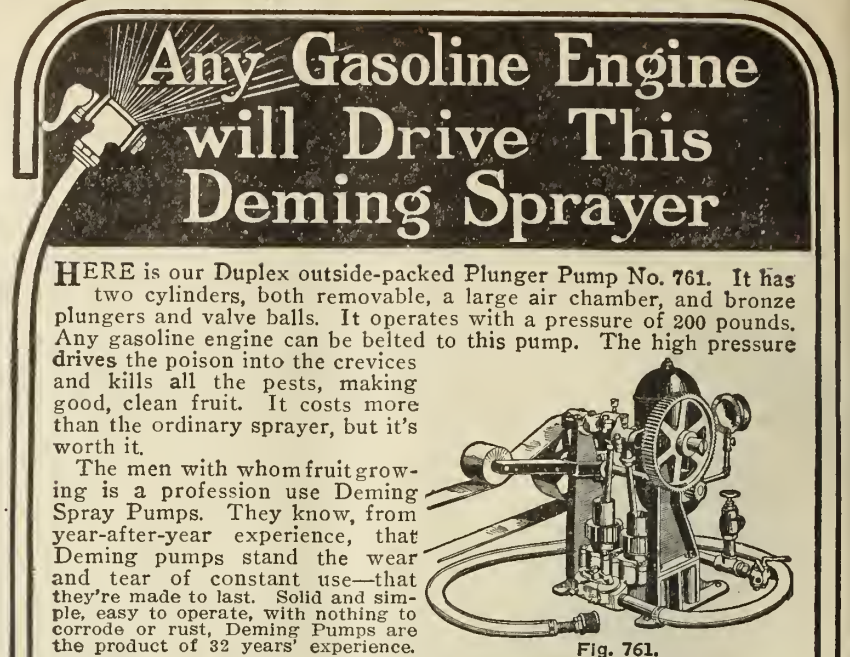
Minnesota State Horticultural Society, Minneapolis, Minn., Dec. 3-6.

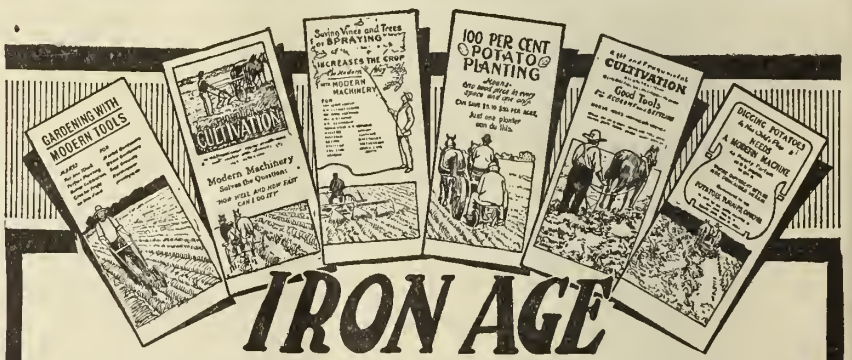
Kansas Horticultural Society, Topeka, Dec. 18-20.

More Canadian Acres Opened.

English capitalists and continental bankers are financing a railway which has plans to build a steam road from Hudson's Bay to the Pacific Ocean, connecting Edmonton with the Peace River and Fort McMurray. By the time the railway is extended into the Peace River country it is the intention of the company to have a large farming settlement to export grain and other farm produce. A large colonization scheme is being organized. The settlers to be placed on 800,000 acres acquired by the company in the Peace River district, will be largely of Dutch origin, but all will be British subjects. The first settlers will be brought from South Africa. The newcomers are experienced farmers, with capital. They are familiar with pioneering. Fifteen hundred settlers of this type are already held in view by the company, and these men will go into the Peace River on the direct understanding that the railway will be built into the country where they are to settle within a certain period.

Peanut butter is growing in popularity. It consists merely of fresh-roasted peanuts ground finely and salted to suit the taste. Several large factories and a large number of smaller ones are now devoted to the manufacture of this product with which to supply the increasing demand.





Government Aids Dairymen

In extension of the Government's work for the development of the dairy industry in the far West, the Dairy Division of the Bureau of Animal Industry, United States Department of Agriculture, has opened a branch office at Salt Lake City, Utah. Mr. A. K. Risser, who was at one time in charge of similar work in the Southern States, will be in charge, and will have the assistance of Mr. F. H. Bothell, expert in market milk inspection, and Mr. G. M. Lambert, expert in creamery management. In addition to these there are now two Dairy Division men working in Idaho in co-operation with the State University, two in North Dakota in co-operation with the State Dairy Commissioner, one in Colorado in co-operation with the Agricultural College, and one man has been assigned to Utah to begin work there at once in co-operation with the Agricultural College. All of these men will be directed from the Salt Lake City office.

The Secretary of Agriculture desires to increase this work in the Western States as rapidly as funds will permit, provided proper co-operative agreement can be made. These men go among the dairy farmers and give them personal aid in improving their work, in building silos, in keeping records of the individual cows to see which are profitable and which are not, and in other ways.

In the Southern States, where dairying has been backward, the field men of the Department of Agriculture have helped many dairymen to increase their profits 200 or 300 per cent within one or two years, and at the same time increased the wholesomeness of their products. It is expected that even better results will be obtained in the West. Nine Southern States which were doing no educational work in dairying at all when the Dairy Division began work there some years ago are now paying a part or all of the cost of that work, and it is producing spendid results.

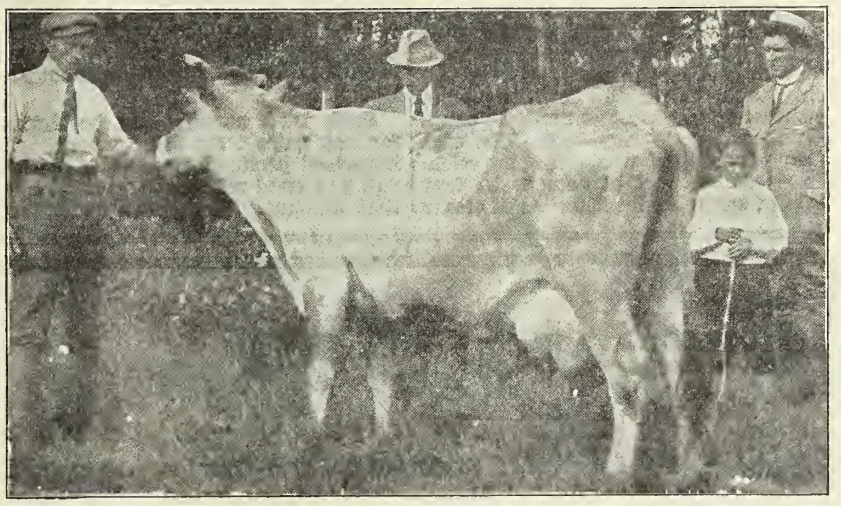
The Far West should stop procuring dairy products from the East. In addition to producing its own supply it should begin to help supply the East. The rich western lands, now that irrigation is being supplied, produce cheap alfalfa and other feeds, and this will make dairying very profitable. Moreover, dairying is necessary in order to make alfalfa raising as profitable as it should be. The all-important thing is that as dairying is started in new regions it should be started right, and the Department of Agriculture is helping to start it right.

Champion Jersey Cow.

"Rosalind of Old Basing," a pure-bred Jersey cow, owned by C. A. Julian-Sharman of Red Deer, Alta., Canada, 100 miles south of Edmonton, was the absent guest of honor the night of October 16, when the Red Deer Board of Trade entertained a hundred representative men from the province, and visitors from neighboring provinces at a banquet in the town hall on the occasion of the animal winning the title of champion dairy cow of the British Empire.

Rosalind's performance, which is without a parallel in the British Empire, was made under an official test. The figures follow:

Highest milk yield in one day, 52 pounds.



"ROSALIND OF OLD BASING."

Highest milk yield in one year, 15,700 pounds.

Milk yield in three years, 37,847½ pounds.

Average butter fat test, 5.16 per cent.

Butter production, one year, 1,031.89 pounds.

Butter production, three years, 2,504.39 pounds.

Value of products in three years, $1,007.50, and three calves, for which the owner has refused $2,000.

Rosalind was bred and raised near Red Deer, and is one of the herd established when Mr. Sharman imported Ex-Pratia, now 22 years old, from the Isle of Jersey. Mr. Sharman also owns Violet of Belvedere, mother of Rosalind; Old Basing, a daughter of Rosalind, and Clarice Violet, a grand-daughter. The three cows have earned $2,344, in the last 12 months.

Hogs After Steers.

Few feeders of cattle attempt to operate without having hogs following the cattle. The most economical way of feeding any feed is to have it as free from extra preparation as possible. For example, the most economical way to feed fodder corn is with the ears attached. The most economical way to feed corn is on the cob, breaking the ear once, says a recent bulletin from the Wisconsin station.

The profit of the feeding transaction is increased by decreasing the cost of preparing the feed. Steers may be made to gain somewhat more rapidly when the corn is shelled or ground; but the farmer is interested in total gains of steers and hogs. Hogs following steers should be vigorous and active, weighing 100 to 150 pounds. Hogs that are too fat are not profitable because they are not active enough. When they become too fat to follow the steers, they should be taken away from the feed lot and thinner hogs put in. Brood sows in pig, and small pigs weighing fifty to sixty pounds are too likely to be injured to be kept in the feed lot. Fat steers return somewhat more feed to the hog than do thinner ones. The age of the cattle also has an effect upon the amount of feed that can be obtained by the hogs; older cattle return somewhat more than younger cattle.

Alfalfa Hogs Make Good Gains.

The character of the feed also has some effect upon the gains made by the hogs. For example, hogs following steers fed on clover or alfalfa hay make better gains than those following steers fed on timothy hay. Some men fear danger to hogs following steers fed cotton-seed meal. Hogs are sometimes injured by the meal, but not by any that has passed through the steer, for there is no evidence that droppings from the steer fed cotton-seed meal are injurious to the hog.

The preparation of the feed will determine the number of hogs which follow the cattle. Dr. H. J. Waters, in Missouri Experiment Station Bulletin 76, from answers to a number of questions sent out to feeders in the corn belt, found an approximate average number of hogs to steer would be as follows—the steers being two-year-old cattle and the hogs weighing 100 to 150 pounds:

Snapped ear corn, 2 to 3 hogs to the steer.

Ear corn, 1½ hogs to the steer.

Shelled corn, 1 to 1½ hogs to the steer.

Crushed or ground corn, ⅓ to ½ hog to the steer.

The average was 1½ hogs to the steer, or 150 hogs per 100 steers.

A Steer's Back.

In selecting feeders, there is perhaps no point more important than the back. A wide, straight, strong back, with a well sprung rib, is essential. The girth of the steer should be large—that is, the distance around the body back of the shoulder should be as large as possible. This means more room for vital organs and insures a better constitution than is otherwise likely to prevail. Associated also with a large girth is a well sprung rib, making a wide back on which there is room for the deposition of a large quantity of high priced meat. There is also greater depth of chest and greater digestive capacity with a large girth.

Order what trees will be needed for spring planting now, while the nurserymen have a full line of stock. There will be a very heavy demand for trees next spring, and late orders will certainly be unfilled.

A Treat Anytime

Crisp delicately browned

Post Toasties

Ready to serve without further cooking by adding cream or milk.

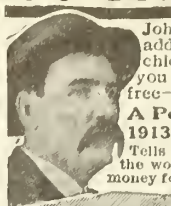
Often used with fresh or canned fruit.

"The Memory Lingers"

—

Postum Cereal Co., Ltd.
Battle Creek, Mich.

Wanted!



Johnson wants your name and address if you are interested in chicken raising. He will send you the famous Old Trusty Book, free—finest published, worth $1.00.

A Postal Brings Johnson's 1913 Old Trusty Book, Free

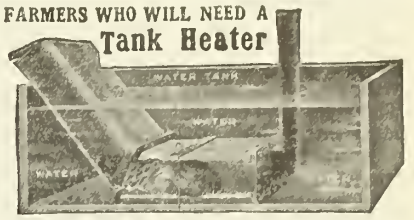
Tells about the incubator sensation of the world. 400,000 sold—all making big money for owners. Tells about 30 to 90 day free trial offer, 10 year guarantee. Price is less than $10.00, freight paid east of Rockies and allowed that far to points beyond. Get the Johnson's Book Free—read all the facts—see hundreds of photographs. Don't miss it. Mail a postal *now* to

Freight Paid East of Rockies That Far if You Live Beyond

Less Than $10

Johnson Incubator Man
Clay Center, Neb.

FARMERS WHO WILL NEED A Tank Heater



should try the NELSON. Note this heater in water tank—no heat going to waste, all under water. Now in use in 25 states. TWO WEEKS' FREE TRIAL. If after two weeks' free trial, you do not think it is worth double the price we ask for it, return it to us and we will pay the freight both ways. We know the heater is the very best on the market and we guarantee it to give satisfaction. To verify this we ask you not to BUY, but to TRY it two weeks free. We want you to be your own judge. All we ask of you is to give our heater a trial. If not sold by your home dealer, write today for catalog and price.

NELSON MFG. CO., 6 Wall St., Deerfield, Wisconsin

THE LAND COMMISSIONER

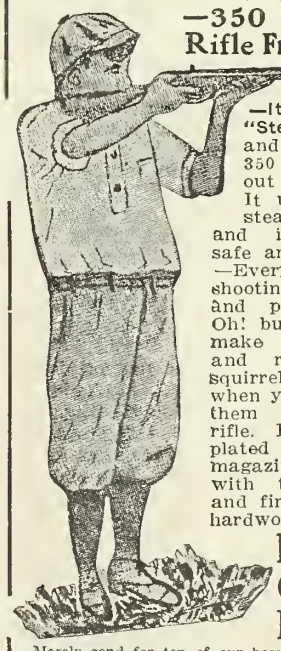
Offers You an 80-Acre Farm Free of One Dollar's Cost on Very Easy Conditions—Can You Use It?

The Live Oak, Perry & Gulf Railroad Company traverses one of the richest agricultural sections in the northern part of Florida, and if you will address a letter or postal card to Mr. J. B. Clark, Land Commissioner, Live Oak, Perry & Gulf Railroad Company, Room 70, Live Oak, Florida, he will write you by return mail, telling you all about this land opening, the wonderful opportunity offered for making money in the territory, and how you can get one of these farms free of cost on easy conditions.

SKUNK UP TO $5.50. All other furs highest prices. Write for price list.
J. I. GLEED, East Aurora, N. Y.

BOYS!

Here's a Genuine "Sterling" —350 Shot Air Rifle Free of Cost



—It's a Genuine "Sterling," Boys and it shoots 350 times without reloading.—It uses air instead of powder, and is perfectly safe and harmless. —Every boy enjoys shooting as a sport and pastime, and Oh! but won't you make the crows and rabbits and squirrels skiddoo, when you get after them with this rifle. It has nickel plated barrel and magazine, fitted with true sights and finely polished hardwood stock.

How to Get this Rifle

Merely send for ten of our beautiful Sepia Art Pictures, which you will give away to ten of your friends who will give you a six months' trial subscription to The Fruit-Grower and Farmer, at our special price of only 25 cents each, and when you have secured the ten orders, send them to us with the money and we will SEND YOU THIS RIFLE FREE OF COST.

The Fruit-Grower & Farmer
ST. JOSEPH, MISSOURI

Making a Farm By Drainage

Sixty bushels of corn an acre, were raised, this year, on eight acres of land on the Cloverleaf Stock Farm, near Kincaid, Kansas, on land recently tile drained. This land never had produced a crop before. The first crop, valuing corn at 50 cents a bushel, paid for raising the corn, for laying the tile, and left a good profit besides.

The eight acres produced 480 bushels of corn, which is worth $240. The cost of the drainage system was $125, leaving $115 to pay for producing the corn, and for profit. Then the value of the land has been increased to more than $100 an acre.

This drained land is a low swale that is typical of thousands of acres in eastern Kansas, and in many sections elsewhere. A shallow ditch ran through the middle, and for several rods on each side water stood much of the year. The only growth was willows, some water grass and weeds. The field was too wet for pasture. The land never had produced anything.

Mont Van Buskirk is the owner. There are no other tile drains in that section. A member of the staff of The Fruit-Grower and Farmer visited this place recently, and while there, asked Mr. Van Buskirk why he had decided on tile drainage. "Well, I guess you can give credit to H. B. Walker, drainage engineer at the Kansas Agricultural College," he replied. "He gave an address on farm drainage at the farmers' institute here, and after the institute was over, he went out to the field with me, and we looked the prospect over. He advised me to put in tiling, and gave me the plans. His visit was a mighty profitable thing for me.

"This field was not a difficult engineering proposition at all. It is just similar to the wet spots on most farms in this section, that are too wet to be farmed. Soil of this kind is the richest sort, and all it needs is to have the surplus water removed, and it will produce crops much better than average land."

Through the middle of the wet land, near where the shallow ditch had been, a six-inch line of tile was placed. On either side, on slightly higher land, was placed a line of four-inch tiles. One of these smaller lines was 55 rods long, the other 14 rods. Two short, four-inch laterals were used, in ad- The fall was fairly good, so ing was an easy proposition. Tha is the case, when draining low, los.

The tiles ced three feet deep. The cost g the ditches was 35 cents a rod. ne work was done by contract, and this included the cost of laying the tiles, and filling the ditches after the tiles were laid.

The main ditch has an intake made of rock and gravel, which covers the tiles, at the upper end, to care for the water that comes from farms above. The outlet is protected by rods and wire netting to keep out mice and other small animals that might enter when no water was flowing in the drain.

The system was constructed in the summer of 1911, too late to put in a crop. Most of the land was covered with willows, which caused some trouble when the land was plowed. The largest were grubbed. The compact roots of the willows forced the runners of the corn planter out of the ground some places, and this reduced the percentage of stand materially. The land was well cultivated, so most of the willows were killed, and they will not cause any trouble next year.

This land has received the wash from the surrounding hills, and the soil is very deep. In most places, the soil was the same at the bottom of the tile ditches as it is at the top. This is typical of wet spots in that section.

In speaking of the way the field dries, after a rain, Mr. Van Buskirk said: "The low, tile drained portion of the field can be cultivated sooner than the higher portions where the tiling has not been placed. The reason is obvious. The drainage from the low land is almost perfect through the tiles, and it flows out rapidly. On the higher land, it must seep away by percolation through the soil, and drainage is slower."

Mr. Van Buskirk has obtained some swale this winter, in just the same way. Cement tiles will be used on most of this land. Mr. Van Buskirk uses a Farmers' Friend cement tile making machine. This machine is made at St. John, Mich., and costs $35.

CORN ON THE DRAINED LAND OF MONT VAN BUSKIRK.

In speaking of the operation of this machine, he said: "For cement tiles 12 inches long and six inches in diameter the cost of the material was two cents each. This was for tiles made last winter, when cement was 20 cents a sack, which is very low. The cost of four-inch tiles was one cent each. We used one part of cement to four parts of sand. About 200 tiles of either kind can be made with this machine in a day.

"I don't think there is very much to be saved by making cement tiles, over the cost of clay tiles, after the labor is considered. These prices I have quoted merely are the cost of the sand and cement. But when a farmer desires to do the work himself and to have some employment at odd times, it may pay him to make his tiles. I believe well constructed cement tiles are the equal of clay tiles."

Mr. Van Buskirk has obtained some profitable results by tile drainage. His results can easily be duplicated on thousands of farms in that section, however. On many farms, conditions similar to the ones present on this farm, may be found, and all that is needed is drainage to make them profitable.

Such land usually can be drained for not more than $15 an acre. The increased producing power of the land will pay good returns on several times that amount. Most corn on average land in that section yields about 20 bushels an acre. This was not a favorable crop this year. Mr. Van Buskirk can place a greatly increased yield on the credit side of his tile drainage account.

Dairy Opportunities In the West.

F. S. Peer, a dairy cattle importer of Ithaca, N. Y., recently made a trip through the West. In speaking of the opportunities for dairying there, he said:

"Dairying has become a big institution in the East, but the West is the really great field for it, and I am expecting to see some notable achievements there the next few years. The little island of Jersey will give an idea of the possibilities of dairying. There the Jersey originated, and there has been no intermixture of the breed for two hundred years.

"The island has a population of less than fifty thousand, and it has about fifty thousand visitors annually. There are only twenty thousand acres of farming land, yet it feeds its people and the visitors and exports between three and four million dollars' worth of farm products annually. Only 20 per cent of the farmers are land owners. The others pay from $75 to $100 a year rent an acre for land, and are prosperous.

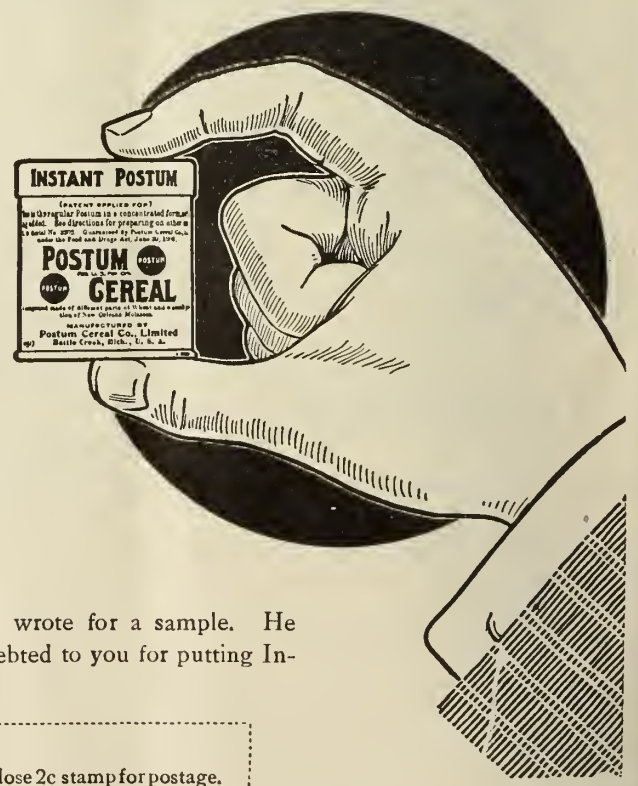
"Now, out West here, the farmers have just begun to realize the possibilities of dairying. Community associations devoted to particular dairy breeds are being organized, which is a move in the right direction. In that way a breed can be promoted more economically and with greater profit to the farmers interested. On the Island of Jersey no breed except the Jersey is found. Its neighbor, Guernsey, contains no cattle except the Guernsey."

Subscription expired? Renew today.

Free to You

For 2c stamp (for postage) with attached Coupon we will send to any reader of this paper a trial tin (enough for 5 cups) of

Instant Postum



This new food drink has a winning flavour and is a most satisfying beverage. It comes in powdered form and is prepared **instantly** with hot water.

The president of one of the biggest pattern houses in America answered an ad. like this and received a sample. He says: "The greatest hit ever made for the health of mankind you made when you gave to the world Instant Postum."

One of the owners of a great American magazine wrote for a sample. He says: "I am delighted with it. The public is indebted to you for putting Instant Postum on the market."

Postum Cereal Co., Ltd., Battle Creek, Mich.
Please send me trial tin of Instant Postum for which I enclose 2c stamp for postage.

Name_____

Address_____

Grocer's Name is_____

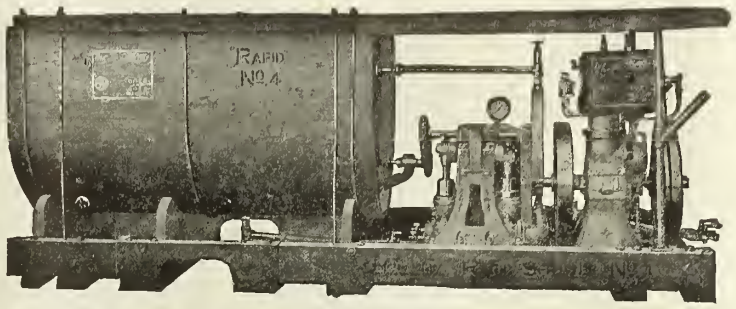
Write For It

Beautiful Apples in Great Quantities are Assured If You Use

THE "New-Way"

High Pressure Power Sprayer

By systematic spraying with a "NEW WAY" we rid our orchard of all signs of scale. —Mt. St. Alphonsus, Esopus, N. Y.



We are the only ones who had apples, and they were the finest the buyers had ever seen. They were sprayed with a "NEW WAY."—Wright Orchard Co., Watson, Ill.

Guaranteed to carry high pressure continuously. Pump either two or four cylinders. Straight crank with adjustable bearings close together, no chance for breakage. Drawn steel air dome tested at 600 pounds pressure, no danger of bursting as with cast iron domes. Engine—The "NEW WAY" Air Cooled, the highest quality engine ever put on a sprayer. Most sprayers are equipped with cheap power that will not stand up under continuous high pressure. Built complete in one factory.

Ask for Catalog S-1

THE "New-Way" MOTOR COMPANY
LANSING, MICHIGAN, U.S.A.

25 ASH STREET

Clean the Orchard Now

When apple harvest is over, a new season's work begins; it is the work of preparing the orchard for the next crop. The season just closed has witnessed the production of a good crop through all of the apple producing sections. Nowhere were there orchards in any number which did not have at least a fair crop, even at harvest. In many, the trees were burdened and broken by the weight of their fruit. A new year begins when the last apple is picked, and begins with the job of cleaning up the orchard, cutting out the broken limbs, and preparing it for the winter spraying that must be given in scale infected localities.

This work of cleaning the orchard as soon as the harvest is completed is no joke. It is a serious, necessary, important job, just as essential in fact as cleaning the dairy when the butter is made. It is only secondary in importance to spraying. Combatting the bugs and fungi is rendered much more difficult in orchards which have not had the rubbish, broken and dead limbs removed and fence rows cleaned out, than it is where the orchard is clean. Rubbish, dead leaves, brush, shaggy bark and weeds all make splendid hiding places for innumerable insects and fungi during the winter. The codling moth, leaf miner, curculio, fall web worm, tent caterpillar, and other devastating orchard insects spend the winter under loose scales of bark, under fallen leaves and in rubbish about the orchard. A host of other insects bury themselves just below the surface of the orchard soil. Fallen leaves serve as the wintering places for many of the troublesome orchard fungi, and when all of these enemies of the orchard are allowed to remain unmolested during the winter, they have a far better chance to continue their destructive work the next season.

Begin the cleaning by disposing of the apples that litter the ground. Turn the hogs in the orchard, if you cannot do better. Cull piles afford excellent winter quarters for codling moths. Plow the orchard before the ground freezes, and let it lay rough all winter. This will bury the leaves and break the chambers of insects which have made their winter quarters in the soil. Clean the weeds from around the trees, and if the trunks are very shaggy with scales of bark, scrape them carefully, not deep enough to damage the bark, but sufficient to remove the scales. This will destroy the hiding places of a lot of bugs. Then begin the pruning.

Pruning can be done at all times during the winter when the wood is not actually frozen, except in sections where the winters are very dry. There is always a tendency for the cambium to die around the edges of a wound made in late fall or winter, and this sometimes progresses so far that the bark becomes dead for several inches back. Don't take this, however, as an excuse for not beginning your pruning now. It is only in the high valleys of the West and in the cold North where the winters are long and severe, that early pruning causes any dying back of the bark, and even there, this injury is not particularly serious. Remove the broken limbs. Prune out the water sprouts which were not rubbed off while young and tender last summer. Do the heaviest and roughest of the pruning now, and the remainder may safely wait until spring. But whatever you do, clean up the orchard and get rid of the rubbish before the bugs have time to hatch. By doing this work now, there will not be such a rush in the spring.

Fighting Chinch Bugs With Fire.

The chinch bug cost the state of Missouri, approximately $5,000,000.00 this year. Unless immediate steps are taken to destroy the swarms which are living over during the winter this loss will be greatly increased next year.

All meadows, pastures, roads, waste lands and other fields, which are heavily overgrown, should be carefully examined now for the hibernating chinch bugs. Those fields near wheat and corn fields which were infested last summer should be examined with special care. The insects hide deep down in clumps of grass, under leaves and rubbish and in many cases their presence can be detected from the disagreeable odor of the crushed bugs, even before one finds them in their hiding places.

Wherever they are found, the fields should be burned over immediately and carefully so that every possible shelter will be destroyed. The wind should not be too strong so that the heat will penetrate down into the clumps of grass and make a clean job. Farmers should co-operate in burning over all public highways and railroad right of ways in the infested regions. With careful, systematic burning of all harboring places in the fall, a large per cent of the millions of hibernating bugs will be killed by the heat directly and many more left exposed to the winter. After each and every farmer has done all he can to destroy the pest during the winter, the fight will be well enough started so that, if taken up in time next summer, the injury from the pests may be greatly reduced.

L. HASEMAN.

Keeping Up the Milk Yield.

Now is the time to commence feeding the milk cows. It is true the grass is still green, but it has not much feeding value. A cattle feeder does not think for a moment of finishing off a bunch of steers on this fall grass. Why should a dairyman expect the cows to maintain their milk yield on it?

Butter fat is scarce. The price is high and is going higher. It will pay to produce more butter fat, but it cannot be done by feeding the cows fall grass, corn stalks and timothy hay. It is also a mistake to neglect the cows for a few weeks, intending to make amends by liberal feeding when winter comes. It is important that the milk yield never be allowed to decline. It is almost impossible to bring a cow back to her normal flow after it has been permitted to decline.

Our No. 190 Horizontal Barrel Sprayer, solidly built on skids, is shipped ready for work in orchard, garden or field, in any wagon, cart, etc.

Pump outside—all parts easy to get at. No waste of time; no unpleasant work with the hands in the solution, trying to fix valves or packing. No corrosion. Heavy pressure. Four row and orchard attachments.

IRON AGE SPRAYERS

include Horizontal and Vertical Barrel Sprayers, Bucket Pumps, 50, 100, 150 and 250-gallon Power Sprayers, Tractlon Sprayers. Ask your dealer about them. Write for our new Sprayer booklet and another valuable book on spraying. Full line of farm, garden and orchard tools.

Bateman Mfg. Co., Box 506-S, Grenloch, N.J.

It is important that fall feeding be commenced now before the milk flow is cut down by short grass and scant feed. Those who are fortunate enough to own a silo should give each cow about 25 pounds of silage a day. Every cow should have all the clover, alfalfa or cowpea hay she will clean up. This will amount to about ten pounds a day if the silage is fed. If silage is not fed more hay should be given. It is well to remember that cowpea hay is one of the cheapest of dairy feeds.

Cows giving over a gallon of milk a day should be fed grain. A good mixture is corn chop mixed with bran or cottonseed meal. Corn and cob meal may be substituted for the chop. A pound of this mixture should be given each day for every three pounds of milk produced. The best of cows will not produce milk unless fed liberally on the right kind of feed.

P. M. BRANDT.

Subscription expired? Renew today.

Fall Plowing

The fall of 1912 has been an unusually wet one so that the land in most localities in irrigated or unirrigated districts, is soaked.

The question is frequently asked, should land of this nature be plowed in the fall if no crop is to be put in this fall.

The answer will depend somewhat upon weather conditions from now on. If the wet weather should cease and conditions should become right for plowing, that is the surface dry up enough to permit of plowing without puddling the soil, it would be highly advisable and desirable to plow as much as possible of this land in the fall of 1912 in preparation of the seed bed for crops to be planted in 1913. Especially on heavy soils it would be advisable to plow deeply, eight to twelve inches, if the plowman has the necessary power to do so. The plow might be followed with the disk, which would compact the soil and still leave a roughened surface.

Where such crops as sugar beets are to be put in, if the land can be plowed yet this fall, plowing six to eight inches deep, then in the spring of 1913, if it is possible to give a light coating of manure and plow twelve to fourteen inches deep, greatly increased yields of sugar beets will result, if proper care is taken in pulverizing and leveling the seed bed.

Some experiments that bear light on this practice were carried out on the experiment station farm in 1910 and 1911. In 1910 all of the sugar beet land was spring plowed. None of it was plowed over eight inches deep, that being as deep as the plows could be forced into the ground. A deep tillage plow would have plowed deeper but the common turn plow could not be made to penetrate to a greater depth. The year of 1910 was one of short water supply and, as a result, the beets made a short, turnip-like growth.

In preparing the land for beets in 1911, the land was fall plowed eight inches deep in 1910, given a coat of manure in the spring, and plowed 12 inches deep after manuring. Although the year of 1911 was drier than 1910 and we had to put up with one less irrigation, our yield of beets was over twenty tons in 1911, while in 1910 it was just over seven tons. The only essential difference in the treatment of the seed bed under the two conditions was the double plowing, as each field had been given a dressing of manure. On plats which were plowed shallow in 1911, no better results were obtained than had been obtained in 1910.

ALVIN KEYSER.
Colorado Experiment Station.

A New Orchard Tractor.

A tractor especialy designed for orchard work has been recently acquired by the M. Rumley Co., of LaPorte, Ind. This machine is built very low, its height being four and one-half feet, without the limb shields, enabling it to work to good advantage in orchards, as it will easily pass under the limbs.

Fruit growers have long felt the need for a tractor in orchard work, but most of those which have been introduced have been too heavy and cumbersome for the purpose. This tractor weighs only 8,200 pounds, and will pull four to six plows. The engines are of the two cylinder, two cycle type, rated at 35 brake H. P. and will develop 18 horsepower at the draw bar, and is operated with gasoline, kerosene or distillate. It can be turned in a radius of ten feet, and handled as easily as a team of horses, making it well adapted to working in small fields and among trees.

Build Up a Good Beef Herd.

To build up a herd of good cattle, select pure bred sires of the type and breed desired. Mate these with common cows, if better cows of high grade or pure breeding are not available. Save the female calves which most closely conform to the desired type. Continue to mate these with good pure bred bulls and save the best female offspring as before. Although total purity of blood will never be attained in case only common or grade cows were available for foundation stock, the desired type can be obtained and a world of good along the line of improvement can be accomplished.

Maloy Appointed Treasurer.

According to advices from John Hall, Secretary of the American Association of Nurserymen, Mr. Chas. J. Maloy has been appointed treasurer of the association, to fill the unexpired term of the late C. L. Yates.

How About Alfalfa.

Alfalfa seed is lower priced than usual. If you desire to sow this crop, you never will get a better time than next spring, or next fall, if spring sowing does not do well in your community.

As agriculture assumes a more permanent form, and systems of farm management are somewhat definitely worked out, temporary and poorly constructed farm buildings are rapidly disappearing.

Many times a dollar's worth in a year's subscription to The Fruit-Grower and Farmer.

20,000 Hot-Bed Sash in Lots to Suit—at Low Prices

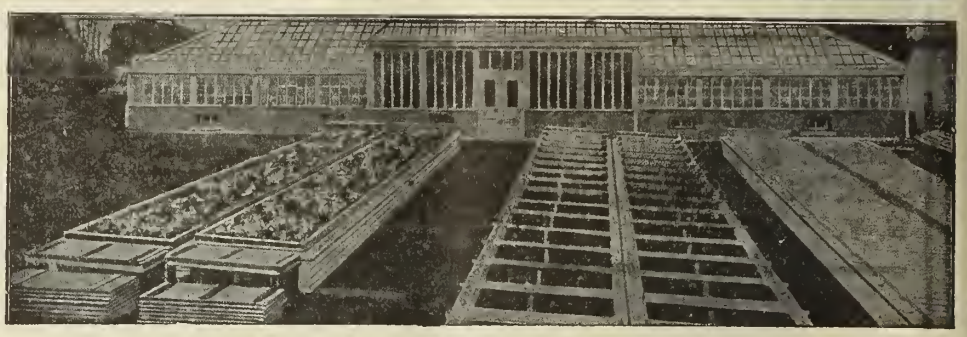
Red Cypress, Blind Mortised, Double Shouldered Joints
3x6 ft., 1⅜-in. Thick, Glazed with 6-in. Glass in Best Putty.
Ready for Quick Shipment—Safe Delivery Guaranteed

$1.69 Each

Start Hot-Beds Early

Raise Garden Truck Under Glass, in Hot-Beds and Cold-Frames, at Small Cost to You, and Make a Big Profit.

Now is the time to get your Hot-Beds started, insuring big profits on early vegetables, such as Cauliflower, Sweet Potatoes, Parsley, Egg Plant, Lettuce, Radishes, Tomatoes, Onions, Celery, Rhubarb, Asparagus, etc.

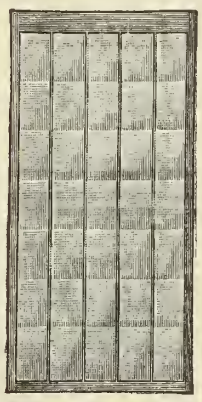


Make Your Garden Yield All the Year 'Round

We want to send a free copy of our valuable new book on **"Hot-Beds; Their Uses, Cost and Construction,"** to every fruit grower, farmer, market gardener, florist—everybody who has a garden, whether large or small. We want to tell you about the remarkable improvements we have made in the design and construction of Hot-Bed Sash, and all about our ready-made Frames and Sub-Frames, which save time, trouble and expense.

We manufacture Hot-Bed Sash and equipment in our great Millwork Plant in such enormous quantities that our prices are the lowest in America. Today, Gordon-Van Tine Hot-Bed Sash are admittedly the best on the market. Under the stimulus of our low prices the use of Hot-Beds has increased tremendously.

The use of Hot-Beds extends the growing season throughout the entire year. The owner of a Hot-Bed gets early vegetables long before the non-user, and no investment pays bigger returns in both profit and pleasure.



Solid Sash that Last! All our Hot-Bed Sash are made of clear, selected Red Cypress. Joints are **blind-mortised, double-shouldered,** fitted snugly and moisture-proof. No open joints! No chance for moisture to enter and play havoc with the sash! A sash that won't twist, spring in the middle, pull loose, crack the glass or loosen the putty!

We use plenty of points and the finest quality of Greenhouse Putty. And every Gordon-Van Tine Hot-Bed Sash is **primed in pure Raw Linseed Oil.** They are as solid and substantial as careful workmanship and best materials can make them. They are the **Sash that Last!** We sell these high-grade, scientifically constructed Hot-Bed Sash—**glazed complete**—for less money than retail dealers ask for common open sash.

Hot-Bed Sash
Size 3x6—1⅜ With 6-in Glass **$1.69**

Write for FREE BOOK on "Hot-Beds; Their Uses, Cost and Construction"

Cut Prices on Hot-Bed Sash

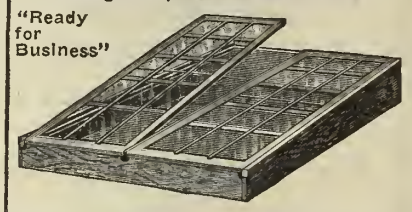
Size 3x6 ft., 1⅜, Glazed	6x10 Glass	$1.69
Size 3x6 ft., 1¾, Glazed	6x10 Glass	2.40
Size 3x6 ft., 1⅜, Glazed	10x14 Glass	2.00
Size 3x6 ft., 1¾, Glazed	10x14 Glass	2.54
Size 3x6, 1⅜, with Bar, Glazed	10x14 Glass	2.14
Size 3x6, 1¾, with Bar, Glazed	10x14 Glass	2.54

Glazed with Double-Strength Glass, add 20c.

Complete Hot-Bed Outfit ... $12.50

Including Sash, Frames and Sub-Frames

"Ready for Business"



Gordon-Van Tine Hot-Bed Outfits consist of our regular Hot-Bed Sash and complete Frames (for above ground) and Sub-Frames (for the pit). Frames are of Cypress. Each part cut to exact size. Angle Irons with holes punched for screws. Note low prices:

Outfit No. 1 2 glazed Hot-Bed Sash, 3x6 feet, 1⅜, 6-in. glass; 1 Cypress Frame for 2 Sash; 1 Sub-Frame, all carefully crated for shipment..... **$12.50**

Outfit No. 2 2 glazed Hot-Bed Sash, 3x6 feet, 1⅜, 10-inch glass; 1 Cypress Frame for 2 Sash; 1 Sub-Frame, all carefully crated for shipment..... **$12.55**

Outfit No. 3 2 glazed Hot-Bed Sash, 3x6 feet, 1⅜, 10-in. glass; with CENTER BAR; 1 Cypress Frame for 2 Sash; 1 Sub-Frame, all carefully crated for shipment **$12.75**

For Double-Strength Glass, add 40c net to price of each outfit. Hot-Bed Frames, $5.70 each. Sub-Frames, $4.25 each.

Explains the secrets of success in the use of Hot-Beds and Cold-Frames. Gives money-making suggestions on raising Vegetables, Flowers, etc. How to Prepare and Care for Hot-Beds, Where to Locate Them. How to Make Cold-Frames. Brimful of helps and hints. Free for the asking. Write at once.

Gordon-Van Tine Co. 4035 Case St., Davenport, Iowa

Buy Bagby Grown Trees

The best that money, careful attention and a favorable soil can produce. PEACH trees, we grow them TRUE TO NAME, NO BORERS, no root knots, no disease. APPLE, CHERRY, PEAR, PLUM, APRICOT and other nursery stock, all of the highest quality, sold direct to Nurserymen, Commercial Orchardists or the PLANTER for HOME USE. Our prices are RIGHT. We pay the freight, guarantee satisfactory quality, and arrival at your station, in good condition. Send for Price List. Some BIG BARGAINS to early buyers.

NEW HAVEN NURSERIES

(J. BAGBY & SONS CO.) Box 125 NEW HAVEN, MISSOURI

Things to Do in December

Many of the readers of The Fruit-Grower and Farmer keep their paper in a permanent file. Practically all readers keep them for several months. Information in the past issues that is of importance for December work may readily be found by referring to this department.

Continue the fall plowing, if the weather will permit. Leave the ground rough so that it will soak up more of the winter rains and snow for the use of crops next summer. It has a great effect in helping control insects. Refer to pages 9, 26 and 34 in the last issue.

Much of the work of cleaning up the orchards can be done in December. See page 12 of The Fruit-Grower and Farmer for November, and page 173 of The Fruit-Growers Guide-Book.

Be careful about the winter pasturing of wheat. Heavy pasturing cuts down the yield. There are some exceptions, however. Read about them again on page 9 of the August number.

Pasture land can be made more productive by a little work at this time of the year. Rocks, weeds, brush all need attention, and perhaps a little fall or winter seeding will help. See the article about pastures on page 19 of the August number. It contains some good suggestions that can be made use of now.

Gullies on a farm indicate carelessness and wasteful farming methods. Fill them up now. It is a job that can be made yield a big profit. On page 20 of the November number is an article that tells how they may be filled.

Have you ordered the nursery stock for fall planting? It is time this was done, as the ground will soon freeze, and the planting must be put off until spring. In the milder climates, fall planting is best. Read once more the article on page 22, November, and page 36 of The Fruit-Growers Guide-Book.

Organize a cooperative association in your community. See pages 6, 14, 18, and 26 of the October issue; pages 6, 10, 19, and 20 of the November issue and page 273 of The Fruit-Growers Guide Book.

Get some of the government and experiment station bulletins on the subjects in which you are interested. The bulletins are free. A number of them are named in each of several issues of The Fruit-Grower during the last year.

How are you expecting to handle the hired help problem next year? Are you preparing for it now? See the solution proposed in the August number, page 22.

Clean your well and put it in shape to prevent its being contaminated with drainage from the barn, privy or drainage from household slops. Clean the cistern too. Put a pump and sink in your kitchen and save drudgery in the household work. Read about protecting wells on page 20, November.

Buy clover seed now, and buy it by sample. Test the sample and know what you are getting. The cheapest seed is not the best. Your agricultural college will test the seed for you, or you can do it yourself. There is more about this on page 26 of the November number.

Store the seed corn where it will not get too cold and where mice and rats cannot injure it. Good seed in the fall is frequently made worthless during the winter. See page 9, for October.

Hogs should be fed carefully at this time of the year, especially if it is near the end of the fattening period. See page 44, October edition.

Plan to save the women all the hard work connected with "wash day." Study the articles on page 45, for October, also those most excellent articles on pages 5 and 6 of April and 15 for May.

Orchard heaters will be needed this spring. Order them now before the rush comes. See page 48 of The Fruit-Growers Guide Book.

Plan the tile drains you intend to put in. The best time is when there is water in the soil to serve as a guide in getting the proper fall. There are some good pointers about this work in the articles on page 55 of the February number and page 24 for November.

Mulch the Strawberry bed. See page 233 of the Fruit-Growers Guide Book.

Clear the creek channel so that the storm waters can escape more quickly, and thus help in preventing overflows. This is only a tip. The details are on page 33 for November.

Take good care of the colts and get them started into winter in good shape. Bad care makes plugs out of them, no matter what their breeding. Read once more the little article on page 35 for November.

Before marketing your potatoes read the articles on pages 43 and 44 for Noveimber. There is as much importance in grading potatoes before they are marketed as there is in grading apples.

There is need for a cider mill in your community to work up the cull apples into cider and vinegar stock. Now is the time to interest someone in your neighborhood in building such a mill. For description of a model mill, see page 28 for October.

Silos are essential for the most economical use of the corn crop, and animals now on dry feed would be doing much better if they had silage. Study the silage problem. See page 8 of the August number, page 33 for October and page 30 for November.

An Appreciation.

When the welcome Fruit-Grower and Farmer comes, it carries my memory back to the time the first issue was published. At that time you wrote asking my opinion if it would pay to publish a paper featuring fruit growing. I replied that it would. Now, The Fruit-Grower and Farmer is the best journal in the country. Over fifteen farm journals come to my table. The Fruit-Grower and Farmer leads all in the information it contains.

I am glad to be in good health in my seventy-sixth year, with eyes to read until midnight the farm papers that give useful information on how to beautify the home and how to make the farm profitable. I have a life-time experience in fruit culture, but every issue of The Fruit-Grower and Farmer adds to my knowledge.

One-fourth of our working hours should be devoted to reading farm journals. The All Wise Creator gave men fruit before bread and meat. Why, then, is fruit culture so neglected? An editor is great who feeds his readers on food that leads them to success. The editors, the press. nowadays are our teachers and our preachers, and their audience is larger than can be reached by any human voice. JACOB FAITH.

Missouri.

Apple and Pear Blight.

These diseases are caused by a species of bacteria. It winters over, under favorable conditions, in relatively few affected branches. From these areas the disease spreads the following spring. How important it is then, in doing the pruning, to remove every trace of these blighted limbs. If only one is left, it may be the one which carries the living germs which will reinfect the orchard next year.

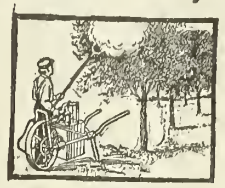
What did you do with the cull apples from your orchard this year? What did you do with your windfalls and drops? Evaporators and vinegar plants and canneries make it possible for fruit growers to turn this waste into a nice profit. Some articles will appear in The Fruit-Grower and Farmer before long telling how these plants are operated and how they add to the profit of the orchard

HURST SPRAYERS

On Free Trial

No Money in Advance
No Bank Deposit
We Pay Freight *5-Year Guarantee*

We will ship any Hurst Sprayer to you and let you use it ten days absolutely free of charge.



Man-Power Potato and Orchard Sprayer

If the free trial does not convince you that Hurst Sprayers are better made, easier operated, more durable and cheaper than any other sprayer on the market, send it back at our expense. If you decide to keep it, you can pay cash, or we will wait a whole season for our money, and let you pay for the sprayer out of the increased profits. Surely, this is a one-sided proposition with everything in your favor—if we weren't mighty certain about the quality of Hurst Sprayers we couldn't afford to make this offer.

Big Profits in Spraying

What's the use of cultivating, fertilizing, pruning, etc., and then let insects and fungus pests do their deadly work and rob you of your profits. You can get 50% more for fruit that has been sprayed than you can for scabby fruit.

Horse-Power Potato and Orchard Sprayer

How Hurst Sprayers Are Made

The Hurst Sprayers are the result of 26 years' experience in building spraying machines. The service and satisfaction Hurst Sprayers have given has made us the largest exclusive spraying machine manufacturers in the world. All Hurst Sprayers develop high pressure, and produce a vapor spray that permeates every part of the foliage. They have brass ball valves, brass plungers and brass cylinders. They agitate thoroughly, are easily operated, strong and durable, and every sprayer is guaranteed 5 years.

Hurst Spraying Guide Free

to our customers. This guide shows cuts of all insect and fungus pests, with full description, remedies, etc. The book is written in plain, simple language and will prove a valuable guide to even the most experienced grower.

Fitz-All Barrel Sprayer

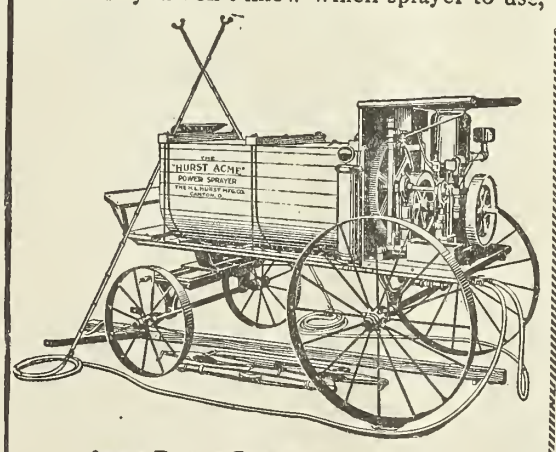
Money-Saving Offer—Free Catalogue

Fill out the attached coupon or write us today telling us which machine you are interested in and we will send you, Free, our big catalog and condensed spraying guide, and we will tell you all about our Free Sprayer Offer and our Free Trial proposition. Don't delay, but write at once and save money.

Mail this coupon today

H. L. HURST MFG. CO., 1816 North St., Canton, Ohio

If you don't know which sprayer to use, we will advise you.



Acme Power Sprayer

Fill out—mail today

H. L. HURST MANUFACTURING CO.
1816 North Street, Canton, Ohio.

Please send me full detailed information about your _____ Sprayer.
Also catalog, free offer, condensed spraying guide and copy of "TRIAL OFFER."

Name _____
Town _____
State _____

Silos Becoming Popular

Fifty-five silos have been built in the country near Colony, Kans., in the last two years. Frank Smith, who lives three miles from town, built a 100-ton silo in the summer of 1911, and filled it that summer. Several followed his example that year, and they obtained profitable results feeding silage. Most of the farmers near there who own their farms have erected silos.

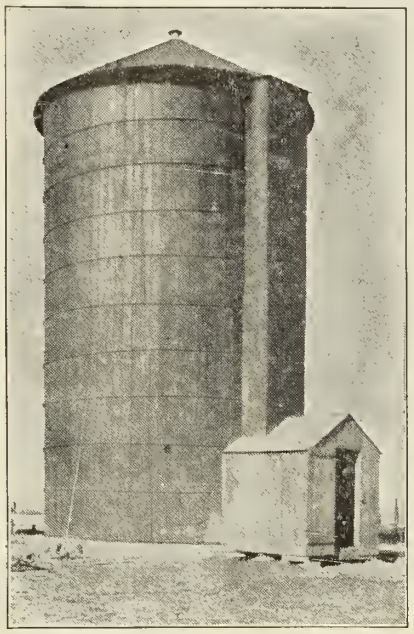
Colony is in a prairie hay section. The country is upland, and the soil is not so rich as in the river bottoms. In the last few years, the yields of corn have been decreasing materially. The land will produce good yields of forage, but if there is a scant rainfall in July and August, when the corn is maturing, the yield of grain is seriously reduced. This has happened for the last two years. Thus it is possible to produce yields of forage that are almost equal to the yields on richer bottom soils, but frequently the grain yields are low. So, silos are especially adapted to the conditions here.

The introduction of so many silos is encouraging the livestock industry. W. E. Payton, editor and owner of the Colony Free Press, in speaking of this, said: "The grain and hay farmers are not the most successful here. That probably is true in all communities, but it is especially so in this section. Our soil is not adapted to continuous cropping. This is a livestock country, and the introduction of silos is a fine thing if it does nothing more than encourage the keeping of more farm animals. But it is, by far, the most profitable way we have to handle the corn crop. I think it is the best change that ever has been made in the farming methods here."

Many of the silos are made of staves, but an increasing number of cement silos are being erected. V. C. Archer, who, by the way, owns three stave silos, said: "Stave silos are all right, of course, but they require considerable attention to keep the hoops properly tightened, and in keeping them tied down well with guy wires. The wind has a good sweep in this country, and there always is some danger of the silos blowing down, if the wires are not kept tight.

"I believe cement silos, either of the thin-wall or the solid-wall type, will be the silos of the future. Personally, I prefer the solid-wall type, and I believe that is the preference of most of the cement silo owners in this community."

The silos are of almost all sizes. Many are less than one hundred tons, while one farmer, Elmer Biffin, owns two that have a capacity of 250 tons each. These are built of cement. Favorable terms have been given by the dealers on the payment for the silos. Most of them sold on time were to be paid in a year, without interest. One dealer, who also is a farmer, sold silos with the agreement to pay $5 a ton for the silage, if the owners desired to sell. This was for the silage



SILO ON THE FARM OF FRANK SMITH
This silo was the first one built in the Colony community.

in the silo. Most of the farmers did not take advantage of this.

Most of the corn and kafir corn, which are the main silo crops around Colony, will produce at least eight tons of silage an acre, and much of it will produce more. If the owners can get $5 a ton for it, that means $40 an acre, on average land. But, of course, it is not best to sell the silage, which most of the farmers believe, as is evidenced by the fact that most of them refused to sell at $5. They can make a more profitable use of this feed by feeding it to farm animals.

Most of the silage cutters are owned cooperatively, and each is used to fill several silos. There were not enough cutters in the country to care for the silage properly this year, either, and several more will be purchased next spring. These cutters usually are run by traction engines attached to threshing outfits, that stop work long enough to work in the silage harvest.

There already is an increase in the number of dairy cattle in that section. There is a cream shipping station at Colony, and with the abundant supplies of silage and hay, there is no reason why the country around Colony should not develop into a good dairy section.

Many stockmen, however, build silos to produce feed for beef cattle. There are not so very many cattle fed in that country, most of them being kept until they have reached the feeder size, and then sold to communities where there is a larger production of corn. Very profitable results have been obtained on feeding silage to stockers.

The introduction of this large number of silos near Colony is merely an example of the way silos are being introduced all over Kansas, and the other states in the middle west. It is one of the encouraging things for the farming in that section.

The State of Texas.

In an article recently published in the Sunset Magazine, some facts are given to show why Houston, Texas, is a great city and is destined to be a greater one. In brief, according to this article, Houston is to be a great city because it has a great state back of it. Listen to these facts regarding Texas:

"Texas raises twice as much corn as Kansas, or as Manitoba does wheat; in other words, more than two hundred million bushels. Texas raises one-fifth of all the cotton grown in the world, and two-thirds of all grown in the United States. Yet only ten per cent of the state's cotton lands are tilled. In her eastern territory Texas has a timber belt of pine and hardwoods equal to the area of Maine, New Hampshire and Vermont; she has more timber yet standing than Michigan had originally. Her rice fields cover nearly 287,000 acres, and her oil wells have spouted from thirteen million to twenty million dollars' worth a year."

Another reason for the greatness of Houston and Galveston is given in a neat little booklet issued by the Missouri, Kansas & Texas railway, entitled "The Houston-Galveston Garden." It is because the land adjacent to these two cities is being cultivated to the limit. Here is a quotation from this booklet:

"From Houston to Galveston, as the crow flies, is but fifty miles. As the center, select a point midway between the two cities, and draw a circle. You have then defined the Houston-Galveston garden, comparatively small is its area, but wonderful in its possibilities. At one edge of the circle is Houston, with its network of railroads and its ship canal; at the other, Galveston and its world-wide maritime commerce.

"Because of its restricted area, contour and cultivation, the word 'garden' is particularly appropriate in its application to this district. The farms, with but few exceptions, are small and devoted principally to the production of fruit and truck. Formerly considered waste land, owing to its levelness and consequent lack of drainage, the greatest transformation has taken place within the past five years, and one now sees tracts that show in their prolific productiveness the possibilities of small-area cultivation. Settlers hailing from all the states have brought about a regeneration. The land has been divided into drainage districts, bonds have been voted for the work and now, in most instances, the ditching has been completed and the land permanently drained and reclaimed."

At this season of year the truck industry is a very important one, and many Northern farmers are going south to study the methods of their Texas brethren and to investigate the opportunities there offered. The M. K. & T. Ry., W. S. St. George, G. P. A., St. Louis, Mo., is making reduced rates at this time, and will be glad to furnish information regarding the same, and also to send booklets describing the various sections reached by the lines of this company.

Get the pruning tools in shape and begin on the orchard right away. Get a lot of the pruning done before the cold weather sets in. Every bit of the work that can be done this fall reduces the amount that would help crowd the rush next spring.

Orange Dale, a shorthorn steer with a record, was sold recently for $181.42. After all his show-ring honors as a fine specimen of fat beef, Orange Dale, the property of the Kansas Agricultural College, went to the block, and his price goes back to the people. He weighed 1,770 pounds.

400
1912 Model POWER SPRAYERS
NOW WORKING
About One-Half are the
New "Friend" Western
Every Day Now Some Prominent Fruit Grower Orders A
New "Friend" Western
And It's A Good Time to Buy The Most Popular Sprayer of the West TODAY.

L. O. VAUGHT, Attorney
Jacksonville, Ill., May 18, 1912.
"Friend" Mfg. Co.: Gentlemen—Yours of the 14th received. Thanks. Evidently you believe in doing the white thing. Good. It's a pleasure to deal with such people. My man reports the sprayer a dandy.

"Friend" Mfg. Co.
GASPORT, N. Y.
Always Mfrs. Fruit Growers' Best Sprayers
Special Propositions to Introduce Now

WHY don't you sell your high-priced land and come to Texas where the climate is mild the year round; where good rich land is abundant, where you can REALLY LIVE and make money 12 months in the year.

Everything Grows in Texas—Alfalfa and onions, potatoes and peas, cotton, cane and cabbages, rice and all kinds of fruits and garden truck. All America holds no better country for corn, wheat, oats, cattle, hogs and horses.

Come now before the best chances are gone and

Be Sure to Come by the Katy

THE BEST AND MOST DEPENDABLE line DIRECT to the best part of Texas

Special LOW RATE excursions are run on THE FIRST AND THIRD TUESDAYS

of each month—liberal stop-overs. Fast, through trains from St. Louis and Kansas City—close connections with all trains from the east, north and northwest—tourist sleeping cars.

Your local agent will sell you a ticket over the KATY. Write for "The Coming Country." It tells what others are doing in the Southwest. Address

W. S. St. George,
Gen. Passenger Agent,
215 Wainwright Bldg.,
ST. LOUIS, MO.

THE MK and T
MISSOURI, KANSAS & TEXAS RAILWAY

Smith's Spray PUMPS
A Sprayer For Every Fruit-Grower

Forty different style sprayers to select from, for garden, potato, shrubbery and tree spraying. Whitewashing, painting, disinfecting, etc. Hand and compressed air sprayers, bucket and barrel spray pumps, also dust sprayers.

No. 25 "Yankee" Barrel Spray Pump

D. B. SMITH & CO., Manufacturers
No. 2 Genesee St. UTICA, N. Y.

FARM FENCE
11½ cts. a rod for a 26 in. high hog fence; 16 1-2c. a rod for 47 inch high stock fence; 20c a rod for a 50-inch heavy poultry fence. Bold direct to the farmer on 30 Days Free Trial. Special barb wire, 80 rod spool, $1.40. Catalog free.
INTERLOCKING FENCE CO.
BOX 50 MORTON, ILLINOIS.

NEW IDEA
IN TREE SELLING
Exclusive territory; commissions on mail orders from your field. New and original working plans; cash weekly, expense stock, attractive prices. Your opportunity for permanent and profitable business. Write today for your territory. Outfit free.
MISSOURI NURSERY CO., Louisiana, Mo.

BEES It pays to keep bees right and raise your own honey. Send today for Free Catalog of BEE SUPPLIES and sample copy of the American Bee Journal, oldest bee paper in America, and indispensable to the beekeeper. DADANT & SONS, Box E, Hamilton, Illinois.

An Association That Helps

An Immense Organization Which Has Materially Helped in Reducing the Cost of Libing. All Produce in Small Packages

While residents of cities are making a great commotion about the high cost of living—or the cost of high living—and editors are writing yards of copy on the way to lower the cost of essentials, an association at Rochester, N. Y., is solving the problem. This is the Growers' and Shippers' Exchange, and Harvey W. Baxter is manager.

The company shipped 5,000 carloads of produce last year. It has forty-six loading stations, and 2,000 members. When a representative of The Fruit-Grower and Farmer called at the office recently, the association was handling about twenty-five cars of produce a day, and some days the business ran up to fifty cars. The company has been organized three years.

The association is a stock company, with a capital of $20,000. This stock is divided into shares of ten dollars each, which are fully paid and non-assessable. Every member must purchase at least one share. The exchange will start a loading station where there are enough growers to load produce in carlots. The company will also furnish an official inspector. Every person employed in a position of responsibility is required to give bond, so the association will be protected.

The costs of inspecting, loading, advertising and any other expense of a car are charged to the car, and the exchange takes out 5 per cent of the gross sales for the expenses of the central association. If there is any of this money that is not used, it is returned to the members at the close of the year.

Small Packages Are Used.

Mr. Baxter believes the growers should pack their produce in packages the consumers can buy to an advantage, and that these packages should not be broken. There is considerable loss in the average grocery store in filling retail orders, when bulk shipments are broken. It would be better if packages could be sent through without being opened. So this association makes every effort to pack its fruit and vegetables in sizes so they may go direct to the consumers.

Everything in fruit and vegetables is handled, except beans. As the production of beans, in some sections, Michigan for example, presents problems different from ordinary marketing problems, this line is not handled.

Much of the apples, pears and peaches is marketed in cardboard boxes, holding a peck. The potatoes are sold in sacks holding fifteen pounds. These packages are sealed with liquid glass. Then they are packed in crates containing eight boxes, which are convenient to handle. When a waterproof pasteboard is used they can easily be held in cold storage. Every package carries a mark, so it can be traced back to the grower. Thus the growers have no chance to pack a package improperly and get away with it. In order to insure that peaches and apples will go through safely, the cartons are filled flush full, and placed against springy slats on two sides of the crate.

One of the important things that has been observed is that smaller packs for grapes net much more for the grapes they contain than the larger sizes. This is a fact grape growers are learning, slowly, and the constant tendency in most grape-growing sections is toward smaller containers for grapes. The members of this association are not alone in making this change.

Apples Are Placed In Storage.

And then the association does not concern itself only with the sale of fruit as it is loaded. It is storing part of the apple crop of its members. This year 60,000 barrels of apples are held in chemical cold storage.

The association has broken retail combines in many cities, and has placed vegetables and fruits to the consumers at much less than they were paying. In addition, it has obtained better prices for the growers than they could have obtained if they had sold their produce in the ordinary way. Take, for example, at Baltimore: The first car of peck sacks of potatoes the association shipped to this market was sold to a department store for forty cents a peck. This store made a special sale, and agreed to deliver these potatoes, still in sealed sacks, to any home in the city for forty-two cents a peck. The retailers had been charging much higher prices, and the ring of the retailers was easily broken. Then the growers received for this particular shipment, eight cents a bushel more than they could have received if they had sold the potatoes in the ordinary way. Thus the association decreases the cost of living to the people of the cities, and gives the growers higher prices. It uses an efficient system of distribution.

And this is what they did in Rochester, the home city of the company: The retailers had been keeping the price of the one-third bushel basket of peaches up to ninety cents. That was too high, so one of the members of the company went to the department store of Sibley, Lindsay & Curr, and agreed to supply them with peaches so they could deliver them to any home in the city for sixty cents a one-third bushel basket. The next day, a member of the association went to the grocery stores of the city and found the average prices of the peaches the retailers were selling was sixty-three cents a one-third bushel basket. That is quite a drop in twenty-four hours.

Distribution Cost Is the Labor.

There are dozens of cases like the two given. This association is expanding rapidly, and it is doing much to solve the marketing problems of its members. The main secret of its success is the fact it uses small containers for its produce, so there will be no loss in breaking up these shipments to the ultimate consumers, and it ships these small baskets, as much as possible, in carload lots to the great, central markets, where the food is to be consumed, and use methods of distribution that have eliminated the usual series of profits that are paid. All the expense of distribution is labor. And it saves all the labor in the distribution it can.

This should be the aim of all co-operative associations. No one objects to paying a fair cost for the labor of bringing the food from the place it is grown to the table of the consumers, but there is a great objection to paying a series of profits along the line that are unnecessary.

The association is doing a great work, not only in helping lower the cost of living to the residents of cities and raising prices the growers get, but it also is pointing the way for similar companies in other parts of the country. For the growers will not much longer stay in the disorganized condition they are in at present, in many sections. Too many communities are making a success of co-operative selling, and are making profits the unorganized sections are losing. There will be a big extension of co-operative selling in the future.

Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package Is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manuf'r, 18 North St., Adams., N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.

"Harvest"—by Vincent Aderente.

Prosperity

There has been a bumper crop.

This is because the tillers of the soil have been industrious, and the rain and the sun have favored their plantings.

There has been industrial activity.

The makers of things in factories have been busy. They have had work to do and pay for doing it.

There has been commercial success.

The people who buy and sell and fetch and carry have been doing a lot of business and they have been paid for doing it.

The country is prosperous because all the people have been busy.

Good crops and good times can be enjoyed only when the Government maintains peace and harmony.

This task of the Government is made comparatively easy because the American people have been enabled to become so well acquainted with each other. They know and understand one another. They are like one family.

The producer and consumer, no matter where they live, are close together.

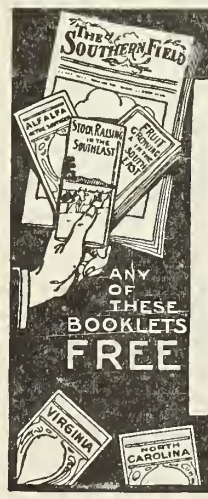
This is largely due to our wonderful facilities for intercommunication. We excel in our railways, our mails and our telegraphs, and, most of all, in our telephones.

The Bell System has fourteen million miles of wire spread over all parts of the country. Each day there are twenty-five million telephone talks all the way from twenty feet to two thousand miles long.

The raiser of crops, the maker of things, and the man of commerce, all are helped to co-operate and work together for peace and prosperity by means of the Universal telephone.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*



Cheap, Profitable Farm Lands

For Stock, Poultry and Hog raising, Dairying, Fruit growing, Truck Crops, Alfalfa yields and General Farming, the SOUTHEASTERN STATES present soil, climatic and market conditions unsurpassed by any other region.

Farm land values are most tempting. Undeveloped tracts sell from $6 an acre up; improved properties range from $20 to $50 per acre.

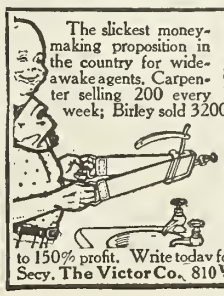
THE SOUTHERN RAILWAY

Mobile & Ohio Railroad or Georgia Southern & Florida Railway

will help you find a desirable farm location where two and three crops grow annually. Alfalfa produces 4 to 6 tons, Corn yields 60 to 100 bu., Truck crops make $100 to $400, Apple Orchards $100 to $500 per acre, and Beef and Pork are produced at 3 to 4 cts. per lb.

Let us know in what state and branch of farming you are interested. Information given and free publications furnished on application

M. V. RICHARDS, Land & Industrial Agent, Room 33 Washington, D. C.



The slickest money-making proposition in the country for wide-awake agents. Carpenter selling 200 every week; Birley sold 3200 and still going. ONLY SCIENTIFIC automatic razor sharpener made; gives Barber's DIAGONAL STROKE; HONES and STROPS all standard razors and safety blades. Guaranteed for life. Sells on sight. $2 complete. 100 to 150% profit. Write today for exceptionally liberal offer. Secy. The Victor Co., 810 Victor Bldg. Canton, O.

AGENTS

$50.00 to $100.00 EVERY WEEK

Obtains Big Yields of Grain

Scientific, Business Principles Bring Results to a Kansas Farmer

By Floyd B. Nichols, Agricultural Editor

Forty-six bushels an acre was the average yield of wheat this year on the Walwin Stock Farm, near Fredonia, Kansas. This farm consists of ninety-three acres, of which eighty acres are cultivated. It is owned by Walter J. Burtis, who was graduated from the Kansas Agricultural College with the class of 1887. Mrs. Burtis is a former student in domestic science at the same college.

The cultivated land all is under a definite rotation of alfalfa, corn and wheat. Alfalfa is grown five years, corn two to three years and wheat two years. The acreage of the crops will vary some with the year, but they usually are: Wheat, thirty acres; corn, thirty acres, and alfalfa, twelve acres. The remaining eight acres are taken up with lots, orchard and garden.

The farm is in the Fall River Valley, and most of the soil is a deep, fertile loam. About three acres consists of low land that produces immense crops in dry seasons, but on which crops drown out when there is much rainfall. The soil naturally is strong, but it has been brought to its present state of high production only by years of intelligent management. The average crop yields are much higher than the average yields in that valley.

FARM HOME OF W. J. BURTIS.

Every crop grown, except wheat and some corn sold at a good price for seed, is fed on the farm. Much of the wheat is sold for seed. All manure is hauled out from the feed lots promptly.

Wheat Is a Specialty.

Wheat has been one of the principal specialties of the farm. The Fultz variety is grown. The seed of this variety was purchased from the Kansas Experiment Station in 1905. It contains a slight mixture of bearded types which Mr. Burtis is making every effort to eradicate by head selection. He has a plat of about a half-acre of wheat from hand selected seed that should be practically pure next year. His wheat tested sixty-two pounds a bushel this year.

When wheat is grown after wheat, the land is plowed just as early as possible, usually in the first part of July. Land that is in corn is prepared as soon as corn is cut. It is worked very thoroughly. The early plowed land is disked after every rain until the seed is sown. A bushel and a half of seed is drilled.

Hildreth's Yellow Dent corn, of a good, pure type is grown, and quite a large amount of the crop is sold for seed. Most of the ground for corn is plowed in the fall, to encourage the formation of available plant food, and to conserve moisture. The corn is top planted, after the seed bed has been thoroughly prepared by disking and harrowing. As the acreage—thirty acres—is not too large, the best of cultivation is given the land. Cultivation is continued with five-tooth cultivators after the corn is too large for two-horse cultivators.

Alfalfa is sown in the fall on ground plowed in the early part of July. The soil is well adapted to alfalfa, and the yields are high. Five cuttings are commonly obtained with a season's average yield of about five tons. The second cutting this year yielded a ton and a half. When a representative of The Fruit-Grower and Farmer visited Mr. Burtis, November 4th, he was cutting the last cutting of alfalfa. The yield was good.

This hay is stored in a barn 24 by 60 feet, with 18-foot posts. The building cost $350. A shed for cattle is built next to the barn, and alfalfa may be pitched directly into the bunks in this shed, or it may be placed in bunks in the lot. This barn has a slat floor elevated fifteen inches from the ground. This allows good ventilation, and aids in curing hay that contains a high percentage of moisture.

Many Meat-producing Animals Are Kept.

Perhaps the most interesting feature of this farm is the large number of meat-producing animals kept, considering the acreage. In speaking of this, Mr. Burtis said: "I believe all crops, excepting wheat, seed corn and similar high-priced grains, should be fed on the farm where they are grown, and the resulting manure returned to the soil. Not only is live stock essential for the maintenance of soil fertility, but I also have noticed that men who merely raise and sell grain are not the most prosperous farmers. More profit can be made where crops are intelligently fed to live stock, than where grain farming is followed.

"We buy young steers, usually calves or yearlings, and keep them until they are two years old, and sometimes longer. I believe we could make a profit by raising well-bred cows just for the calves they would produce, if we were close to pasture, but we are not. We took our cattle to a pasture ten miles away last year. So on account of pasture being so far away, we keep only stock cattle."

The number of cattle kept will depend on their age. Last year, thirty-five head of two-year-old steers were wintered. These were well-bred animals, and as they were well-fed, they increased in weight all winter. They each received twenty pounds a day of alfalfa, and, in addition, the wheat straw and corn stalks grown on the land. Both of these crops were heavy. Then there was a small amount of other hay fed also. The steers, when running in stalk fields are yarded at night and fed alfalfa. An abundant supply of pure water is provided.

In speaking of feeding alfalfa, Mr. Burtis said: "It takes nerve to feed No. 1 alfalfa to steers, but I believe it pays. You see, we feed a great amount of cheaper feeds, also, and a small amount of this hay can be

Tree Tanglefoot

A harmless, sticky substance applied directly to tree trunks. Remains effective rain or shine three months and longer fully exposed to weather. One pound makes about nine lineal feet of band. No apparatus required; easily applied with wooden paddle. Especially recommended against canker worms, climbing cut worms, bag worms and gypsy, brown-tail and tussock moth caterpillars, but equally effective against any climbing pest. TREE TANGLEFOOT needs no mixing, but is always ready for use. Do not wait until you see the insects. Band your trees early.

PRICE: 1-lb. cans, 30c, 3-lb. cans, 85c, 10-lb. cans $2.65, 20-lb. cans $4.80

THE O. & W. THUM CO., GRAND RAPIDS, MICH.

Manufacturers of Tanglefoot Fly Paper and Tree Tanglefoot. Send for Booklet.

$5

Brings Oliver Typewriter

Send $5 for The Oliver Typewriter—the machine will come a-flying. The newest Model—No. 5—the regular $100 machine—with no extra charge for Printype.

For the price of a good fountain pen you secure the World's Greatest Typewriter. You can pay the balance at the rate of 17 cents a day.

This irresistible "$5 offer" is sweeping everything before it. The era of universal typewriting is coming. The triumph of the typewriter over primitive pen-and-ink has been brought about by the same machine that introduced visible writing.

The OLIVER Typewriter

The Standard Visible Writer

This is the typewriter whose high efficiency has made it the choice of the greatest firms and corporations. It is the simplest of all standard typewriters, yet the swiftest and by far the most versatile. The moving parts work freely in a solid metal framework, making the machine so strong that the hardest usage has no effect upon it.

No Extra Charge For "Printype"

Most people prefer to have the machine equipped to write in Printype. This beautiful type is obtainable only on The Oliver Typewriter.

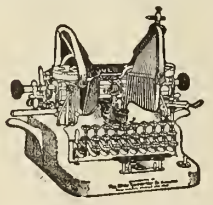
It is the greatest style improvement ever evolved for typewriters—the most easily read type in existence—the type which conforms to that in universal use on the world's printing presses!

Win Success With The Oliver!

The Oliver Typewriter aids success-seekers in a multitude of ways. The real-life stories of achievement that center around it would fill volumes.

No matter what your work may be—in office, store, shop or home—The Oliver Typewriter will prove itself a great convenience and an actual money-maker.

It stands for order and system and success. It is the visible evidence of the progressiveness of its owner. Young people with brains, ambition and Oliver Typewriters are succeeding everywhere. Can you afford to let $5 stand between you and success?



Send For Special Circular and Art Catalog

Full details regarding the Oliver Easy-Purchase-Plan, beautiful catalog and a specimen letter written in Printype will be sent you on request.

Let this $5 offer awaken you to your need of The Oliver Typewriter and the ease with which you may own it.

Remember—$5 only and on comes The Oliver Typewriter!

SALES DEPARTMENT

THE OLIVER TYPEWRITER CO.

102 WEST NINTH STREET KANSAS CITY, MISSOURI.

Shetland Pony Free--Many other prizes—bicycles, cameras, guns, watches, tool chests, gold rings, etc. Full information and big Premium List FREE. Write me today. E. T. Meredith, 320 Success Bldg., Des Moines, Ia.

Make your own Fertilizer at small cost with Wilson's Phosphate Mills

From 1 to 40 H. P. Send for catalogue.

WILSON BROS. Sole Mfrs., Easton, Pa.

Electric Light and Power Plants, carriage, bicycle and Xmas tree lights, railways, motors, belts, books, batteries. Catalog 3c. Ohio Electric Works, Cleveland, O.

worked in profitably, even if it is inexpensive."

All pasture land is rented. It costs from four to five dollars a steer for a season. It is a considerable disadvantage to have the pasture eight or ten miles away, but it is the only method that can be used, for, of course, the bottom land is too valuable to be used for pasture.

Hogs Are Profitable.

Hogs largely fed on alfalfa, is a profitable line. Five registered Poland-China sows, with a registered male are kept. The sows are bred twice a year, and the litters usually come in March and September. Seven is an average sized litter. Sows are fed carefully, and they usually live to a good age, and raise large litters. One sow was bred for six years, and produced two litters with from twelve to sixteen pigs every year. Several others have done almost as well.

This year, several sows were bred to a Duroc-Jersey boar, to study the effect on the size of the litter, and feeding qualities of the resulting pigs. Of course none will be kept for breeding. The size of the litter was increased to a surprising extent, as much as one-third in some cases.

Hogs are pastured on alfalfa in the growing season, and the sows are fed alfalfa in the winter. They run on a field of alfalfa that is somewhat larger than they can keep down, and it is mowed to cause a growth of young, tender stems. Usually they are allowed to run on the field in the morning and at night for two or three hours each time. Mr. Burtis said: "If the hogs are allowed to loaf on the alfalfa they will damage the stand and the plants materially. It pays to keep them off, after they have had an opportunity to eat all they desire."

Growing hogs on alfalfa get about a one-fourth grain ration. They receive but little slop. They are watered by the use of a Lake City automatic waterer that allows fresh water to flow out to the pigs just as it is needed.

Most of the feeding is done on a concrete feeding floor, 34x16 feet. This floor cost thirty-five dollars, and consists of a mixture of one part cement, three parts sand and five parts crushed rock. It is four inches thick. It is cleaned every other day, and the manure is thrown directly into a spreader. Part of this floor under the shed has a board floor placed on it in the winter. This is taken out during the warm weather. Mr. Burtis believes this floor is of great advantage in feeding hogs in warm weather, for by throwing water on it twice a day, it can be made cool and comfortable.

March pigs are sold in the late fall, and the fall hogs are sold in the late summer. They usually weigh about 200 pounds. Just as much gain is made as is possible with the cheap pasture feeds.

Five horses are kept. Two of these are mares that are bred. The mares are well-bred draft animals, and they usually are bred to purebred Percheron stallions. One young animal thirty months old weighs more than 1,300 pounds. This indicates the quality of the horses.

Family Labor Is Used.

Most of the labor on this farm is done by members of the family. Some help is hired in harvest and in haying. There are five children in the family. The oldest son is a student in the animal husbandry course at the Kansas Agricultural College, and the oldest daughter is a student in the domestic science course at the same college. Mr. Burtis is the representative from Wilson county in the Kansas Legislature. He was re-elected this fall. The son produced the champion lot of corn in the boy's corn contest in Wilson county before he went to college.

The house is large and has modern improvements. One of the interesting things is the number of publications taken. Fifteen agricultural papers, magazines and newspapers come to the Burtis home. The farm papers are filed, so they can be referred to at any time.

It is a mighty good small farm. The money to pay for the farm and the improvements has been made since Mr. Burtis left college, too, for he worked his way through school. The income from the place is very satisfactory.

On the Burtis farm, scientific, business principles are used, both in the fields and in the home. The place is a splendid example of the efficiency of the teachings of the Kansas Agricultural College, from which the parents came, and where the children now are.

THRESHING WHEAT THAT AVERAGED FORTY-SIX BUSHELS AN ACRE ON THE FARM OF W. J. BURTIS.

A WHEAT FIELD ON THE WALWIN FARM.

Alfalfa and Corn for Horses.

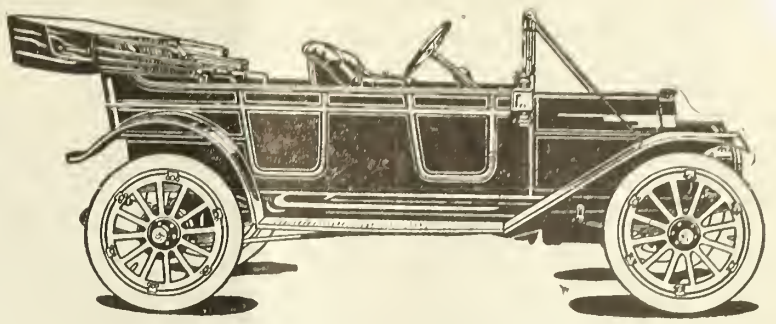
Alfalfa hay may be substituted for prairie hay when fed with corn. Feeding ten pounds of alfalfa and ten pounds of corn a day, a horse may be kept seven months at a cost of $46. This combination is to be recommended for the family horse, or any other horse that does not do very hard or extremely rapid work. Another good feed is five pounds of prairie hay, ten pounds of alfalfa, and eight pounds of corn a day. Horses having this ration should be able to stand hard driving and delivery work. All these prices were estimated with grain and hay at present prices.

Kansas. C. W. McCAMPBELL.

A splendid mixture for laying hens is equal parts of cracked corn, wheat and oats, which should be scattered in the litter so that the birds will be compelled to take exercise by scratching for it.

Be sure that the male at the head of a flock of poultry is purebred.

K-R-I-T



Model "K" Touring Car, Fully Equipped—$900

Equipment includes three oil lamps, two gas lamps, generator, top with side curtains and top cover, windshield, horn, demountable rims with spare rim, tool kit with jack, and tire repair outfit with pump.

Phone the K-r-i-t dealer to bring the K-r-i-t to your farm

We want everybody in your locality to become thoroughly acquainted with the K-r-i-t.

We want you, especially, to see how the K-r-i-t rides and behaves on the roads and hills you travel.

We want you to experience real automobile comfort and service.

That is why we want you to go for a ride in the K-r-i-t.

It will enable you to observe the wonderfully smooth-running, powerful K-r-i-t motor—the abundance of room the car gives its five passengers—the beautiful and lasting finish of the K-r-i-t, and the complete equipment.

You are under no obligation to us, whatever, in asking for this demonstration.

We simply want you to see the car, and ride in it so you can judge it correctly.

We doubt if you can find another car, that for actual value, can be matched with the K-r-i-t under $1500.

If you do not know the name of the nearest K-r-i-t Dealer, write us and we will send you his name and address along with our catalog describing this remarkable car.

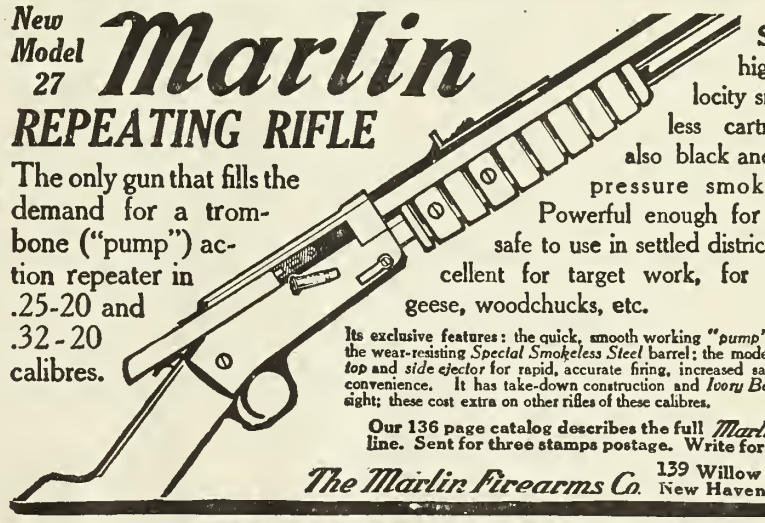
Other Models

Model "KR" Roadster - - - $900
" "KD" Covered Delivery $900
Fully equipped, f. o. b. Detroit, Mich.

KRIT MOTOR CAR COMPANY, 1620 E. Grand Boulevard, Detroit, Mich.

New Model 27 Marlin REPEATING RIFLE

The only gun that fills the demand for a trombone ("pump") action repeater in .25-20 and .32-20 calibres.



Shoots high velocity smokeless cartridges, also black and low pressure smokeless. Powerful enough for deer, safe to use in settled districts, excellent for target work, for foxes, geese, woodchucks, etc.

Its exclusive features: the quick, smooth working *"pump" action*; the wear-resisting *Special Smokeless Steel* barrel; the modern *solid-top* and *side ejector* for rapid, accurate firing, increased safety and convenience. It has take-down construction and *Ivory Bead* front sight; these cost extra on other rifles of these calibres.

Our 136 page catalog describes the full Marlin line. Sent for three stamps postage. Write for it.

The Marlin Firearms Co. 139 Willow Street New Haven, Conn.

ABSORBINE STOPS LAMENESS

from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone or similar trouble and gets horse going sound. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. $2.00 a bottle delivered. Horse Book 9 E free.

ABSORBINE, JR., liniment for mankind. Removes Painful Swellings, Enlarged Glands, Goitre, Wens, Bruises, Varicose Veins, Varicosities, Old Sores. Allays Pain. Will tell you more if you write. $1 and $2 a bottle at dealers or delivered. Manufactured only by

W.F. YOUNG, P.D.F., 34 Temple St., Springfield, Mass.

In writing please mention The Fruit-Grower and Farmer.

Before You Buy Nursery Stock

Look Into This. We have Good News that means money in your pocket. Let us explain and send you our New Illustrated Fruit Book, also Dividend Certificate.—FREE.—Write.

FARMER SEED & NURSERY CO., 527 Third Ave. Faribault, Minn.

Fighting the Bugs

Insects That Damage Orchard and Farm Crops. Where to Find Them and How They May Be Controlled

By W. C. O'Kane, New Hampshire Agricultural College

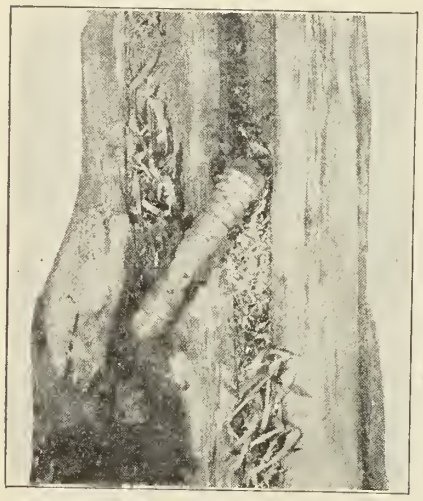
Several insect pests of the apple orchard demand more or less constant watchfulness in order to control them and to avoid the risk of serious injury. Unfortunately this is the case with the two specimens of borers that most often get into the trunks of the trees.

The Work of the Round-Headed Borer.

First, let us examine the life round of each of these two pests.

The one that is found near the base of the trunk is usually the Round-Headed Borer. Sometimes it works just above the surface of the ground, sometimes just beneath. Sawdust-like castings close to the base of the tree may betray its presence, or there may be merely a discoloration of the bark over the point where it is at work. Cut in carefully with a sharp knife, and you will find the culprit—a small whitish or yellowish grub, half to three-quarters of an inch long, cylindrical in shape, and without any feet.

This grub is one of the four stages



ROUND-HEADED BORER IN ITS TUNNEL IN THE HEART OF A YOUNG TREE.

in the life round of this species. The cycle runs as follows: When the grub is full grown it changes to a resting stage or pupa; from the pupa emerges a beetle; the latter in turn lays eggs; and from the egg hatches a grub once more. The grub is the only stage that is directly destructive, for it is the only form that eats and grows.

Three Years in the Trunk of the Tree.

Strange to say, about three years are required by the grub to reach full growth, from the time it hatches from the egg until it is ready to enter the resting stage. During its first summer it works in the sapwood, usually burrowing down below the level of the ground as winter comes on. Again through the second summer it follows the same feeding habits. But in the third summer or fall the grub begins to bore into the heart-wood, making clear-cut cylindrical tunnels up and down or cross-wise in the center of the base of the tree. Finally it bores out nearly to the surface, and in the early spring enters its resting stage.

A few weeks later the adult beetle comes forth, cutting his way out through the bark of the tree. It is of striking appearance, a chocolate brown in color, with white legs and with two conspicuous, cream-colored stripes down its back, from its head to the end of its wing-covers. The length of its body is an inch or a little less.

The beetle flies readily, but is apt to remain hidden in grass or other shelter during the daylight hours, or at least to rest quiet through the day, flying at night to the trunks of apple trees to lay its eggs. For several weeks the business of egg-laying continues—often well into July. Each egg is placed singly in a little slit cut in the bark by the adult beetle, somewhere near the surface of the ground. When the beetles have finished laying eggs they die.

From each egg hatches a tiny grub, which bores at once straight into the sapwood and begins feeding, thus starting the work that will occupy it for three years in the trunk of the tree, until it in turn is ready to transform to a beetle.

Characteristics of the Flat-Headed Borer.

The other species commonly found in the trunk of apple trees is the Flat-Headed Borer. It gets its name from the characteristic shape of the grub. Unlike the preceding species, this borer has a conspicuous enlargement near the front end of its body. The rest of the body is comparatively slender and somewhat tapering.

You will find it at work at almost any point in the trunk, or even occasionally in the larger branches. Sometimes it bores in toward the heart of the tree, but nearly always it works in the sapwood, making shallow, broad channels just under the bark. In one sense its work is not so serious as that of the Round-Headed Borer, but often several individuals will be at work in a single tree, and if the latter is only a few years old they may soon girdle and kill it.

This species, also, goes through four distinct stages in its life round. The adult is a bronze-colored beetle, about half an inch long. The eggs laid by this beetle are hidden in crevices of the bark or under loose scales, often several eggs together, fastened in place with a gluey substance. The beetles are on the wing in spring and early summer, at about the same time as the adults of the Round-Headed Borer. They work in daylight, and make no attempt at concealment.

The tiny grub that hatches from the egg works in the sapwood for the remainder of the summer, growing rapidly, and the following spring transforms to a resting pupa, from which in turn a new beetle comes forth. Thus only one year is required for the life round, instead of three, as with the other species.

How to Fight These Two Pests.

In fighting these two pests we may adopt either one or both of two plans. We may attempt to keep them out of our trees altogether; or we may endeavor to discover the grubs before they have done much damage, and either remove or destroy them. The latter plan is better adapted to the Round-Headed Borer than to the Flat-Headed, because the former works in a much more limited and definite area, and it grows so slowly that we have a reasonable chance of finding and destroying it before it has wrought its greatest injury.

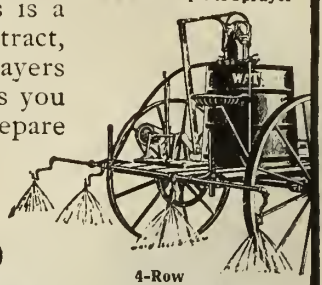
To keep the borers out altogether we have at our disposal half a dozen methods, more or less successful. The sure way—is to place some mechanical protector around the trunk. For this purpose we may make use of paper, fine wire screen or wood veneer; the latter made especially for the purpose. The material is wrapped around the trunk like a cylinder, the lower edge sunk into the ground two or three inches, the upper end tied tightly to the trunk. Even old newspapers will serve the purpose, and will easily last through one egg-laying season. If wire screen is used it ought to stand away from the trunk an inch or two. A strip of cotton batting at the top will serve to support the screen away from the trunk and at the same time fill in the space between screen and trunk. Whatever kind of protector we employ, the entire main trunk must be covered if we are dealing with the Flat-Headed Borer. Only

SPRAY

Ask Us to Send You Spraying Calendar and Directions — FREE.

No matter whether yours is a large or a small spraying contract, our book on Spraying and Sprayers will be a great help to you. It tells you what spray mixtures to use, how to prepare mixtures, when to spray and how to spray to secure best results.

Leader—Triple X Sprayer



4-Row Potato Sprayer

A Sprayer to Suit Your Needs

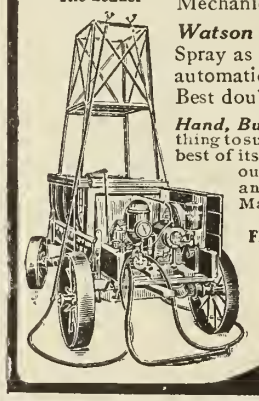
Our line includes everything from the small hand sprayer up to our famous power orchard spraying rigs.

Our Leader Orchard Sprayers are typical modern machines for large spraying operations. Combination mounted outfits consisting of gasoline engine, spray tank, pump, platforms, spraying appliances, all complete and ready for work. Power ample to keep ten nozzles going, each with 200 lbs. pressure. Improved liquid agitators and strainer cleaners. High class gasoline engine can be used separately to furnish power for all kinds of farm work.

The Empire King, the old reliable barrel spraying outfit. A great sprayer for general purpose work, sole reliance of thousands for spraying fruit, vegetables, shrubbery and small trees. Mechanical agitation of liquid, automatic strainer cleaners.

Empire King

The Leader



Watson 4-Row Potato Sprayer, for wide or narrow rows. Spray as fast as you can drive. Power always strong, automatic agitation of liquid and cleaning of strainers. Best double cylinder pumps, brass working parts.

Hand, Bucket and Knapsack Sprayers. Something to suit every requirement, every one the best of its kind. Be sure to write and get our Sprayer's Book before buying anything in the Sprayer line. Mailed free. Address

FIELD FORCE PUMP CO
58 11th Street
Elmira, N. Y.

FIELD FORCE PUMP CO. The Leader "OSPRAYMO" LINE OF SPRAYERS ELMIRA, N.Y.

Hood River Apple Trees For Sale

Vigorous Trees, Well Rooted, True to Name

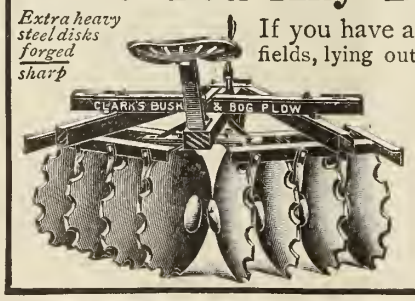
Jonathan Rome Beauty Delicious
Spitzenberg Newtowns
Arkansas Black Ortley Gravenstein

Also a good selection of other Standard varieties. Write for catalog and price list. You will find our prices right.

Hood River Standard Nursery Co., Hood River, Ore.

Have You Any Bush or Bog Land?

Extra heavy steel disks forged sharp



If you have any bush or bog fields, or parts of fields, lying out as waste land, or if you have any tough sod that you want to thoroughly chop up, or if you have any other disking that heretofore you considered impossible, put the Cutaway CLARKS Bush and Bog Plow on the job. You will be astonished at what this big, strong, heavy plow or disk will do to it. Let us tell you more about this tool. Write today for catalog and B. & B. circular.

CUTAWAY HARROW CO., 968 Main St., Higganum, Conn.
Makers of the original CLARK double action harrows

VIRGINIA·APPLE·ORCHARDS

PAY BIG PROFITS

N&W Ry

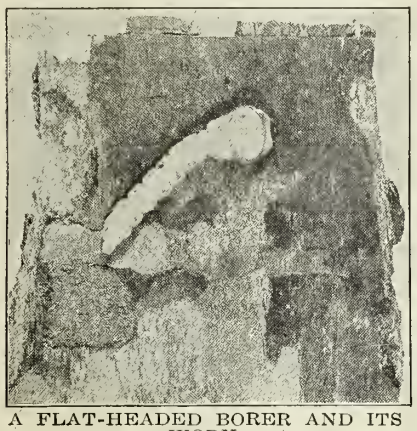
$350.00 on long time and easy payments buys a ten-acre Apple Orchard tract in "The Beautiful Shenandoah Valley of Virginia." Other farm and fruit lands $15.00 per acre and up. Write now for last issue "The Southern Homeseeker," other interesting literature and low excursion rates. Address, F. H. LaBaume, Ag'l Agt., Norfolk & Western Ry. Bdg., Rm. 40, Roanoke, Va.

the lower twelve to eighteen inches need be covered to guard against the Round-Headed Borer. For either, our protectors must be in place as soon as the warmer days of spring are at hand, and should remain well into July. After that they should be removed, both for the good of the tree, and because the beetles disappear by the end of July.

Protective Washes for the Trunk.

Instead of mechanical protectors we may use some sort of substance painted on the trunk of the tree. The materials that have been used for this purpose are many and varied. None of them will always give absolute protection. But if the bark is scraped clean of scales, and the wash applied early in May and again about six weeks later, the beetles will be pretty well discouraged and the trees will be reasonably free of attack.

The wash that has given most general satisfaction is made by dissolving three pints of soft soap in about three gallons of soft water. Then add washing soda until the solution has the consistency of paint. Finally add one-half pint of crude carbolic acid.



A FLAT-HEADED BORER AND ITS WORK.

In one of the eastern states several growers have been using white lead and linseed oil painted on the trunks. They claim complete protection, and state that the trees are not injured. If this plan is tried, however, do not use ready mixed paint, for the latter may contain other substances that would certainly be injurious to the tree.

After the borers are once in the tree, especially the Round-Headed Borer, three methods are open to us.

We may cut them out with a sharp knife—a laborious process, but still followed by some of the best apple growers in the country.

We may probe the burrow with a soft copper wire, nicking the end so as to form rough barbs that will bring out the grub and thus show that he has been reached.

Or, we may use carbon bisulphide in the holes. This is managed handily by pouring the liquid into a common, spring-bottom oil-can, and squirting a few drops into the hole, plugging it at once with dirt. Remember that carbon bisulphide will explode if brought near fire; and if you try this method, do it on a small scale at first, because it is not fully known just how much of a dose a small tree will stand.

A good time to go after the borers to remove or kill them, is in the warmer days of late fall or early winter.

Care of Spraying Outfits.

In leaving spraying pumps for the winter, store under cover where they will be kept dry. Clean them thoroughly, taking particular pains to drain out any water which may remain in the pumps and from the jacket of the gasoline engine, if power pumps are used, bearing in mind that a valuable engine can be practically ruined by water being left in the water jacket and freezing. A liberal application of engine oil to all the working parts of the engine in the fall will do much to keep off rust. Nozzles and hose should be cleaned and dried. Wooden barrels or tanks used as reservoirs should be put away from the sun, preferably in a moist place.

If any insecticides are left over, put them on a shelf out of the way, properly labeled. Remember Paris green deteriorates by being kept in the open air. Arsenate of lead which one desires to keep for the following year, should have a good covering of water to prevent its drying.

Minnesota. F. L. WASHBURN.

Orchard Practice Taught in Short Course.

Excellent opportunities are offered by The Extension Service of the Massachusetts Agricultural College in the Ten Weeks' Course, beginning January 6th, dealing with the practical side of the growing and marketing of fruits. The course will consist of five exercises a week, with lectures, demonstrations, and, whenever possible, actual work by the student.

An Apple Packing School will be held from January 23rd to 29th, inclusive. The work will be practical, and will include both box and barrel packing, and supplemented by lectures on leading phases of commercial orcharding; such as planting, varieties, spraying, pruning, harvesting, marketing, and so forth. For further information address: The Director, The Extension Service, M. A. C., Amherst, Mass.

Prevent Rabbit Injury.

It is time to plan winter protection for young trees. Thousands of orchards have been injured or ruined through girdling by rabbits or mice. If there is any rubbish in the orchard it should be cleared away from the base of every tree. Rubbish which harbors small animals that girdle trees close to the base is thus removed. This precaution is especially necessary in case oats or other small grains have been used as a cover crop. These precautions apply mainly to mice rather than rabbits.

Whitewash is an excellent preventative or rabbit injury. Use ordinary heavy whitewash, to which enough dissolved blue stone or vitriol has been added to give a decided blue color. Salt should be added to make the mixture stick. Apply with a brush to the trunks and small branches of young fruit trees. Apply high enough to guard against possible injury. Remember snow will enable the rabbits to girdle much higher during the winter than they could possibly reach in the fall when you are applying the whitewash.

Get Rid of Bindweed.

Bindweed, the most pestiferous of weed pests, can be eradicated from small areas by the use of tar paper and hogs. On small patches, such as lawns and gardens, the tar paper spread over the entire patch, will smother out the pest.

By the hog method a patch should be plowed and hogs turned in—twenty-five to the acre. If these animals are fed lightly they will dig out and eat the roots of the bindweed. Both methods have been proved successful and are recommended by the Department of Botany at the Kansas Agricultural College.

Hard to Kill It.

Where bindweed is scattered extensively over a field there is no known way to exterminate it. Experiments with chemical sprays have been tried at the Agricultural College without success. In an experiment conducted in Ellis county, the tops of the plants were killed down thirteen successive times in one season, by the use of a spray, but they came up the next year as thrifty as ever.

And It's Spreading.

The bindweed is a pest that is gaining ground in Kansas every year. Correspondence received at the agricultural college this year on this subject were six or seven times as large as it was three years ago. The seed of bindweed probably is brought into the state and distributed in the seed of wheat, kafir, oats, sorghum, and barley. The botany department of the college will test the samples of any such grain for the seeds of this and any other pests, free.

Subscription expired? Renew today.

Corona Dry Powdered Arsenate of Lead

Here is a Dry Powdered Arsenate of Lead that stays in suspension longer than any other arsenate of lead—dry or paste—has greater spreading properties, and holds longer on the sprayed leaves and fruit.

A new chemical and scientific discovery, of amazing value to fruit growers. Manufactured by an entirely new process. Patent applied for. Different from and superior to any similar insecticide. Mixes quickly and easily in water. No sediment. No lumps. No waste. Never clogs spray nozzles. The pest-killer to depend on.

Codling Moth, commonly called APPLE WORM—attacks any variety of apples. Little Turk or PLUM CURCULIO—attacks Plums, Peaches and Apples. Both these pests are great money losers for fruit growers in all sections

These losses are avoidable. It is now entirely possible to control, to exterminate, these and other fruit-destroying insects. But one must do the right thing at the right time. The answer is—Spray with Corona Dry Powdered Arsenate of Lead.

Corona Dry Powdered Arsenate of Lead removes every objection heretofore raised against such insecticides. It contains nothing but lead oxide and arsenic oxide, the only two essentials of an arsenate of lead. The difference between Corona and all other arsenates of lead—dry or paste—lies in the process of manufacture, and in this alone. The Corona product combines convenience, economy and efficiency. It has been put to test and proved to have the highest per cent. of actual killing power.

Never before has there been a satisfactory dry arsenate of lead. The old-fashioned acetate or nitrate precipitating processes give a heavy, coarse substance, which quickly settles in the spray tank, making impossible a uniform strength of spray.

Corona Dry Powdered Arsenate of Lead is as soft as cotton and as fine as flour. Being lighter, finer and fluffier, it stays in suspension longer, has better spraying properties and adheres longer to the foliage. Less is required to each batch of spraying solution. Use one to one-and-a-half pounds to fifty gallons of water or fungicide. Study the illustration here shown and see the superiority of the Corona product.

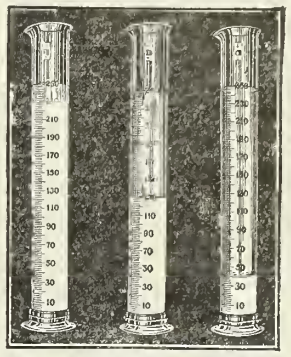
One pound of Corona Dry Powdered Arsenate of Lead will do the work of two to three pounds of paste arsenate of lead—and do it more thoroughly. The Corona Dry Powdered Arsenate of Lead is more simple, cleaner and easier to handle than a paste material. Cannot freeze, dry out, cake or lose its strength. It has always the same high point of efficiency.

We can prove the unusual qualities of Corona Dry Powdered Arsenate of Lead by figures, testimonials and sworn tests. Every orchardist should write for illustrated booklet and further information about this new discovery. Ask about our consulting and service department. Write to-day—now. Address

Department B

Corona Chemical Co.
Milwaukee, Wis.

Manufacturers of Insecticides and Fungicides —Arsenate of Lead, Lime and Sulphur, Bordeaux Mixture, Paris Green, etc.



CORONA—PASTE—OTHER DRY

Above test shows suspension after standing five minutes. This proves Corona Dry Powdered Arsenate of Lead lighter and softer than either paste or other dry arsenates of lead.

Sulphur, Nitrate of Soda
Blue Vitriol

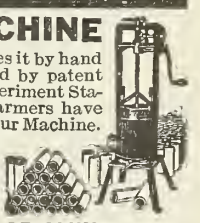
If you make your own Lime and Sulphur Solution, write us for prices on sulphur. We carry large stock in barrels and sacks. Ours is the best and cheapest brand for making solution. Goes into solution readily and stays in solution. We also carry large stock of best Nitrate of Soda in 200-pound sacks, ready for shipment. You can save money and get prompt service by dealing with us.

Commercial Acid Company, 3943 Duncan Ave., St. Louis, Mo.

Make Your Own Drain Tile

THE FARMERS' CEMENT TILE MACHINE

Makes tile 3 to 8 inches in diam., 12¼ inches long. One man or boy operates it by hand or power. 500 tile per day by hand, 1,200 by power. Tile thoroughly cured by patent process. No tamping or use of pallets. This machine and tile used by Experiment Stations of Agricultural Colleges and the U. S. Dept. of Agriculture. 5,000 farmers have doubled the yield of land by underdrainage, and saved 75% of cost by using our Machine. You can do the same. Save cost of hauling and breaking. Make perfect tile $3 to $5 per thousand. MACHINE SOLD DIRECT FROM FACTORY TO YOU. **TEN DAYS' FREE TRIAL.** SEND NOW for 36-page Illustrated Catalogue. Tells you about great benefits of underdrainage, how to take levels and get grades, make and lay your tile at low cost.



FARMERS' CEMENT TILE MACHINE CO., - Box 407, ST. JOHNS, MICH.

Handling a Strawberry Bed

New Method of Handling For Second Crop Which Probed Successful. Burn Over Field, Cultibate and Fertilize as Soon as Crop Is Off

By Francis A. Badger, New Hampshire

First, as in the recipe for cooking a hare, get your hare. It is about the same with strawberries, get one crop first and then decide if the bed will pay you to try for a second crop. Right here is where a lot of people fail, thinking the bed didn't do much this year, and perhaps it will do better next year, but if the bed has a poor stand of plants, and is pretty well filled with grass and foul weeds, probably it will not pay to put much time into it. If it is reasonably clean a second crop equal to the first may be harvested at much less expense, as after the first cleansing out of the bed but little hand work is needed to keep the bed in shape.

The time to begin is thirty seconds after the last picker has left the field, to get as long a time as possible in the fall for the plants to make the new growth.

The Method Is This.

With a mowing machine the ground is mowed, and just as soon as dry tatoes, the horses going astride the row. All the dirt, which by this time, is about 'as fine as road-dust, is heaped directly on top of the row, and the space between scraped bare of loose dirt, for these middles will be hard from the six weeks' tramp of pickers in the season just over.

Now is the time to get the five-tooth cultivator at work again, and go two or three times again in this space between the rows. This will loosen up the sub-soil as far down as the cultivator will reach. Then the next step is the harrow. A smoothing harrow is used with the teeth slanted back and going crosswise of the rows until part of the dirt is removed, but will leave enough to cover the crowns of the plants with fine dirt, which will be well worked in around the plant. A narrow harrow may be run the long way of the piece with as good results.

There is no particular merit in putting so much dirt over the plants to be removed at once, only that it is out

MR. BADGER AND DAUGHTERS.

enough, the mulch is stirred up and fire run over the patch, rows and all, which disposes of the mulch, leaves all rubbish that interferes with the cultivating of the ground, and incidentally is a good thing to discourage all fungous growths and insect pests.

If for any reason, trees or other crops, it is not safe to burn, this mulch is raked together with the leaves and carted away, and the prospect is not a rosy one to the uninitiated, not a green thing in sight if the burning was well done. But get a horse and the regular five-tooth cultivator and begin work. The first time you do it, you will probably have a large delegation of the sidewalk committee to remonstrate with you and tell you where you should be confined if you had what was coming to you rightfully—the home for the feeble-minded or the state lunatic asylum, but don't mind about that.

Working the Soil.

I use the narrow-matted row. Rows are set three feet apart and allowed to become eighteen inches wide, with the same space for the pickers. Set the cultivator eighteen inches wide and go between the rows until the ground is loosened up and the edges of the rows trimmed off, for you will find that they have encroached on the middle space since cultivation was stopped in the spring. Two or three times in a place will be needed to get it in shape for the next move, which is to take a pair of horses on the hoe, such as is used here for hilling potatoes, the horses going astride the row. All the dirt, which by this time, is about 'as fine as road-dust, is heaped directly on top of the row, and the space between scraped bare of loose dirt, for these middles will be hard from the six weeks' tramp of pickers in the season just over.

Now is the time to get the five-tooth cultivator at work again, and go two or three times again in this space between the rows. This will loosen up the sub-soil as far down as the cultivator will reach. Then the next step is the harrow. A smoothing harrow is used with the teeth slanted back and going crosswise of the rows until part of the dirt is removed, but will leave enough to cover the crowns of the plants with fine dirt, which will be well worked in around the plant. A narrow harrow may be run the long way of the piece with as good results.

There is no particular merit in putting so much dirt over the plants to be removed at once, only that it is out of the way when loosening the sub-soil, and the horse-hoe and harrow are the best solution of the problem of how to get the best results at the minimum of cost.

About one inch of fine dirt is the proper amount to leave on the plants, and it will not be long before you will see the new leaves starting and at about the same time a new set of roots will start, just above the old ones. The object of the inch of fine dirt is to get the new roots without which the second crop is only a partial success.

About this time grass and other weeds that may have been present begin to show up, and now comes the work of clearing out the bed. The best tool that I have found is the ordinary five-tined potato hook, such as is used in some parts of the country for digging potatoes. The tines will strike through the loose dirt, and if they do not take out the grass or weed at once, it will loosen the soil so that it is an easy matter to get hold of the grass with the hand and pull it out without disturbing the plants much.

I do not find that these plants will make many runners after this time of the year here in this part of the country, where it is said that our season is eight months of winter and four months of very late fall, so do not find it necessary to thin plants if they were not too thick in the first place. Cultivate and treat as a spring set bed and you will find a crop of berries the second year that will be the equal of the first crop in every way.

This is not a new principle, only the method. Instructions are usually to take a common plow and turn a furrow from each side of the row to the alley way, and then with cultivator

GALLOWAY'S

Write for my Special 1913 Offer

Factory-to-Farm Bargain Price, $695

On This AUTO TRANSPORT

Easily Worth $850

LISTEN—Farmers, Business Men, Pleasure Seekers! Here is Galloway's latest Hobby, the Wonderful 3 in 1 Automobile that successfully fills the missing link in the Chain of Automobiles today! I call it the AUTO TRANSPORT, because it will actually go through snow and mud and transport anything or anybody—anywhere—anytime, safely, cheaply, economically.

While it is a wonderful car for all uses, it is specially valuable on the farm. Think of what a Galloway AUTO TRANSPORT will do for you. The time it saves—and time is money!

The Auto Triumph of 1913

I tell you, Men, this Galloway 1913 Anto Transport is a wonder! A Mechanical Masterpiece with more *real*, practical, common-sense automobile value packed into its make-up, dollar for dollar of cost to you, than any machine in the world. It's Galloway's best achievement—absolutely *right* from radiator to rear light—at a price figured way down to just a shadow above actual cost to make—on terms so easy that you'll hardly realize you are paying.

Does The Work Of Three Teams

With this rig a man or boy can do more work in a half day than three men and three teams can do in a day. We have proven that. I have a dairy here on my farm near Waterloo. We have used one of these rigs on our place all summer and fall every day, day in and day out, week in and week out, and with it a boy we have on the place who delivers the milk, hauls and makes more deliveries in three hours than three teams could make all day.

Built For The Hardest Wear

Yes, sir—this Galloway Anto Transport of mine hits the nail right square on the head! It's built for the hardest wear and tear under my personal direction. I know the Farmers' needs and I know that this rig is absolutely right—what tens of thousands of Farmers have been waiting for.

Notice the size of the wheels; large hubs, heavy, durable spokes and rims, axles that are strong enough but not too heavy. Wheels are just the happy medium—not too high nor too low—they will go through places that big 40 to 70 H. P. Touring Cars cannot pass.

A Wonderful Convenience

You can haul hundreds of things in a Galloway Auto Transport; pigs or calves, sheep, poultry, milk, butter, eggs, vegetables, fruit or any kind of produce to market. You can jump into this new Transport and go to town before you could feed, curry, harness and hitch up a team. If you need something in a hurry, jump into the Transport and you are there before you know it.

When you come home you can bring it full of groceries, flour, feed, furniture, hardware, coal, salt, lime, cement, lumber or anything you can think of in the freight line, or you can bring it home with a whole load of company from the city. And on Sundays and holidays you can take your family and friends out for a delightful drive, giving your faithful, hard working horses a well deserved rest.

My Net Factory Price $695 Easily Worth $850

Remember, this Auto Transport is no toy! It is practical, durable, built on honor of best materials, and every rig is thoroughly tested before shipment. My bed rock net factory price is only $695 but is worth to you in actual value all you could get—and more—from one of the big $1500 to $3000 cars, because it gives you three uses in one—a "run-about" for chores around the farm and errands in town, a transport for freight and a pleasure car for the family.

Send For Full Description and My Special Business Introductory Offer That Will Help You To Pay For Your Transport and Make You Money While You're Paying.

WILLIAM GALLOWAY, President,
William Galloway Co,, 1036-KA Galloway Station, Waterloo, Iowa

The Colorado Midland

Affords the Best Service to

The Fruit Lands and Farming and Grazing Lands of the Western Slope

There are thousands of acres of good lands still uncultivated in the fertile valleys of eastern Utah and western Colorado, and oceans of water in the streams and on the mountain tops. Special rates made for landseekers to go and look at these lands and for settlers. Write us or come in and ask us for information about what has already been done in that section.

MIDLAND ROUTE

E. P. CARR, City Passenger Agent
E. D. WHITLEY, City Ticket Agent

Telephone Main 6280. Seventeenth and California Sts., Denver, Colo.
DINING CARS, PULLMANS AND CHAIR CARS ON ALL TRAINS

Apple Boxes a Specialty

Fruit Packages, Baskets, Tree Protectors, Etc.

ADDRESS 147 ARSENAL ST.

St. Louis Basket and Box Co., St. Louis, Mo.

SEEDS Best Grown. 10 Varieties, Burbank's Floral Gems, 10 sorts Spencer Sweet Peas and 5 Fairy Roses (seeds) all for 10c. 5 packets vegetable seeds 10c. Catalog and pkt. Giant Pansies free. A. C. Anderson, Box 25 Columbus, Neb.

Coyne Brothers Handle All Kinds of Fruit and Produce
160 Water Street, Chicago, Ill.

level down and go crosswise with the harrow and drew the fine dirt over the crowns in this way.

Here is the way it works in this part of the country. The average New Englander can't hoe without hilling his work more or less, even if told to keep it level, and this row with the furrow plowed away from each side stands slightly higher than the rest. By the time the furrow is filled up, not much dirt is left to cover the plants, as the harrow has been taking dirt away from the plants instead of on to them. Most people stop right here and let the row go, as they fail to get the basic principle. Fresh dirt over the crown must be gotten in some way in order to get new roots and new tops, without which the second crop is not liable to be a great success. On small beds a hoe can be used to put on just the amount of dirt needed equally as well.

If the ground needs more fertilizing, the best time is to apply it right after burning, and then it gets well incorporated with the soil. Get the growth in the plants and the berries will follow. If the growth is weak and small, large amounts of fertilizer applied in the spring will not make a big crop of fruit, as the fruit buds are formed in the fall.

The berries on my second year plat this year sold for four dollars a bushel without grading.

In a field of less than one-half acre we harvested twenty-four bushels. This plat has been treated in the same way again, as an experiment, to see what a third crop would be. Plants are making a good growth and look as if they would bear another crop, but about that can tell better a year from now.

Clean the Garden Ground.

The good gardens of 1913 are being made now. Not that this is the time to sow seed or even lay out the beds, but the first work for next year's garden should be done now. Good gardeners, says Albert Dickens, head of the horticultural department of the Kansas Agricultural College, are removing their tomato vines, potato vines and corn stalks and either putting them in a compost heap or burning them.

Burning them is the quickest and most sanitary way of getting rid of this trash, but where humus is scarce it should be piled up in a corner of the garden and allowed to rot, when it will be in shape to spread over the garden in the spring.

In a large garden a well-sharpened disk run over the ground will cut this trash so that it may be plowed under. But in a small town garden the compost heap is not particularly desirable. With the ground cleared, a ton or two of well-rotted manure should be spread over a plat fifty feet square. The ground then should be plowed.

Ground well plowed in the fall will hold moisture better. Freezing will unlock some of the stored plant food and the plat is ready to be worked the first warm days of early spring. There are some garden that should not be plowed in the fall because of the tendency of the soil to blow. Blowing is less likely to occur in ground left rough, but such soils may well have a good, heavy mulch of coarse manure and the coarse parts raked off before the garden is planted in the spring. Fall plowing also is helpful in clearing up an ugly backdoor landscape.

Getting Back to Beef Cattle.

A beef cattle shortage, predicted for several years by careful observers of live stock conditions, is now a serious problem commanding the public attention.

Years ago, widespread use of the range and cheap beef made from free grass drove farmers out of the beef cattle business. During the last ten years farmers have changed thousands of square miles of grazing land into homesteads and cultivated farms. With cattle driven in relative large numbers from both farms and ranges could there be any doubt of ultimate beef cattle shortage?

An increase of population for the last decade of 21 per cent is met by a beef shortage of 7 per cent. During the last six months, prices at our great markets have been continually reaching higher levels until ten and eleven cent steers seem to be with us for some time to come. Unfortunate features of the situation are that good female stock of breeding age has been sent to market in increasing numbers, and that there has been, for the last five years, an unprecedented slaughter of calves.

Many remedies have been suggested, among them a national law preventing the slaughter of female stuff for a period of years. Public sentiment and concerted action on the part of live stock men, rather than statute law, is the remedy for the situation.

High prices for cattle on foot will naturally encourage many farmers and ranchers to extend or start in cattle. A beef producers' association in each state, as is now in active operation in Iowa, would be of great help in starting new men in beef cattle, and in diverting a portion of the females now sent marketward, to the farms as breeding females. Furthermore, further discussion of the beef cattle situation and widespread realization of the need of immediate efforts toward breeding a future beef supply would aid in retaining on the farm a large percentage of the calves now sent to the shambles.

The flow marketward of half finished stuff must be checked. Corn, oats and hay are more plentiful and relatively cheaper than beef. Retention of the half-fat steer in the feedyard for several weeks means more beef from every animal, and more economical use of feed stuffs.

Another method of producing more good beef in a reasonable time is by the use of better bulls on grade cows now producing indifferent calves. In the University of Idaho steer herd is a Hereford-Jersey Shorthorn that has won a number of prizes on the Pacific Coast show circuit this year. His dam was a common cow, but his sire was one of the best Hereford bulls in the Missouri River Valley. There are, in all parts of America, large numbers of grade cows that are not now paying their keep in the dairy. These cows bred to good, purebred bulls of beef form are capable of doing an important work in beef production.

The things to be immediately sought are lessened slaughter of she stuff and calves, longer feeding and better finishing of the present, limited supply.

Idaho. E. J. IDDINGS.

Great New Everbearing Macatawa Blackberry

Next year you should grow berries. It's the thing that pays in commercial fields and in gardens. And to make your work count for the most, grow the heaviest yielders, the biggest, meatiest, best-flavored berries. Macatawa Blackberry has all these qualities, and more. It's a brand-new sort, a cross of Eldorado Blackberry and true Giant Himalaya Berry. The berries are extraordinarily large—3½ inches around one way, by 3½ inches the other. They begin to ripen July 1; the big pickings come just after July 1, and you get ripe berries until frost.

Berries are sweet even when green, free from core and seeds, meaty and altogether delicious, wonderfully good to look at, and just as good to handle, to ship and to eat—high-priced and profitable.

Plants Begin Bearing the First Year

and yield immense crops afterwards. They are absolutely hardy in 40 degrees below zero. Macatawa plants $1 each, or 6 for $5. Only 6 to one person.

Send today for the 1913 Berrydale Berry Book. Full of valuable Berry information. Contains true descriptions of the Macatawa Blackberry, of Himalaya Berry and many other profitable berries you ought to grow in your garden or fields. Let me have a card for the book today.

A. MITTING, Berry Specialist
BERRYDALE EXPERIMENT GARDENS
Fruit Avenue, Holland, Mich.

Electric Lights
for Every Farm

The progressive farmer of to-day long ago left behind him the various inconveniences once considered inseparable from farm life. He is now following modern methods, adopting modern inventions and labor-saving devices. The greatest advantage recently placed at his disposal is Electric Light—made possible, no matter how far from a Central Lighting Station his farm is situated, by the Individual Electric Lighting Plant using the

"Chloride Accumulator"

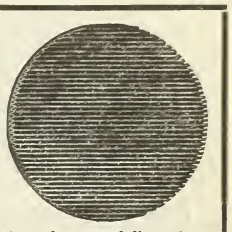
The purpose of this storage battery is to store up and retain the electricity. It is exactly the same type of battery used in the lighting stations of large cities. By connecting it with a gas engine and dynamo occasionally, it accumulates and retains enough electricity to furnish light for your home and buildings through a day and night or longer—and light moreover, that is instantly at the command of your hand at the switch, without continually running the engine.

Be modern. Investigate the Individual Electric Lighting Plant. It is not expensive and—but send to the nearest office for the book, "Farm Electric Lighting Plants." It describes the whole subject in detail.

THE ELECTRIC STORAGE BATTERY CO.
1888 PHILADELPHIA 1912

New York, Boston, St. Louis, Cleveland, Atlanta, Denver, Detroit, San Francisco, Toronto, Portland, Ore., Seattle, Los Angeles, Chicago.

IDEAL—
Corrugated Paper
Cushions
For Packing Apples



KEEP THE FRUIT UNBRUISED so that apples are delivered as round and solid as the day they were packed. Their use is an evidence of careful packing which commends your fruit to the trade and their cost is so low that every packer should AT LEAST INVESTIGATE.

Standard discs 16½-inch diameter. Discs and sheets cut to order in any size. Write us.

THE HINDE & DAUCH PAPER COMPANY
Department "3" SANDUSKY, OHIO

Wholesale and Retail Profit Saved! FREIGHT PAID

RUBBER ROOFING 1-Ply, 35 lb. 108 sq. ft., $1.10 per roll.
2-Ply, 45 lb. 108 sq. ft., $1.30 per roll.
3-Ply, 55 lb. 108 sq. ft., $1.50 per roll.

Warranted For 25 Years. Terms Cash. These Special Prices Only Hold Good for Immediate Shipment.

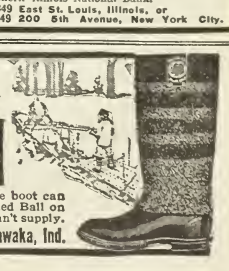
FREIGHT PAID to any station east of Rocky Mountains except Tex., Okla., Colo., N.D., S.D., Wyo., Mont., N.M., La., Ga., Ala., Miss. and Fla. on orders of three rolls or more. Special prices to these States on request.

INDESTRUCTIBLE BY HEAT, COLD, SUN OR RAIN.

FIRST-CLASS IN EVERY RESPECT. NO SECONDS, REMNANTS OR MILL ENDS. Write for FREE SAMPLES or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to the Southern Illinois National Bank.

Century Manufacturing Co., Dept. 849 East St. Louis, Illinois, or Dept. 849 200 6th Avenue, New York City.

The famous "Ball-Band" Coontail Knit Boot is KNIT—not felt—insuring the utmost wear and service. The patented snow excluder fits snugly over the rubber, keeps out snow, mud, dirt, grain, etc., and gives the comfort of warm, dry feet to men who work in the snow.



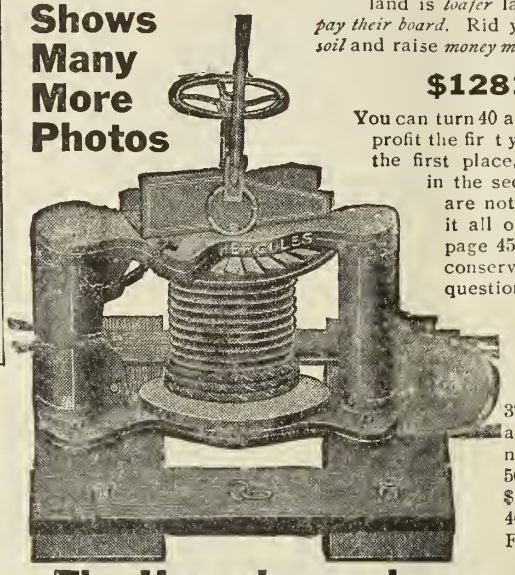
"BALL (Red) BAND"
TRADE MARK

It is all knit wool, shrunk as far as it can shrink and the boot can be washed like you wash a rubber boot. Look for the Red Ball on the strap. Sold in 45,000 stores. Write us if your dealer can't supply.

Mishawaka Woolen Mfg. Co. "The House That Pays Millions for Quality" Mishawaka, Ind.

Turn Your St

Free Book Shows Many More Photos



PULL out the *stumps*. They cost you *big* money in *taxes*—and *bigger* money in *crops that you don't get*. Stump land is *loafer* land! Stumps are *boarders* who *never pay their board*. Rid your field of stumps—plant on *virgin soil* and raise *money making crops!*

$1281 the First Year

You can turn 40 acres of stump land into *at least* $1,281 profit the fir t year—and $750 every year after. In the first place, you double the *land* value—and in the second place, you get crops that you are not getting now. My free book figures it all out for you in black and white, on page 45. The figures are so plain and so conservative that you can not possibly question them.

$750 Every Year

You can easily raise 37½ bushels of corn per acre, many raise 90, on newly cleared land! At 50c a bushel, that makes $18.75 per acre. And 40 acres means $750. Figure up the profit per acre on oth *what* it mea

Pull A

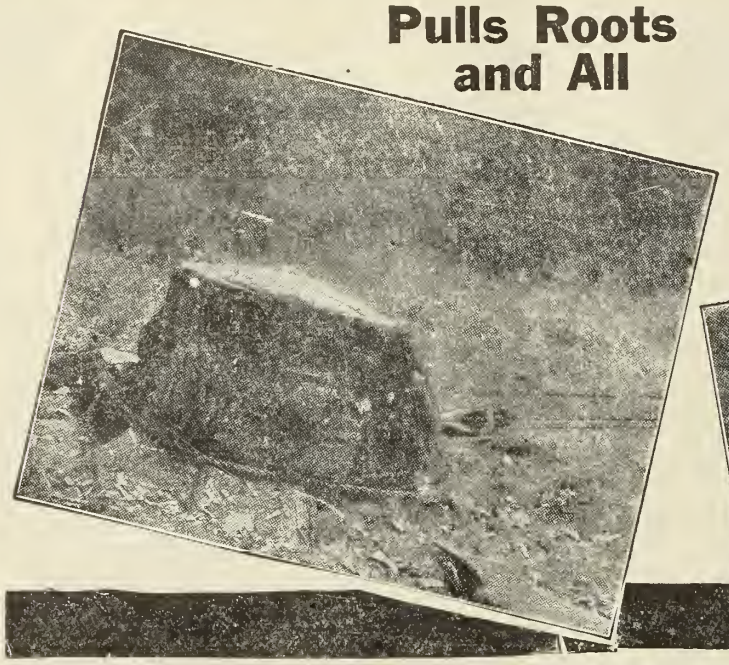
The fam easily pull Cleared lan few weeks land you opportunit

The He Puller mad stronger th The Hercu

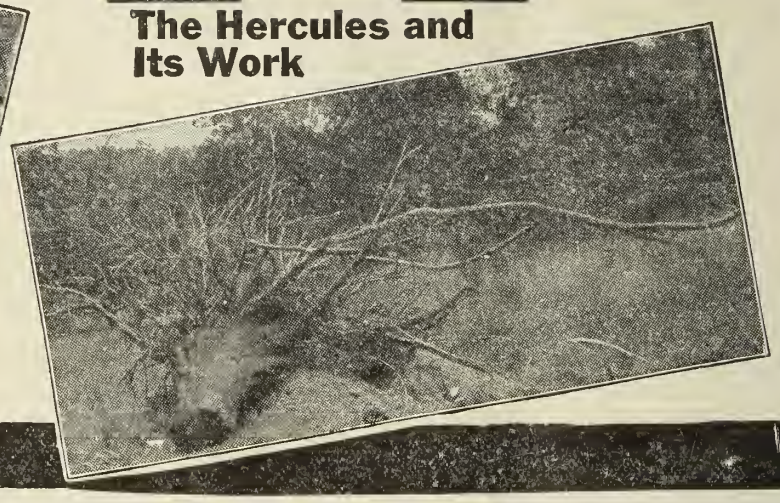
HE ST

Let

Pulls Roots and All



The Hercules and Its Work



Develop Country Life

Country people are depending too much, today, on the cities for their amusements, and the social good times which are essential for everyone. Too often, about all the fun country boys and girls get are the trips they make to the towns, and this fosters the belief in their minds that all the pleasures of life are found in the cities.

This lack of a good, efficient social life is the cause for much of the movement of the country boys and girls to the cities. For all young people like to have a wholesome, good time, and if they can't get some of the good things of life in the country, they will get them in the cities. You never can develop a successful country life until the social wants of the people are provided for. And fathers and mothers would do well to remember this: It is much better to have your children get their social enjoyments in a country community, where you can be certain of the young people they are with, and the environment they are in, than it is to have them in the cities, where you are not certain of these things. Don't forget that.

Country people must not depend on the cities for their amusements, if the rural life is to be successful. Country life is different from city life, and there is no reason why rural social life should not be developed away from cities. Make the country life attractive by the development of rural enjoyments, and much of the rural problem will be solved. For there is more satisfaction and real enjoyment in the well conducted, intelligent country community than there is in the city.

This "glare" and "glitter" that attracts persons to the city is a mighty deceptive thing. While it is true there are some good opportunities in the city, you must not forget that the men who make the big successes, or even the good, average successes, are always those who have special training, and can do things most other persons can't do. For every man who makes a success in the cities, there are many who live their lives without making much more than enough money to live on.

Untrained Men Get Ordinary Jobs.

When the average young man from the country, who has no special training, goes to the city, all the work he can get is just average work, such as work on the streets, running street cars, or an ordinary job as a clerk. Those jobs never pay more than living expenses, they never will, and usually they do not lead to something better. In every city you can find people from the country who have come to the city in their youth, and have taken jobs—not positions—"at the bottom," and have stayed there all their lives. Many of these persons would have made a success of country life, and if they had stayed on the farms, they would now own a good farm, and life would be much brighter. For average work in cities is not easy usually, especially when you realize the fact, which all of the "hands" come to do sooner or later, that they are doing just average work which must be done in order to let someone who has more training make a good success in life.

And the opportunities for the country girls who go to the cities are even less than for young men. Many girls who work in the cities live at home, and work only until they get married. Because of this competition of girls whose living expenses are taken care of at home, the wages in the cities for girls are very low. It is hard for girls away from home to live on their pay.

They stay at cheap boarding houses, and live on a much lower standard than they used to at home. They are exposed to many temptations and dangers they do not have to face in the country.

So, if the young persons from the country desire to go to the cities, they should get some training before they go, if they desire to make a living worth while. Stay in school and get a training that will fit you to do something worth while before you try the proposition of living in a great city.

Parents Must Be the Leaders.

If you are a father or a mother in the country, you would do well to consider the matter of the social affairs of your young people, and how life can be made bright and attractive to them. For it is essential that the older persons in the community think about these things, and act as leaders in this movement. All movements must have leaders, and in the movement for the new ruralism, which will include a wonderful development of the social life of the people, the opportunity for efficient leadership is unlimited. The older people must lead in this movement, which their age and experience have prepared them to do. Look back over the years that are gone, and consider the hopes, ambitions and desires you had when you were in the springtime of life, and you will have a mighty good index of the needs of the young people of today. Help them to satisfy these needs.

But what can you do this winter to organize the people in your community? Well, first you should organize a literary society. Elect a president who knows Roberts' Rules of Order, and conduct the affairs of your society by these rules. Elect a program committee, have this committee plan the programs, and give them the power to assign the members to the numbers the committee desires to have given, and to compel the members to give these numbers. But pay especial attention to Roberts' Rules. The mastery of rules of order for conducting public meetings is absolutely essential, if one desires to be a leader among his fellows, and most persons with good, red blood in their veins have this ambition. It would be well to buy a copy of this book for every member. They do not cost much, the money to purchase the books easily can be raised, and they will be a mighty good investment.

Organize Athletic Teams.

Then you would do well to start some athletic sports, if there already is not something of that kind in your community. There is no reason why athletic teams should not be organized in every rural community in the West, and if they were, they would have a mighty influence in the development of a better rural life. Organize football teams in the fall, basket ball teams a little later in the winter, and baseball teams in the spring and summer. Every community should have enough young men with red blood in their veins who would take a good interest in such sports, and if they are managed as they should be, they will be an influence for good. The team of the community should play the teams from the other communities. These games can be watched by the members of the neighborhood who do not take part in the contest, the games will make a mighty good place for them to go, and they will aid much in the development of a healthy community spirit.

When can the boys practice for these games? Well, Saturday afternoon is

mp Land Into MONEY!

-wheat, oats, barley, clover, etc. *See* l out the stumps!

ump in Five Minutes

ules Stump Puller does it! You can *more of stumps a day!* Think of it! making land, in just a few days or a ending on how many acres of stump more *wasted taxes!* No more lost it!

el, Triple Power

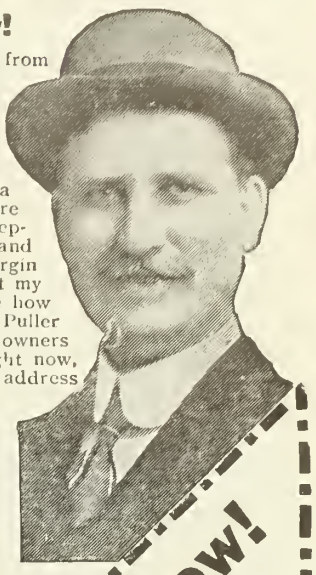
the only genuine All Steel Stump 0 per cent lighter and 400 per cent n puller or any "semi-steel" puller. iple strength to pull out any stump or green tree or hedge no matter how big or deep rooted —and it pulls them out with the *roots and all!* Its triple power principle gives it a powerful pull—yet easier on the team than any other puller ever made. Either self-anchored or stump-anchored. Built low to the ground. It can be furnished with 200 feet of cable—enough to pull 3 acres of stumps without moving the machine.

Three Year Guarantee

Every Hercules All Steel Puller is sold on 30 days free trial and guaranteed for 3 years against breakage. If any casting of your Hercules should break at any time within 3 years from the date of your purchase, I will replace such casting or castings free of all charge.

Mail Coupon or Postal Now!

My new book is a beauty. See the real pictures, from 25 different states, of big stumps it has pulled out like you would pull weeds. Read the many interesting letters from farmers, lumbermen and land promoters. I want you to get the facts. I'll send the new book and special-price offer by return mail. My price will save you at least 50 per cent of the regular cost of a Hercules. I want to get a Hercules in a few more counties, and in order to do it I have made a sweeping reduction in price. Be sure to get my book and offer. I'll tell you the best crops to raise on virgin land where stumps were before. I want to get my free book to you at once, so that you can see how the Hercules All Steel Triple Power Stump Puller does such splendid work making big profits for owners everywhere. Mail me the coupon or postal right now, before you forget, or take down the name and address and write me soon. Address me personally.

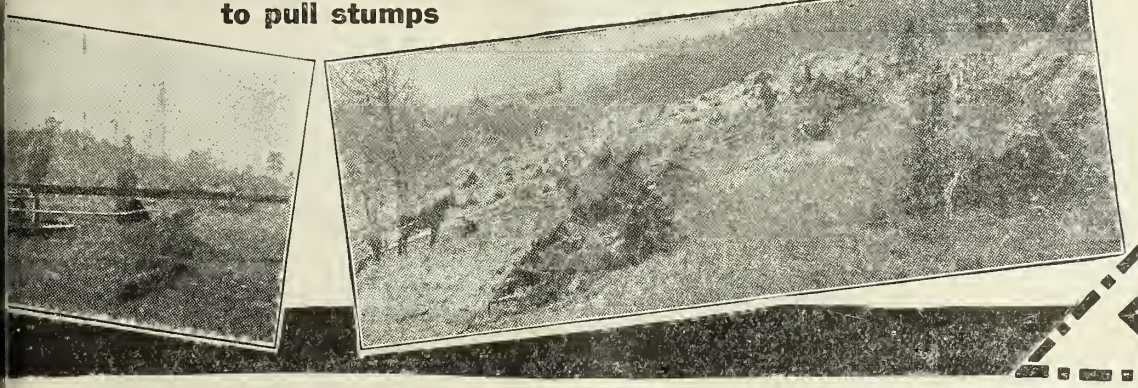


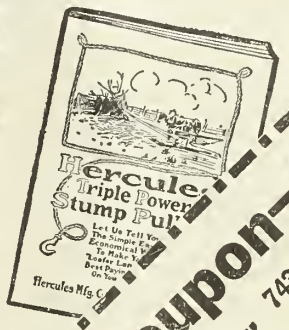
B. A. FULLER, President
Hercules Manufacturing Co.
743 Twentyfirst Street
CENTERVILLE, IOWA

CULES All Steel—Triple Power MP PULLER

d you my new book and new offer. I'll prove that you can make $100 for every $1 you invest to pull stumps

FREE





Rush Coupon—Mail Now!

Hercules Mfg. Co., 7321st Street, Centerville, Iowa

Gentlemen: Please send me free book about the All-Steel Triple-Power Stump Puller. Also your 30-day free trial and low-price-to-first-buyers proposition.

Name.....

Town..... State.....

R.F.D.....

a good time. There is no good reason why country people should work the full six days a week, except in the rush of harvest time, for they will do more and better work if they do not. If the country boys are allowed Saturday afternoon to do as they please, they will do more work in the five and one-half days they do work than they would if they were compelled to work the full six days. Some time for rest and recreation is essential for the best development of every young man.

What other things may be used along this line? There are many. There should be a good rural library in every community, and as the state traveling libraries can be obtained in most states the cost need not be great. Then, there should be an efficient rural church. Get a minister who believes in the country and has the farmers' viewpoint, and pay him a salary that will be large enough for him to live on comfortably. Establish a community center where the people can meet and enjoy the brighter side of life. There are several of these community centers that have been established in the West, and they have been successful.

All these things call for intelligent leadership, and they give a great opportunity for a man who desires to lead his community on to better things. Study the question. Learn the things the community needs. Then work for these things.

The Rural Decrease

In many sections of the Middle West the rural population is steadily decreasing. This decrease has been going on in some of the older settled sections of the country for many years. It is most noticeable in Iowa and in parts of Missouri. The decrease is caused largely by the land hunger of farmers.

Most of the general farmers in the Mississippi Valley have a great greed for land, and the principal ambition of many men is to buy out the owner of "the corner eighty" and extend the limits of their farms. In most cases, this has resulted in an increase in the acreage of the land every man in the community owns. The acre yields have been decreased, while the man yields have been increased in some cases. Where the acreage for every man has increased, the man yield usually is increased also. This movement will continue until the need for a large acre production, with the accompanying high prices, brings the day of small farms.

This movement toward larger farms has been encouraged by land speculators, who have reduced the speculative handling of land to an exact science. Renters and land owners have been encouraged to go West, and settle on land where there never was a chance to make a good living. The influence of the land speculator has been distinctly bad, in many cases. For that matter, all booms are bad for a community, unless they have a very solid foundation in material wealth. The land speculators have bought large tracts of land, advertised these tracts extensively, obtained low homeseekers' excursions on railroads, and have disposed of the land in a "hip, hip, hooray" style. In many cases the purchasers find they have paid too much for the land, while the speculators buy other tracts of land and repeat the performance. Thus the corn belt loses farmers it needs, while the hands go to the farms where they cannot do so well as if they had stayed where they were.

Increased efficiency in modern farm machinery also has helped bring this rural decrease about. Fewer men are needed under the system of extensive farming, where the aim is the greatest production for every man. And the higher price of farm labor has, of course, made necessary the use of larger and better machinery.

The attraction of the towns has had its influence in the decrease. The so-called "glare and glitter" of the cities has an attraction for most rural young people, and it has attracted them to city life, in many cases. This movement will be stopped just so soon as rural life is made as attractive in every community as city life. It is as bright and attractive in many communities now.

Conditions are changing, and the time of the small, well-tilled farms throughout all of West is almost here. When most farms are eighty acres or less, it will be possible to build up a much better rural life than it now is possible to build in a community where the farms are larger than 160 acres, as in the case of most Western communities. The best rural society can't be built where the farms are so large the people do not get to see each other often. Rural life on the smaller, well-tilled farms can be brought up to an exceedingly high standard.

Farm Labor.

The difficulty of getting competent help is one of the conditions which is driving many people from farms who would, under ordinary conditions, prefer farm life. This condition is an indication that better things are in store for the farmers of the country.

While cheap labor may be employed in some industries where most labor is under supervision, and where each laborer has only limited and definite things to do, only the ablest laborers can be used to advantage on the ordinary farms, as it is practically out of the question to give very close supervision to farm labor. Such labor must be trusted alone with valuable animals and machines, it must possess considerable skill in their manipulation and care. Such labor must further possess an earnest desire to do efficient and careful work without being constantly under the supervision of some overseer or foreman.

Comparatively high wages must be paid before farm labor of suitable quality can be obtained. The present scale of wages for this labor is entirely inadequate in view of the demands made upon it in comparison with requirements in other industries. For example: A fireman on a railroad engine receives from $80 to $130 a month, while no greater skill is required to fire one of these engines than to feed and manage a good herd of stock. A street car conductor receives from $75 to $90 a month, and certainly no greater skill or ability is required for such work than to handle three or four horses and a self-binder. At present, from $30 to $35 a month and board or a total of from $45 to $50 a month, is considered very good wages for farm hands.

If the business of agriculture is to compete with other industries, then agriculture must pay as good wages for the same class of work as is paid by the other industries; and the people who use farm products must pay such a price for them as will enable a farm owner to compete in the open labor market.

Minnesota. A. D. WILSON.

The fertility of many farms has been reduced by improper systems of tillage and crop, and commercial fertilizers are useful and even necessary in the economical improvement of such lands.

Commercial Lime-Sulphur

Does It Pay to Make Spray Mixtures at Home? Manufacturer Presents Arguments Against It

By F. O. Moburg

Does it pay, and is it advisable, for the fruit growers to make lime-sulphur solution at home? This is a subject that has been much discussed. In discussing this subject it is necessary that we express our candid opinions, reserving and claiming the right to differ with experiment station men, or any others on this or any subject. This article, or presentation of our views, is not intended as a criticism of state experiment stations or men connected with them, for, generally speaking, these stations and their field and office men are of very great help and profit to the fruit growing industry. We do, however, differ with some on this subject, but in doing so nothing personal is intended nor made use of, and we will give our reasons for our views. We have heretofore and shall continue to discourage "hap-hazard methods" and encourage consistent business like methods for getting uniform results in the handling of orchards.

In the first place, let us ask: What has been the matter with orchards of the eastern and middle-western part of the United States? The answer is: Hap-hazard methods. Why are some men more successful with their orchards than others in the same community with the same kind of soil and trees? The answer is: The successful men are, generally speaking, more thorough, more expert, men who study and avoid hap-hazard methods, and who do not scare at a little extra expense.

Taking the history of all the fruit growing communities of the United States, the fact is indisputably proven that the orchardists who spend the most money per acre on their orchards are the men who net the most profit per acre year after year.

Generally speaking, the only excuse or cause for anybody arguing for or thinking of making lime-sulphur wash at home is because they may think it is cheaper, considering first cost only.

It is hard to understand why practical business men or practical orchardists should be willing to listen to and accept the "theory" of somebody who has never had any practical business experience of "footing the bills" of total expense (and don't forget that "total bills of expense" includes more than just the cost of sulphur and lime). It's easy for the theorist to advise, but you should not be too ready or willing to follow the fellow who has not had the whole experience and whole expense of several years to take into account.

For instance, some experiment station men and some bulletins issued by them, say that to make a barrel of lime-sulphur solution, use 110 pounds (some say 125 pounds) sulphur and half as much lime. That gives the impression that this makes stuff equal to a barrel of commercial lime-sulphur solution. Now see if it does.

A reliable brand of commercial lime-sulphur solution is 25½ to 26½ per cent sulphur in solution. These same bulletins admit this. Fifty gallons weigh 538 pounds, and 25½ per cent of that is 138 pounds of sulphur in solution. Now, can anybody take 110 pounds or 125 pounds of sulphur and get 138 pounds in solution?

The facts are, and have been fully, conclusively and repeatedly proven by expensive experience all over the United States that the way the orchardist makes it, he cannot, on the average, get more than about two-thirds of the sulphur used into solution, so to get 138 pounds into solution you would use 207 pounds sulphur and 103½ pounds lime; add to that: Cost of fuel, extra labor, waiting at times with a force of workmen to get more hot solution, and cost of grinding out of pump cylinders and nozzles because of grit and sediment. Add to that the still greater and wholly necessary cost, where home-made stuff is used, the lack of uniform results because of the use of spray that was not uniform in strength and percentage of the very essential and necessary ingredients.

The states and the federal government are passing laws compelling manufacturers to make and guarantee their solutions to be uniform. Mighty good laws, and don't it prove that these states and the United States have found that to be an important factor for getting uniform results? Not one of the regular insecticide manufacturers would claim or even dare try to make uniform products by using such equipments as is used by home wash makers.

While writing this article, in one dlivery of mail, we have received three letters from three different communities. Not having time to get their permission to use the writers' names, we will not do so, but from information they give us we quote the following. The first one writes:

"Last season I bought my lime-sulphur at a local plant. A doctor had charge of the making, so I thought it would be all right and the price was cheaper. That is, I thought it was, but no two lots were the same and with some tanks of it I got results while with other tanks I got no results. I had a big crop, 40 acres apples, but on account of scale spreading all over my orchard I have practically lost my crop and it is a hard blow. Others of my neighbors had the same experience. Other neighbors bought and used commercial spray and they have clean apples."

This man lost more on that one crop than his total cost of spray will amount to in ten years.

The second one writes: "For the past two years Mr. ——— has been boiling our lime-sulphur spray. Now he thinks he don't want to make any more and says it cost a good deal more than he had figured. I think if you will send your man here he can work up a carload or more. Another man here is going to try making it, but people don't like the home-made stuff as well as yours. I used yours three years and you will have my orders from now on. Will you send your salesman here?"

The third man writes: "My brother and I are large growers and we had been told by a state experiment station man that we could make lime-sulphur for half what the ready made would cost. We have had the experience now and paid the price. Others here have made it and while in some cases results have seemed good, yet many get poor results and it's not cheaper than the ready made. We were always rushed when making it and frequently have to take and use it hot, sediment and all, and that grinds out the pump and nozzles. We have no way of knowing whether it is uniform or not and it is not a farmer's job."

These three letters came to us in one mail. We get similar information from all parts of the United States.

Another Way of Looking At It.

For example we will name three states—New York, Ohio and Missouri.

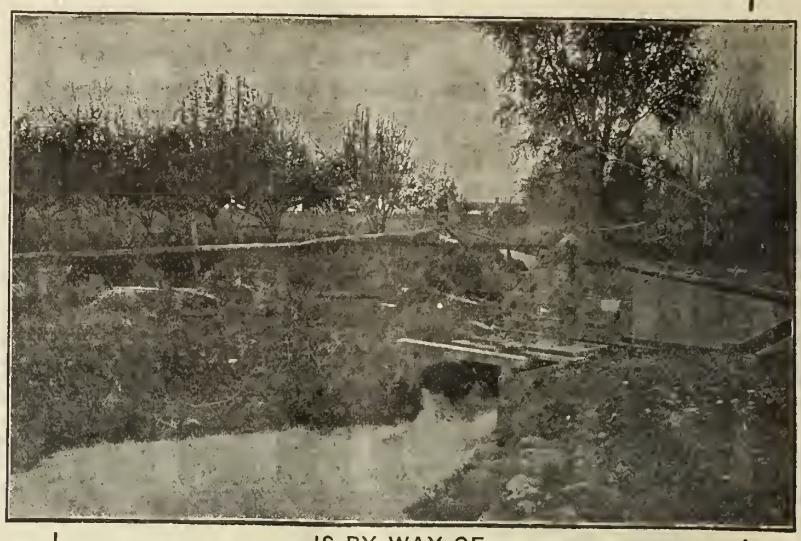
We will presume that each of these states has 2,000 fairly good sized orchards with owners wanting lime-sulphur spray. It requires a pretty good boiler to get steam pressure enough to get even two-thirds of the sulphur into solution. A boiler, boiling tank or tanks, settling tank, piping, valves, etc., would cost at least $100. Some say: "But we will use barrels for boiling it." Yes, but in doing so the boiling over, the leakage, etc., will be more expensive than tanks. An investment of $100 each for two thousand people is a total of $200,000, or $2.00 a barrel on 100,000 barrels of spray, or $4.00 per barrel on 50,000 barrels. Cut that cost in two and figure an investment of $50 for each outfit. That would be $100,000 for the two thousand people, or $2 per barrel on 50,000 barrels, or $4 per barrel on 25,000 barrels. That is before figuring anything for cost of sulphur, lime, fuel, time, labor, grinding out of pump cylinders, nozzles, hose, lack of uniform results, etc.

Figure, too, that these outfits that are used a month or two, then stand idle ten or eleven months, will not last and would have to be renewed

UTAH

THE WAY TO REACH the Fertile Irrigated Valleys of

Colorado, Utah *and* New Mexico The Cream of the United States



IS BY WAY OF

COLORADO

The Denver & Rio Grande Railroad

"The Scenic Line of the World"

Valleys in COLORADO		Valleys in UTAH		Gunnison
Arkansas	Gunnison	Green River		Uintah Basin
Animas	Uncompahgre	Price River		Valleys in NEW MEXICO
Eagle River	North Fork	Strawberry		San Juan
Rosring Fork	Shenandoah	Utah		Chama
Grand River	Paradox	San Pete		Espanola
	Montezuma			
	San Luis			

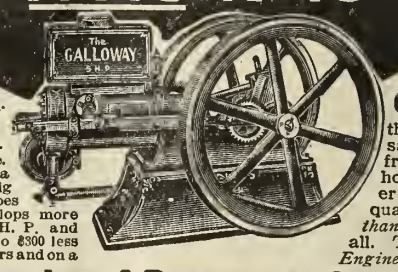
CHOICE OF TWO SEPARATE AND DISTINCT ROUTES TO THE WESTERN SLOPE

Special Rates for the Homeseeker and Settler via RIO GRANDE to All Points in the above mentioned sections. For free descriptive booklets, folders, etc., apply to Frank A. Wadleigh, General Passenger Agent, Denver, Colorado.

NEW MEXICO

IRRIGATED LANDS

"GALLOWAY" MEANS "BARGAIN"
And I Prove it To You

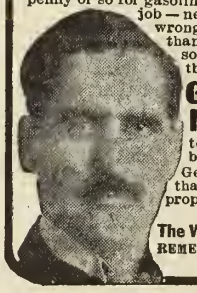


This Time It's On ENGINES

—the most substantially constructed and simplest-to-run engine that ever came out of a factory. You won't find another engine like it anywhere. It starts at a touch—costs only a penny or so for gasoline on a big job—never goes wrong—develops more than rated H. P. and sold $50 to $300 less than others and on a

$50 To $300 CHEAPER!

than you can buy same H. P. engine from mail-order house, jobber or dealer anywhere of equal quality—and *better than the best* of them all. That's a *Galloway Engine.*



Guarantee of Permanent Satisfaction or Money Back

Write Your Name on a Postal and I'll mail you my big engine book. Pick out the engine you want. I'll ship it to you on 30 to 90 days' FREE trial. Then, if you don't want the engine, send it back. The trial will not have cost you a penny.

Get the book and see the bargains I'm offering. There isn't a house in the country that I don't beat for price combined with quality. Write now for my special 1913 proposition and price.

WM. GALLOWAY, President

The WILLIAM GALLOWAY COMPANY, 1035CG Galloway Station, Waterloo, Iowa

REMEMBER—We carry stocks of our Engines in Chicago, Kansas City, Council Bluffs and Minneapolis—insuring prompt shipment.

7 Per Cent

Your Idle Money will be amply secured, if invested in our First Mortgage GOLD BONDS BEARING 7 PER CENT INTEREST, payable semi-annually. Particulars furnished to bona fide investors upon application to

THE FRUIT-GROWER AND FARMER
St. Joseph, Missouri

In writing please mention The Fruit-Grower and Farmer.

FERTILE FARMS and Unimproved Lands in Delaware

diversified farming, delicious fruits and ideal homes. For information, address
State Board of Agriculture, Dover, Delaware

FITZ Overalls

Auto equipment

is incomplete without a suit of Fitz Overalls. These garments are large—easily slipped on over your clothes. A sure protection from grease and dirt in case of emergency, or for shop work.

Free Fitz Book on request.

Burnham-Munger-Root
DRY GOODS CO.
KANSAS CITY, MO.

Spray Trees Now

WHILE YOU'VE TIME TO DO A THOROUGH JOB. DON'T PUT OFF TILL BUSY SPRING. USE

Target Brand Scale Destroyer

A miscible oil that destroys San Jose and all other scales, also kills larvae and eggs of the leaf roller. It spreads on contact with the tree, thus covering every part, even those missed by the direct spray. Endorsed by every experiment station where tested. **Agents Wanted. Write for Circular.**

HORTICULTURAL CHEMICAL COMPANY
135 South Fourth St. Philadelphia.

In writing please mention The Fruit-Grower and Farmer.

GET THE BEST

A Good Spray Pump earns big profits and lasts for years.

THE ECLIPSE

is a good pump. As practical fruit growers we were using common sprayers in our own orchards—found their defects and invented the Eclipse. Its success forced us to manufacturing on a large scale. You take no chances. We have done all the experimenting! Large, fully illustrated Catalog and Treatise on spraying **Free.**

MORRILL & MORLEY MFG. CO., Box 7, Benton Harbor, Mich.

In writing please mention The Fruit-Grower and Farmer.

Dr. Brooks

AGRICULTURE

A course of forty lessons in Soils, Tillage, Fertilizers, Farm Crops and Animal Husbandry under DR. WILLIAM P. BROOKS of the Massachusetts Agricultural College. Courses in Horticulture, Floriculture, Landscape Gardening, Forestry, Poultry Culture, Farm Accounting, etc., under able professors in leading colleges. We have made a specialty of the teaching of Agriculture and related branches by correspondence for many years.

250-page catalogue free. Write today.

The Home Correspondence School
Dept. 59, Springfield, Mass.

SALEM NURSERY COMPANY SALEM, OREGON

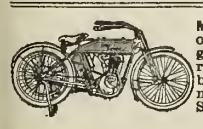
If you want the best results plant the best stock. This is the kind we grow. AGENTS WANTED.

EASY TO SELL OUR TREES

7 Per Cent

Your Idle Money will be amply secured, if invested in our First Mortgage GOLD BONDS SEARING 7 PER CENT INTEREST, payable semi-annually. Particulars furnished to bona fide investors upon application to

THE FRUIT-GROWER AND FARMER
St. Joseph, Missouri



Motorcycle Free—Hundreds of other prizes—bicycles, cameras guns, watches, tool chests, gold rings, etc. Full information and big Premium List Free. Write me today. **E. T. Meredith**, 320 Success Bldg. Des Moines, Ia.

every two to four years at most, and by calculating all these things you will get a better understanding as to whether or not the home making of lime-sulphur spray is cheaper, all things considered, or whether it is a tax upon any state.

Haphazard methods have done more than anything else to hold back the progress and success of horticulture, and we maintain that anything or anybody who advocates or encourages anything that tends now toward further hap-hazard methods is consciously or unconsciously doing the fruit growing industry a positive injury, and that effects every industry within each fruit growing state.

It is very generally agreed that these laws compelling manufacturers to file a certificate or guarantee to get a serial number, to place guarantee on each container, etc., are a good thing because it gives protection to fruit growers against getting spray material that is not uniform, which would not give uniform results, and which would prove detrimental to the fruit industry.

How consistent with good laws is it, then, to influence fruit growers to use something which is not uniform, cannot be made uniform by inexperienced people and with equipment used, has no guarantee on the container, does not comply with the state law when supplied to other growers, and is made from or with materials which do not run uniform and are never analyzed before being used?

What Does it Amount To?

Thousands of people have made lime-sulphur solution at home and thousands have quit making it. Why? A fifty-gallon barrel of commercial lime-sulphur solution, used one gallon to eleven gallons of water, makes 600 gallons. The average grower uses about one and one-half gallons diluted spray per tree for dormant spraying, so one barrel makes spray for 400 trees. Now suppose the home-made was $1 per barrel cheaper, counting first cost only. That would be 100 cents on 400 trees, or one-fourth of one cent per tree. Even if there was $2 difference, that would be but one-half cent per tree.

For summer spraying the commercial lime-sulphur is used one gallon with thirty-three gallons of water, so the difference, if any, would be only one-third as much. The difference in results when using a uniform product is, on the average, worth at the very least calculation $1 per tree and frequently several dollars per tree.

We do not deny—on the contrary, we admit—that sometimes good results follow the use of home-made wash, but we do claim, and no thinking man with practical experience will deny, that the home-made wash is not uniform, is not analyzed, is not made with tested, uniform and analyzed lime and sulphur, is not guaranteed to neighbor users as to percentages, etc., does not comply with state laws, will not give the same uniform results, and if those things are not of importance to fruit growers, then why is the United States government and the states passing and enforcing these laws referred to?

The fruit growing industry is not farming. It is a scientific business. Things done in a lax or unsystematic or hap-hazard way are fast being done away with. This is becoming so important that fruit buyers, when going into a community to buy fruit, before going to an orchardist, they first inquire what his methods of spraying have been. If hap-hazard, they don't want the fruit, unless at a very low price.

Two Rex Spray Factories Burn.

Two disastrous fires crippled the Rochester and Omaha factories of the Rex Company, manufacturers of lime-sulphur. The fire in the Rochester plant occurred on November 6 and the factory and contents were destroyed, except some tanks which were made of boiler iron, standing on concrete foundations. Two thousand oak barrels were in the building at the time of the fire, in addition to sulphur and spray material, and the whole would invoice $10,400, on which was insurance of $4,500. The building is to be rebuilt at once, and meanwhile orders are being supplied from the Toledo factory.

Immediately after the Rochester fire, the Omaha plant of this company burned, having caught from some unknown cause. But the loss in the Omaha plant was much less than at Rochester, and can be equipped again in short order. While these fires have caused heavy losses, The Rex Company advises that they will be able to take care of their trade in good shape.

Manure Spreaders for Profit.

The season for the most frequent use of manure spreaders is approaching. Many farmers are debating the advisability of purchasing. Many doubt its economy on farms of less than 200 acres. All are aware of the great advantage in extra evenness of scattering manure with the spreader. Most farmers realize a given amount of manure will cover a larger acreage when spread in this manner. The advantage is especially great on meadows where coarse bunches of straw are a nuisance in the hay crop.

Farm management investigations on a number of farms in Minnesota indicate that a spreader will make a profit on any farm which distributes 250 tons or more a year. This takes no account of the added ease of labor to the farmer, but considers only the financial saving and the fact that man and horse labor are enough more effectively employed to more than pay interest, repair and depreciation charges on the spreader. This amount of manure should be handled on farms of 160 acres or more, or on any farm which has twenty-two cows, sixteen head of young stock and eight horses, or equivalent stock.

Minnesota. F. W. PECK.

Get the spraying machine in readiness before the cold weather comes. Clean the tank and have the engine working perfectly, but be sure to drain all of the water from the jacket and avoid a break that is sure to occur if the water freezes in the machine.

The best fertilizers cannot exert their full effect on soils that are too dry or too wet, too compact or too porous. They can furnish but one of the conditions of fertility.

A Merry Christmas for that Boy of Yours!

Your boy's Christmas will be the happiest ever, if you will send him THE BOYS' MAGAZINE. *It is a gift that lasts a whole year.* THE BOYS' MAGAZINE is chock full of just the kind of reading *you* want *your* boy to have. Clean, inspiring stories written by such noted boys' authors as Hugh Pendexter, Everett T. Tomlinson, Wm. Heyliger, etc. *Practical* and *instructive* departments devoted to Electricity, Mechanics, Photography, Carpentry, The Boy Scouts of America, Stamps and Coins. THE BOYS' MAGAZINE is beautifully illustrated throughout—each issue has a new handsome cover in colors.

WALTER CAMP edits THE BOYS' MAGAZINE. Mr. Camp is known everywhere as America's highest authority on Athletics. Every boy should read his ideas of true, manly sportsmanship.

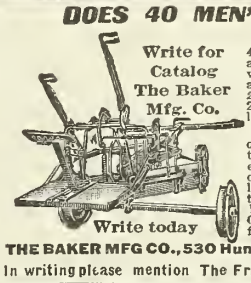
SPECIAL OFFER! *FOR ONLY $1.00* we will send you THE BOYS' MAGAZINE for a whole year *and* a copy of the most useful and practical book you ever read, "Fifty Ways for Boys to Earn Money," *and* this Electric Engine. This engine is a perfect piece of workmanship. It is considerably larger than illustration. Runs 1,000 revolutions a minute on one dry battery. Safe; easy to operate. A marvel of mechanical and scientific ingenuity. Send in your subscription to-day, and the engine and book will be forwarded at once, all transportation charges prepaid. Satisfaction, or money refunded.

The Scott F. Redfield Co., 748 Main St., Smethport, Pa.
THE BOYS' MAGAZINE at all news-stands, 10c a copy.

In writing please mention The Fruit-Grower and Farmer.

20th Century Grader

DOES 40 MEN'S WORK



Write for Catalog
The Baker Mfg. Co.

Write today

Digs irrigation ditch 4 feet wide, 26 inches deep and one mile long per day, with one man to operate and a team of horses. Cost, only *2c per rod.* Pays for itself in 20 days. Saves time; saves labor; increases profits.

Reinforced steel throughout—light—strong—guaranteed. Makes irrigation ditches and builds roads—many other farm uses. Will last a lifetime. Low in price. Easy terms to responsible parties. *Write for catalog*—sent free. Contains valuable pointers for increasing crop profits.

THE BAKER MFG CO., 530 Hunter Bldg., Chicago, Ill.

In writing please mention The Fruit-Grower and Farmer

Rubber Stamps

You need Rubber Stamps for marking berry boxes, crates, stationery, etc. Send for free catalogue.

Gardner Office Supply Co. SPRINGFIELD MISSOURI

Statement of Ownership, Management, Etc.

For Postoffice Department—Required by Act of August 24th, 1912.

Name of Publication, THE FRUIT-GROWER AND FARMER
Published Monthly at St. Joseph, Missouri

Names and addresses of business and editorial staff:

James M. Irvine, Managing Editor, St. Joseph, Mo.
Prof. E. H. Favor, Horticultural Editor, St. Joseph, Mo.
Floyd B. Nichols, Agricultural Editor, St. Joseph, Mo.
W. G. Campbell, General Manager, St. Joseph, Mo.
American Printing Company, owner and publisher, St. Joseph, Mo.

Owners, American Printing Company, St. Joseph, Missouri, a corporation organized under the laws of the State of Missouri.

OFFICERS AND STOCKHOLDERS:

W. G. Campbell, President
James M. Irvine, First Vice-President
F. L. Campbell, Second Vice-President
W. P. Tracy, Secretary-Treasurer

I certify that the above is a correct list of all stockholders in above corporation, and that all information given above is correct.

W. G. CAMPBELL, President & General Manager,
AMERICAN PRINTING COMPANY,
Publishers of The Fruit-Grower and Farmer.

St. Joseph, Buchanan County, Missouri, October 9, 1912.
Subscribed and sworn to before me this ninth day of October, 1912.
(Seal) WALTER A. LANDIS, Notary Public.
My commission expires April 29, 1913.

A Long War on Grape Insects

By A. M. Loomis, New York

(Continued from November.)

The Grape Experiment Station.

In the fall of 1908 the writer of this article took the first step which led to the solution of the problems. Each winter a series of fruit institutes had been held in the various grape belt towns, each year with growing conviction on the part of those who attended that no matter how well posted the speakers might be on other fruit culture, they could not help the grape growers. Prof. U. P. Hedrick, then and now horticulturist of the Geneva, N. Y., Experiment Station, expressed this sentiment in his talk at the institute at Westfield, in December, 1908, and at the close of the address the writer asked him if he did not feel that the importance of the grape industry warranted a special experiment station being established in the grape belt to discover, if possible, the remedies for the insect pests, and the causes, if other causes existed, for the falling productivity per acre.

Professor Hedrick is to be credited with instant acquiescence in the plan. He agreed to secure the approval, if possible, of Director Jordan of the Geneva Station, and that he should visit the grape belt and see for himself what was wanted. The writer agreed to form an organization of prominent grape growers in every township to meet Dr. Jordan and present the matter to him and co-operate with him in whatever steps should be deemed necessary. This plan was carried out. Dr. Jordan met a committee of the grape growers and after spending one entire day going over the situation, recommended that the legislature be asked for sufficient money to lease an experimental vineyard of at least ten acres, for a term of not less than ten years, and establish a vineyard laboratory here to go into the fertility problems and the remedies for the insect pests thoroughly and systematically.

This plan was carried out. The money was appropriated, and before the spring of 1909 was ended the site had been chosen at Fredonia, and the work of taking a vineyard survey to secure the basic data for future work was under way. The writer of this acted as executive secretary of the organization which did the local work on this proposition and wishes here to give credit to many efficient assistants who prepared and circulated petitions and did other work in bringing this about successfully.

All Problems Not Yet Solved.

The above paragraph summarizes one of the most important winter's work which was ever performed for this great industry. It emphasizes the assertion so frequently made, so little followed in our American agriculture, that in union there is strength. Working spasmodically and without correlation of effort, the state experiment station, the state college at Cornell, the state department of agriculture, and the Federal department of agriculture had in five years accomplished practically nothing. Now one department, that of the experiment station at Geneva, properly financed, and with some assistance when needed and asked for from all the others, took over the fight to save a fifteen million dollar industry, and succeeded.

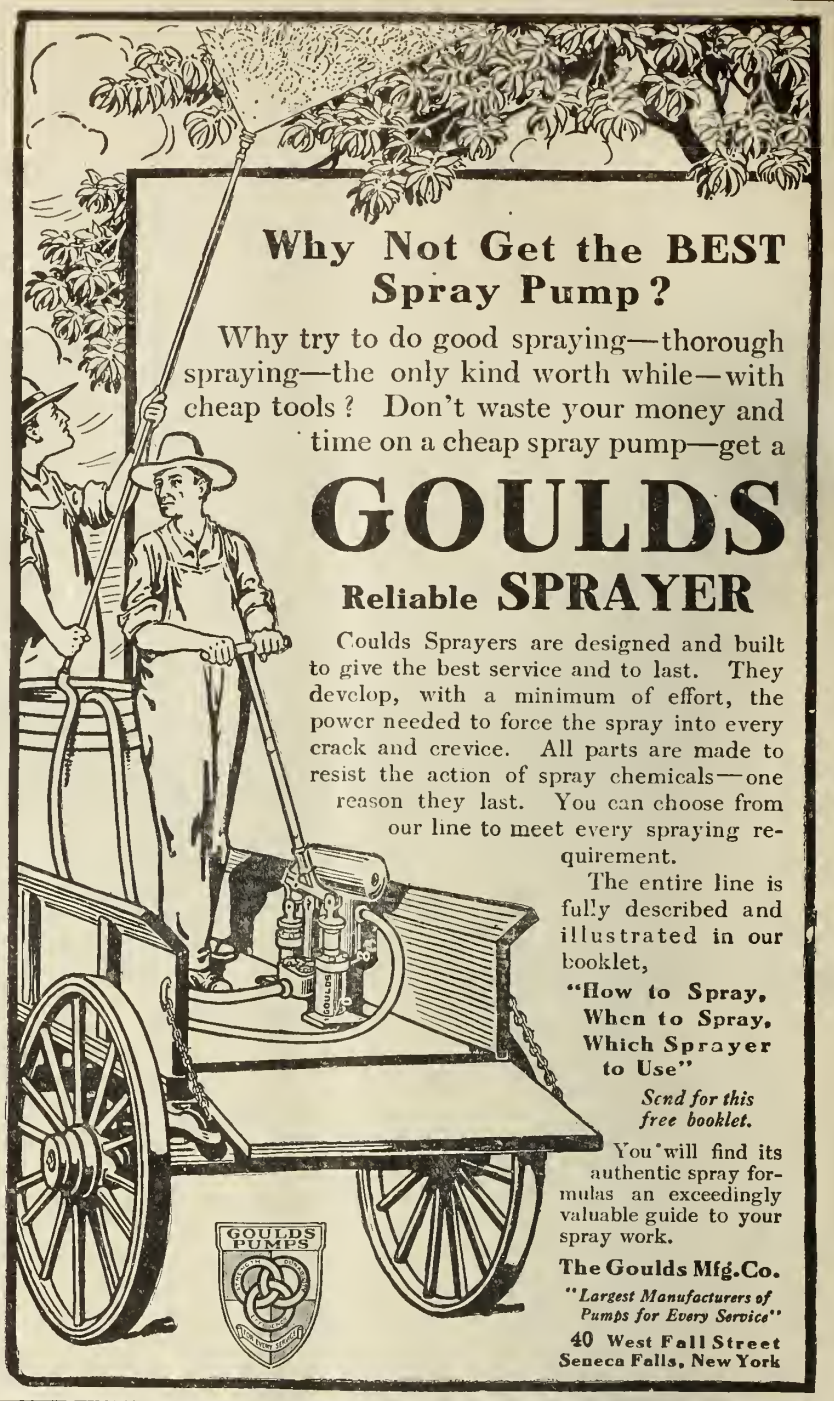
Still it must not be understood that the victory has been won without vigilance and labor. Not even today have all the problems been solved. While a real defense against the grape root worm is now known, and the methods of using it worked down to a basis which is practical and economical, there are still many things to know about the work. The same is true of the leaf hopper, which has proven a serious pest to handle. And over and above all else, problems of maintaining soil fertility have been developed and methods and measures are being worked out which will take some years to complete, but which will prove to be worth millions once fully understood.

The Remedy.

The discovery of the specific against the grape root worm was almost an accident, but an accident bred of the desperation which followed two years of unsuccessful effort. The trouble with this most troublesome fellow is that the beetle will not eat enough of the ordinary poisons to kill. Every known poison was tried, administered in every known way. Co-operative experiments were tried by dozens, and with little results until in late June, 1910, it fell to the lot of Sherman J. Lowell, now overseer of the New York State Grange, in a co-operative experiment with Frederick Z. Hartzell, station entomologist, to stumble onto the remedy. He had sprayed, with no results in dead bugs, the day before, and began to use some common horse sense on the problem. "If the bugs will not eat the poison, I will fix it so they will like it," thought Lowell, and the next tank of mixture of arsenate of lead he fixed up, he also dumped in a gallon can of New Orleans molasses he had for horse feed. "I'll see how that works," he told his son, as he drove into the field.

The spray was applied, and next morning Mr. Lowell went out to look for results. For the first time in his spraying he could find many dead beetles under the vines, and few living ones on the vines. Previously he had found plenty of living beetles, very few dead ones. It looked like success. He tried it again, and next morning found similar results. He then sent for Mr. Hartzell, and together they looked over the work, and forthwith, although the season was late, Mr. Hartzell sent out word to have it tried wherever other co-operative spraying experiments were under way. The results were uniformly successful. Next season more extended tests were tried, and at the close of the season—that is, the close of 1911—this remedy was pronounced satisfactory. The dreaded grape root worm had found a master.

So, too, the leaf hopper pest remedy was found in 1909, tried out and thoroughly tested in 1910, and last year the device for properly applying the remedy was invented by Mr. Hartzell, but not patented. This discovery was the result of general advances in entomological science rather than any fortunate accident like the Lowell discovery. The sucking insect it was known must be killed with a contact insecticide. Whale oil soap did not prove effective, kerosene emulsion killed the vines, lime-sulphur proved a complete failure, damaging the grapes past recovery. Little was left but nicotine, and this had every reason to prove successful. In cage experiments it killed every leaf hopper hit except the adult after the last moult, when the heavy beetle wings seemed to furnish him protection. So it became only a problem of when the leaf hoppers must be sprayed to catch the most of them before they reached



Why Not Get the BEST Spray Pump?

Why try to do good spraying—thorough spraying—the only kind worth while—with cheap tools? Don't waste your money and time on a cheap spray pump—get a

GOULDS

Reliable SPRAYER

Goulds Sprayers are designed and built to give the best service and to last. They develop, with a minimum of effort, the power needed to force the spray into every crack and crevice. All parts are made to resist the action of spray chemicals—one reason they last. You can choose from our line to meet every spraying requirement.

The entire line is fully described and illustrated in our booklet,

"How to Spray, When to Spray, Which Sprayer to Use"

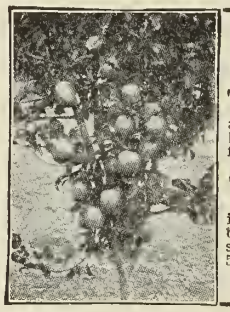
Send for this free booklet.

You will find its authentic spray formulas an exceedingly valuable guide to your spray work.

The Goulds Mfg. Co.

"Largest Manufacturers of Pumps for Every Service"

40 West Fall Street
Seneca Falls, New York



Kill the Bugs and Worms

THE Department of Agriculture states that millions of dollars' worth of fruit and vegetables are destroyed every year in the United States by injurious bugs and worms. Our spraying devices afford the newest and most effective means of killing these pests on trees or vegetables. Complete illustrated catalogue sent free for a postal. Write today.

"The Why and How of Orchard Success"

is a handsome new book that will be found helpful by everyone who raises fruit or vegetables. It tells how to graft and prune; how to prevent mold, mildew, scale, scab, etc. It is a regular mine of information. The book is yours for 50 cents. Send for it TODAY.

FIELD FORCE PUMP CO., 802 Grand Ave., ELMIRA, N. Y.

Protect Your Trees

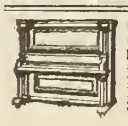
DON'T take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using

Hawkeye Tree Protectors

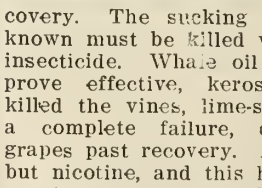
Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—¾ cent apiece. Special sizes made to order. Write for circular and samples.

We make Fruit Baskets — get our prices.

Burlington Basket Company
118 Main St., Burlington, Iowa

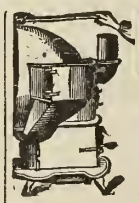


Piano Free—Hundreds of other prizes—Kitchen cabinets, dinner sets, gold watches, sewing machines. Full information and big Premium List FREE. Write me today. **E. T. Meredith,** 320 Success Bldg., Des Moines, Ia.



Don't grow cider apples. Rid your trees of scale and fungous pests and grow number one apples by using "Scalecide"—the one absolutely sure scale spray. "Scalecide" is easy to handle, it will not clog or corrode the nozzle or injure the skin. It will build up a poorly paying, run down orchard and make it return large profits. It will maintain a good orchard in prime condition. "Scalecide" is the best spray for San Jose. It kills every scale it reaches. "Scalecide" goes further, is cheaper and more effective than lime sulphur. Endorsed by Experiment Stations and used by the best orchardists everywhere. "Scalecide" will solve your scale problem. Our SERVICE DEPARTMENT furnishes everything for the orchard. Write to-day for our new booklet "Pratt's Handbook for Fruit Growers" and "'Scalecide'—the Tree Saver." They contain valuable information for orchardists. Every fruit grower should have them. Both are free. B. G. Pratt Co., Dept. E 50 Church Street, New York City.

H. J. Weber & Sons Nursery Co., Western Distributing Agents, Nursery, Missouri



COOK YOUR FEED and SAVE Half the Cost—with the PROFIT FARM BOILER

With **Dumping Caldron.** Empties its kettle in one minute. The simplest and best arrangement for cooking food for stock. Also make **Dairy and Laundry Stoves, Water and Steam Jacket Kettles, Hog Scalders, Caldrons, etc.** Send for particulars and ask for circular S

D. R. Sperry & Co., Batavia, Ill.

In writing please mention The Fruit-Grower and Farmer.

TREES and PLANTS All kinds—by the Millions—at wholesale prices. Big supply Apple and Peach Trees. Privet Hedging. **The Westminster Nursery, Westminster, Md.**

We Sell FARMS in Oceana, greatest fruit Co., in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. **Hanson & Son, Hart, Mich.**

the adult moult, and how to apply the spray with sufficient force to penetrate the dense foliage of the grape vines, on the under side of which the hoppers worked.

The Spraying Machine.

A device to do this without requiring the services of two extra men with the trailing nozzles working in the midst of the sickening spray of nicotine was worked out by Mr. Hartzell in 1911. It consists of swinging arms fitted with three cyclone nozzles at varying heights from the ground, connected with the spray tank. The arms, with the nozzles protected by a guard, are held out from the sides of the spray rig by springs, so that they carry the nozzles. They press close against the vines between which the rig is drawn by a team. The lower arm just clears the ground and swings freely enough to carry the nozzle on its outer end almost under the vines. This nozzle is trained almost directly up and throws a powerful spray under the vine. The next arm is twelve or fourteen inches higher and passes just across the bottom of the heaviest foliage. This nozzle is directed at an angle upward and the spray is ejected with sufficient force to blow its way into the midst of the vine and across to the underside of the foliage on the opposite side of trellis. The top arm is graduated to reach just about the top of the vine and arranged similarly to the middle or second arm.

This apparatus, using a spray which contains nicotine in proportion of 1 part of nicotine to about 3,000 parts of water (secured by diluting the "Blackleaf 40," so called, a 40-per cent solution of nicotine with 1,300 parts of water) and forced into the infested vines with a pressure of upwards of 125 pounds, has proven absolutely effective. It has also been found that this spray combined with arsenate of lead and molasses will serve the double purpose of destroying the leaf hopper and the root worm beetles at the one application. It must not be applied with bordeaux, however, and arsenate of lead is the only arsenical which can be used on grapes. The apparatus is not patented. Any plumber, gas fitter or blacksmith can make it.

With the control of these pests, and accompanying the widespread interest in the experimental work, has come not only the safety of the vineyard interests, but a general revival of interest in the finer and more intensive practices of cultivation—in short, renewed life to the entire industry. The days when every outlook was dark have given place to a better feeling, better cultivation, more interest. This means better fruit, more of it, better pruning, and without a doubt better marketing and more money.

The Cultural Methods.

It was a coincidence, perhaps, and a very favorable season has much to do with it, but in 1909, the first year the work of the experts had really begun in the experimental vineyard, the crop for the entire grape belt moved upward by a big jump. In 1908 the crop was 4,300 carloads; in 1909 it was 7,500 carloads. In 1910 a bad season intervened, cutting the total down to 5,800 carloads; in 1911 the increase was still further noted, the crop being 7,900 carloads, and that means a lot of grapes—since the pests attacked the belt. This year indications point to a similar crop, wherein winter killing last winter, bad cold weather this summer, and a general let down of effort due to the big crop of last year are controlling factors. It is thought that the crop this year will come close to the 6,500 carload mark.

Added emphasis should be given in conclusion to two points in the above narrative. First, it took six years for the grape growers to finally and fully awaken to their need for combined effort and the best scientific experience and assistance that could be secured. That was a foolish and wicked waste of time as looked back on now. The next big industry to be attacked ought to know this story, and be ready to act without waste of time or to convince doubters. Once the effort was made and the trained men on the job, it took two years of hard work in co-operative experiments to get on the track of a remedy and to perfect the methods, apparatus, etc., necessary to its economical and effective application. That is the vigilance and work part of the story. Now the fight is won, the industry is safe, a very large money value is preserved, and the growing of grapes in this section is perpetuated. And while this has been done, newer and better methods of culture and handling have been found, the absolute necessity for cover crops and lime demonstrated, the productiveness of the vineyards increased and much other good accomplished. The ten years between 1902 and 1912 will be known in local history as the war for independence from insect ruin, and are undoubtedly the turning point in a great industry.

Buy Good Sires.

It has been demonstrated that the cheapest investment that can be made by a farmer who is trying to build up the standard of a herd of cattle lies in the purchase of a good pure-bred bull. It is not necessary to buy several high-priced females as a basis for the average herd, nor is it economical The most economical results can be obtained by buying a bull with masculinity enough behind his good breeding to stamp his likeness upon calves.

A striking proof of this has been shown on the cattle show circuit at state fairs this fall. Recently, a prominent state fair judge had to choose between two cows with the same dam, but sired by different bulls, for the female championship of the breed. So strikingly similar in type was each to its sire, though the dam was the same, that there was no trouble in distinguishing between the two. The one produced by the more outstanding sire was so superior to the one produced by the less superior bull that there was no trouble about the selection.

The principle illustrated is of practical value to the farmers who are thinking of beginning a herd with limited capital, or have a common herd to grade up. An average group of calves will be far superior to their commonly bred mothers, if a good, purebred bull is used. Such a bull can be purchased very reasonably, if proper care is taken by the purchaser.

Minnesota. RAY P. SPEER.

Dynamite for Orchard Work.

An orchardist asks: "Is it advisable to use dynamite in preparing the soil for orchard setting?"

"It is our experience that in many localities this probably will be a profitable treatment," says Professor Dickens of the horticultural department of the Kansas Agricultural College. "In most cases, the work should be done one or more seasons before the trees are to be planted, and in any case, the pocket formed by the explosion should be thoroughly dug out and refilled with surface soil. In tight, close soils, it is possible that if this pocket be filled with sand or loamy soil, some of this soil may filter into the cracks formed by the explosion and give a chance for the roots to penetrate the deeper soil. In some soils, the advantage of dynamiting seems to be due to the improved drainage secured."

Give Reasons for the Placings.

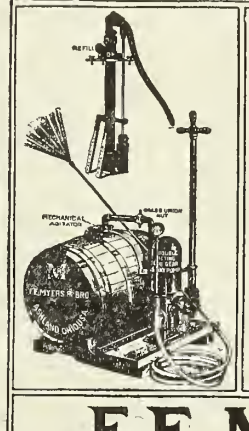
After placing the ribbons, the judge should explain to all interested parties his reasons for placing the awards. Every exhibitor should feel free to ask questions and to find out what points the judge considers in making the awards.

To Insure Livestock.

The Union Stock Yards at Chicago has instituted the plan of charging ten cents a car load of stock to provide fire insurance. This sum is turned over as a premium to a large eastern insurance company, which becomes liable to owners for loss or damage by fire to cattle, hogs, sheep and goats, while in the yards. Horses are not insured.

Subscription expired? Renew today.

IT PAYS TO SPRAY WITH A MYERS SPRAYING OUTFIT



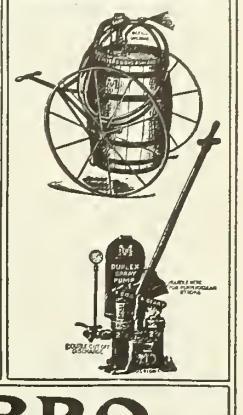
A Myers Spray Pump is an investment that pays and pays well. It does not mean outlay. It means income. It means a more marketable fruit or vegetable crop—one that not only sells more readily but commands a better market price—that shows a greater profit to the grower.

The vast difference in the salability of unsprayed and Myers-Sprayed fruit has caused many orchardists and farmers in this and foreign countries to make the statement, "It pays to spray with a Myers Spraying Outfit."

Myers Spray Pumps are the result of years of experience and experiment. They have been developed with spraying itself, in line with spraying needs, and have withstood the tests made of them for service and reliability. The Myers line includes a pump for every need.

Myers Spray Nozzles and Accessories are complete in every particular and can be relied upon to do the work expected of them. Our Spray Pump Catalogue tells all about them, illustrates and describes the few pumps shown here and the many other styles and sizes of Knapsack, Bucket, Barrel and Power Spray Pumps we manufacture. It also gives valuable spraying information, including a spray calendar, spraying solutions, etc.

Write to us for it or ask your dealer.



F. E. MYERS & BRO.

ASHLAND PUMP & HAY TOOL WORKS

160 ORANGE STREET. ASHLAND, OHIO.

BRANCH DISTRIBUTING HOUSES

ALBANY - CEDAR RAPIDS - HARRISBURG - MILWAUKEE - ST. LOUIS

Pruners and Shears

BASTIANS'

Awarded First Prize, 1912

CALIFORNIA STATE FAIR

CALIFORNIA APPLE SHOW OREGON STATE FAIR

In a working test with other tools, they have proven their superiority

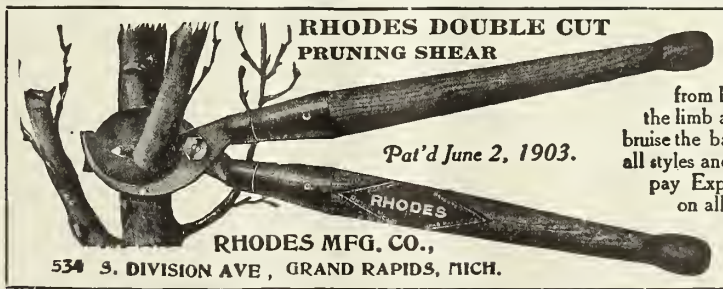
BASTIAN TREE SHEAR—The new and perfect tool for light work. With them it is practical to trim all small trees while the operator stands on the ground, thus enabling him to round up the trees to better advantage.

BASTIAN PRUNING HOOKS—Cut to their full capacity, regardless of the toughness of the wood, thus doing away with time wasted in sawing.

Shear and Pruner Blades made from Sheffield Tool Steel. Every blade guaranteed against defects. Power, Ease, Speed and Durability the main features of Bastian Tools.

Ask your dealer for them. Manufactured by

STOREY MANUFACTURING CO., PORTLAND, ORE.



THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

RHODES MFG. CO.,

534 S. DIVISION AVE, GRAND RAPIDS, MICH.

7 Per Cent

Your Idle Money will be amply secured, if invested in our First Mortgage GOLD BONDS BEARING 7 PER CENT INTEREST, payable semi-annually. Particulars furnished to bona fide investors upon application to

THE FRUIT-GROWER AND FARMER

St. Joseph, Missouri

Questions and Answers

A department conducted to aid our readers in solving their problems. All inquiries are answered by experts. You meet with many problems in your daily farm work which you would like to have information upon. Write to this department. The Editors will secure the information you desire, and the service is free. Ask questions.

Crude Oil for Rabbits.

Question: I am informed that in some sections of Kansas, apple trees are painted with crude oil to destroy insects and protect from rabbits. Can you give me any information on the subject? I am afraid to try it without further evidence. Can you recommend any cheap preparation to apply with a brush or spray pump to keep off rabbits?—C. N., Missouri.

Answer: Do not use crude oil, axle grease, lard or any other oily material on your trees to protect from rabbits. All greasy substances result in more or less damage according to the amount applied and the condition of the bark. Very small quantities on trees with thick bark would not likely cause any damage, but if a greasy substance is painted on the tender bark of a young tree it is sure to result seriously. It does this by shutting off the transpiration from the bark, smothering the tree in other words, and by actually soaking into the bark and destroying its normal function.

The most satisfactory way of protecting trees from injury by rabbits is with the wooden veneer or coiled wire wrappers which are frequently advertised in this journal, or by wrapping the trunks with paper, corn stalks or other material. Very satisfactory wrappers can be made from galvanized wire screen having a mesh of about half an inch. Get this from your hardware man in suitable widths, and with tin snips, cut into a size suitable for your trees. Such wrappers are more expensive than the veneer, but they have the advantage of lasting longer.

A commercial preparation, known as Otwell's winter tree paint, made by the Minnesota Linseed Oil Paint Co., Minneapolis, Minn., is recommended for protecting trees from damage by rabbits and mice. It comes in powder form and is to be mixed with water and applied like whitewash. We have had no personal experience with this material, but it is well spoken of.

Should Raspberries be Fall Pruned?

Question: Would you be so kind as to tell me if it would be any injury to raspberry plants to trim them this fall, to prevent them from taking hold of the ground? The tips often reach right into the hill and it is not an easy matter to get it out. Some say to leave them until spring to prevent winter killing.—W. W., Illinois.

Answer: There is a great advantage in delaying the pruning of raspberries until the following spring. It not only avoids one possibility of winter injury, but it enables the grower to remove the winter injured parts when doing the pruning. In localities where the winters are long and severe there is more or less injury to berry bushes due to low temperatures and to the drying out of the canes. In fact, a great many cases of the so called "winter killing" is due wholly to the branches becoming too dry during long cold spells when the sap flow is very slight if any at all. Evaporation goes on continually from all branches, no matter whether frozen or not. Most fruit growers are familiar with the shriveled bark on trees and shrubs during long periods of cold weather. Berries can withstand only a small amount of this shriveling or drying out, and when that stage is reached, if the flow of sap does not replace the evaporated moisture, the twig dies, and we call it winter killing.

Now, when plants are pruned in the fall the cut ends of the branch afford better opportunity for the escape of the moisture within the twig, so that drying takes place more rapidly. In cold weather, then, when sap flow is lessened, the twigs may become too dry on fall pruned bushes, and consequently die. On this account it is advisable, in localities where the winters are long and cold, to delay the pruning of tender shrubs until spring. Then some of the twigs which have died during the winter can also be removed.

One of the most satisfactory ways of preventing the tips of raspberries from taking root, is to do some of the pruning in late summer, say in August or September. At that time go through the plantation and cut off the long canes which are inclined to "tip." Late summer pruning will retard the growth of these branches, and before new shoots can be formed, growth will be stopped by cold weather. In fact, by disturbing the branches by late cultivation, keeping the tips moved about so that they cannot strike root, will serve the purpose you desire.

Wants Quick Method for Vinegar.

Question: Will you please tell me how to make vinegar the quickest and best way? I have an orchard and lots of small apples, so please tell me how. I have 250 gallons of pure cider, but not vinegar. What shall I do to hurry it up and get it sold before bad weather? Also how shall I clarify it? Some of it is dingy looking. Also can you tell me where I can find a market for it? I have a No. 2 Buckeye cider mill, hand power. It is too slow. I want a bigger one, one that will grind faster and press much quicker and get more cider per bushel. I only get about two gallons with this mill. What is the best alfalfa book?—Mrs. S. M. O., Arkansas.

Answer: Vinegar cannot be made quickly unless one is provided with special equipment in the way of generators. Where vinegar is made without the aid of a generator, it takes approximately a year for the juice to develop the right degree of acidity for market purposes.

In the September and October issues of this paper you will find articles dealing with the making of vinegar, and from these articles you will get more detailed instructions than can be given in this space.

I am inclined to believe, without seeing a sample of your apple juice, that the dinginess you speak of is due to the yeast which is developing in it in the first stage of fermentation. It can be temporarily cleared by careful filtering, or by scalding, although the yeast will again appear unless the juice is sterilized and kept under sterile conditions.

In your vicinity there are a number of dealers to whom you could undoubtedly sell your apple juice, or who could put you in touch with a market. To dispose of the juice in this way will be the quickest method of getting returns in case you do not care to wait until it becomes vinegar in its usual, slow way.

When it comes to pressing the juice from the apples, it is far more economical to use a power press. These are obtainable from advertisers in these columns, in various sizes, and with a power press a greater extraction of juice is possible than with hand presses. Even in hand presses, it is possible to get more juice per bushel, where the crushed fruit is made into a "cheese," such as is done in the power presses, than can possibly be obtained with the little cribs that usually accompany hand presses. Make a few little racks out of laths to fit your hand press, and try this method. You will get a great deal more juice from each bushel of apples.

The best book on alfalfa growing is Coburn's "Book of Alfalfa." This book can be supplied through this office for $2.00.

Tree Planting Wire.

Question: Last fall I read an article in The Fruit-Grower about planting apple trees, describing some tree planting wires, which had the distance marked by small clamps of tin or sheet iron. They were fastened on the wires by a small bolt or screw, and as the wire was used, it stretched, then the clamps were loosened and moved again to the proper distance.

We planted an orchard last spring and had the wire painted. It stretched and we got the trees out of line. I would like to know where we could get some clamps, as I have described, or something of that order to fasten the wires securely.—H. S. B., Pennsylvania.

Answer: Little bolts for fastening a marker on your tree planting wire can undoubtedly be obtained from your hardware man. These are ordinary little stove bolts, measuring about one-fourth or five-eighths inches in length. In case you cannot get them from your hardware man, or in case he cannot get bolts of this nature for you, we are certain that you can secure them from any mail order hardware house, advertising in this journal.

In writing to them, we shall appreciate it very much if you will kindly mention the name of The Fruit-Grower. If you are not able to secure bolts of this character, we will be glad if you will write us again.

The wire you intend to use is exactly right for that purpose. You will find that this wire will stretch so very little, even in long lengths, that the difference is not noticeable. The only difficulty you will experience is that it is somewhat too stiff to use in long lengths.

Rather than use wire of this character, with markers such as you mention, we believe you would find greater satisfaction in cutting this wire into links the length of the distance between the trees. This would necessitate cutting the wire one foot longer than the link is to be, and bending six inches at each end over and twisting around wire, and in that manner it will not slip, yet give you a marker that will be more easily handled, I believe, than straight wire with the little markers on it.

Wants Apple Evaporator.

Question: Can you tell me where I can get a good evaporator? I have a lot of apples to dry. Have about 30,000 boxes, and think all the wormy ones would go in one box.—G. P. B., Colorado.

Answer: Evaporators are not obtainable on the market from any one firm. They must be made at home, and such equipment as needed, purchased from each of several firms. Farmers Bulletin, No. 291, entitled, "Evaporation of Apples," will give you complete information about

Buy Nursery Stock That Is Advertised

ONE purpose of all advertising is to establish confidence on the part of the prospective buyer in the article advertised. Unless one can have confidence, there is little likelihood of business relations being established.

This being true, it naturally follows that no firm can make a permanent success of advertising unless it makes good with its customers. "The best way to make friends is to make good" is especially true with advertising. Unless a firm can deliver the goods it advertises, money spent in buying advertising space is wasted.

All this is to lead up to a few remarks on buying nursery stock that is advertised. It is generally pretty safe to say that a firm which advertises stock over its own name believes its goods are as represented. A firm which does not stand back of its stock is at least open to suspicion.

At this season the nursery agent, or tree dealer, is abroad in the land. One kind of agent sells stock which is not guaranteed by any firm. His order blanks do not contain the name of the nursery growing the stock, nor does he leave any literature which gives one any clew to the place of its origin.

We believe it a pretty safe rule to let such individuals alone. Whether one buys nursery stock direct from the nursery or through a salesman, we believe it is the safest plan to buy advertised stock, for this shows that the firm which grew the stock is not ashamed of it. If the stock isn't worth advertising over the name of the firm which grew it, we would let it alone. Let the nursery firm first have confidence in its own stock, and then advertise it to create confidence on the part of others.

Because of the reluctance of some nursery firms to advertise and stand back of their stock, there is a growing disposition not to buy their stock offered by salesmen. In a recent issue of The Market Growers' Journal a correspondent has the following to say on this subject, and we believe most readers of The Fruit-Grower and Farmer will agree with his position, as a general rule:

"I notice that the tree agents are abroad in the land. I never buy trees from a traveling agent, even when he represents a reliable nursery, for even then he must charge higher prices than the nursery would charge direct, since his traveling expenses must be paid and his delivery costs, too. In buying fruit trees or small fruit plants it is always best to deal directly with the nurseryman.

"A number of years ago I was about to plant a lot of ornamental trees and shrubbery at the North Carolina college. There was a local agent who wanted me to let him have the order. I told him that I was acquainted with the various nurseries and knew just where I could get the trees at the best rates. But he insisted so strongly that I told him I would give him a list of what I wanted and he could have it priced, and I would send the same list to a nurseryman from whom I intended to buy, and would have him price the list. He agreed to this and in a short time brought in his list. I showed him mine, showing that I could get the stock for about one-half what he asked for the goods. That settled this agent."

The moral is plain: Study the advertising columns of The Fruit-Grower and Farmer and buy from the firms represented there. These firms have a fixed place of business, their standing has been investigated, and you can generally get first-class stock for less money from them than when buying from the itinerant tree dealer.

And note this: In buying from firms which advertise in The Fruit-Grower and Farmer, be sure to say you do so at our suggestion; mention our name when you write. You will get the very best of treatment if this is done.

YOU LIKE TO HUNT AND FISH

You like to go CAMPING Then surely you will enjoy **The National Sportsman** magazine, with its 160 richly illustrated pages, full to overflowing with interesting stories and valuable information about guns, fishing tackle, camp outfits—the best places to go for fish and game, and a thousand and one valuable "How to" hints for sportsmen. **The National Sportsman** is just like a big camp fire in the woods where thousands of good fellows gather once a month and spin stirring yarns about their experiences with rod, dog, rifle and gun. Think of it—twelve round trips to the woods for a $1.00 bill.

Special Trial Offer

Just to show you what it's like, we will send you **The National Sportsman** magazine for 3 months and your choice of a handsome **National Sportsman Brotherhood** emblem in the form of a Lapel Button, a Scarf Pin, or a Watch Fob, as here shown, on receipt of 25c in stamps or coin.

Don't delay—join our great big Hunting, Fishing, Camping, Nature-loving **NATIONAL SPORTSMAN BROTHERHOOD** today.

NATIONAL SPORTSMAN MAGAZINE
69 Federal Street BOSTON, MASS.

In writing please mention The Fruit-Grower and Farmer

BLACK LOCUST, CATALPA

Speciosa, Box Elder, Sycamore, Ash, Elm, Red Bud, Sweet Gum, Mulberry, Walnuts, Maples, Poplars, California Privet, Deutzia, Spirea. Trees, Shrubs, Seeds, etc., at lowest prices.

Send for wholesale list.

FOREST NURSERY COMPANY

McMinnville Tennessee

PATENTS THAT PROTECT AND PAY

Send Sketch or Model for Search.

Books, Advice and Searches FREE

WATSON E. COLEMAN,

Patent Lawyer. Washington, D. C.

RHEUMATISM

Let Me Send You My New External Invention That is Relieving Thousands TO TRY FREE

Send No Money—Just Coupon

Don't derange your system with drugs when I promise you quick relief with my simple **Magic Foot Drafts**, so certain in their action that I send them **TO TRY FREE.** Sign and mail my coupon today. Return post will bring you a regular Dollar pair of **Magic Foot Drafts**, the great Michigan remedy for every kind of Rheumatism—chronic or acute, **muscular, inflammatory, sciatic, lumbago, gout,** etc., no matter where the pain or how severe. When you get them and try them, then if you are fully satisfied with the benefit received, you can send me One Dollar. If not, keep your money. **I take your word.** You can see that I couldn't make such an offer if my Drafts didn't give quick and lasting results.

Fred'k Dyer, Cor. Secy.

If you could see the thousands of letters I get saying my Drafts have cured after everything else failed—cured even after 30 and 40 years of suffering, as well as all the milder stages of this cruel disease, you would not question my strongest claims. You would send at once to get the same relief and comfort so many others got. Remember, the risk of loss is all mine—you pay only when satisfied. Can anybody make a really fairer offer? Don't delay, but send my coupon at once—now.

This $1 Coupon FREE

Good for a regular $1.00 pair of Magic Foot Drafts to be sent Free to try (as explained above) to

Name.....

Address.....

.....

Mail this coupon to Magic Foot Draft Company, 1232 F, Oliver Bldg., Jackson, Mich.

how to construct a large or small evaporator, and how such a plant is operated. This bulletin may be obtained free from the Secretary of Agriculture, Washington, D. C.

For the various kinds of equipment needed for an evaporator, you can secure from J. W. Hallauer & Sons Company, Webster, New York. Paring machines can be obtained from the Boutell Mfg. Co., 558 Lyell Ave., Rochester, New York, and from Coons Mfg. Company, 60-61 Reynolds Arcade, Rochester, New York. Evaporator furnaces can be obtained from the Munnsville Plow Company, Munnsville, New York, from D. W. Seely, Sodus Point, New York. Kiln slats can be obtained from A. N. Martin & Bro., Webster, New York, or from the Munnsville Plow Company. E. J. Henner Company, Webster, New York, are advertising what they call an air blast system of evaporation. I do not know just what this is, but if you are interested in constructing an evaporator, it might be worth while corresponding with them.

Another method of drying fruit, quite different from the evaporator as ordinarily constructed, is being made by the General Dehydrator Co., 114-118 Liberty St., New York, N. Y. This equipment is well worth investigating if you are considering the erection of a fruit drying establishment. In writing to any of these firms we shall appreciate it if you will kindly say that you obtained their address from The Fruit-Grower & Farmer.

Are Top Grafted Trees Productive?

Question: I have Ben Davis trees 18 years old, and intend to top graft them to Stayman, Mammoth Black Twig, etc., and have been told that a top graft does not produce as large, or as good a quality of fruit as the trees produced under normal conditions. Is this true?—V. S., Illinois.

Answer: There has always been just about as much argument in regard to top worked trees as there has been over the whole root, piece root problem. When the matter is threshed out it results in the discovery that top grafted trees produce just as well as any other kind of trees, depending altogether on the care that is given to them. Where trees are poorly cultivated or over loaded, the apples will be inferior to those produced on trees that have been given good care. There is no evidence to confirm the statement that the fruit on top grafted trees will not be as productive and of as good quality as on other trees. You will be perfectly safe in top working your trees and expecting good returns from them when given good care in the way of pruning, thinning, cultivation and spraying.

Cedar Apple Rust.

Question: On my orchard of 1,500 apple trees, several were this year affected with a discoloration of the foliage, in which yellow patches developed, the lower surface of which was covered with little fuzzy rings, surrounding small pits. The trees were planted two years ago on newly cleared oak land. Please tell me what this disease is, and what to do for it. I sprayed with lime-sulphur.—W. C., Kentucky.

Answer by Dr. Whitten, Missouri Experiment Station: Your apple leaves were affected with what is known as apple leaf rust. This is sometimes called the cedar apple rust, inasmuch as it is one form of the same fungus which causes the cedar apple on the cedar tree. One stage of it grows on the leaves of the red cedar, forming a brownish wart-like excrescence commonly known as the cedar apple. This cedar apple may be from one-fourth up to one and one-half inches in diameter. Upon approach of warm weather in spring the cedar apple pushes out spore masses in a jelly-like fluid. These spores dry and are carried by winds or otherwise to the apple trees, wild haws, wild crabs, or other closely related species. These spores of the cedar apple can not again grow immediately from the red cedar, but only from the apple or some closely related species. On the apple leaves the spores germinate, penetrate and cause the spots of rust you observed on the leaves. These rust spots on the apple leaves ripen spores which can not again grow from the apple tree, but are taken back again to the red cedar, where they produce in turn the cedar apple, thus completing the two-fold life history of the fungus. This knowledge of the life history of the fungus has given us the only successful clue to the control of the leaf rust on the apple.

The most important stage in preventing this leaf rust of the apple is to see that no cedar apples mature to spread spores from the cedar trees. It is safest to destroy any cedar trees adjacent to the orchard if this can be done without destroying valuable cedar trees for posts or timber. Since the rust spores are spread by the wind or carried by birds or insects, the apple rust may occur, even though cedar trees do not grow closely adjacent to the orchard. In case the cedar trees are too valuable to be cut out, then care should be taken to prune off all of the cedar apples in winter.

The apple leaf rust may be partially controlled by spraying with either bordeaux mixture or lime-sulphur. The same spraying recommended for apple scab will help to control this leaf rust. Spraying, however, does not entirely control the leaf rust to the degree that it does apple scab or many other fungous diseases.

How to Propagate Blackberries.

Question: About three years ago I bought a dozen blackberry plants of three or four varieties. All died but one, and for some time I paid but little attention to it, but being in the garden and near the fence, it began to spread, throwing long vines something like a dewberry. This last season we gave it good care and fertilization, and this year it was pretty well loaded with large, fine berries. Now, what I want to know is your plain, simple advice about how to propagate this berry, and how to handle it, as I want to put in all I can get from last summer's growth.—W. T. B., Arkansas.

Answer: Blackberries and closely related plants are of the easiest propagation. It can be done by taking the suckers which come up around the parent plant; or by root cuttings; or if the tips of the canes take root, they form new plants, ideal for transplanting. Rooted tips can be obtained from dewberries and black raspberries. Blackberries and red raspberries do not root at the tips of the branches where they touch the ground, but they make great numbers of suckers, especially if the roots have been broken during cultivation.

In general, suckers have few fibrous roots, and on that account are inferior to rooted tips or to plants obtained from root cuttings.

The best blackberry plants are obtained from root cuttings. Roots which are from one-fourth to three-eighths inch in diameter are the most satisfactory for this purpose. Dig the roots in the fall and cut them into pieces an inch or so in length and store them until spring. The purpose of this is to allow the cuttings time to "callus," or to form a sort of healing tissue over the cut ends. The best way to store them is in a box of sand buried in the soil out doors where it will not freeze solid, or in a cool cellar. In the course of a few weeks, the cuttings will be well callused, and may then be planted.

The planting may be done in the open soil of the field in early spring, or what is much better, plant them in a mild hotbed, where they may have a little bottom heat. Plant the cuttings only an inch deep and cover with loose, rich soil, laying the roots horizontally. Some varieties of blackberries do not strike root quickly without bottom heat, and when a variety is scarce, shorter and slenderer pieces of roots may be used, and these demand bottom heat for best results. Hotbed started cuttings make bigger plants than roots which are planted directly in the field.

In your locality, where spring comes early, you will undoubtedly get excellent results from root cuttings planted in the field early in the spring, as you have a long growing season. Give the little plants lots of good care during their first summer and they should make a splendid growth, and by fall be ready for setting in their permanent place in the berry plantation. From a single blackberry plant you should be able to obtain a great many excellent root cuttings, and in one season's time secure a large plantation from that particular variety. If your plant is of the dewberry type, and has taken root at the tips of the branches, you will be able to get some nice well rooted plants from these tips, in addition to the plants obtained from the root cuttings.

The Hydraulic Ram.

Question: I want to put in a hydraulic ram, to run water from spring to house. The spring runs from one and one-half to five gallons per minute and I have fifty feet from spring to ram and can get six or six and one-half feet fall from the spring to the ram. The house is 960 feet from the ram and 120 feet above it. I would like to have from 50 to 100 gallons of water in 24 hours. If you know of any ram that will be satisfactory, let me know.—W. H. S., Virginia.

Answer by W. C. Davidson: There are several hydraulic ram companies who manufacture small hydraulic rams for springs which have a capacity of from one-half to two gallons of water per minute; in fact, I believe that practically all of the hydraulic ram companies are putting out a ram of small capacity which would answer the need in the foregoing case.

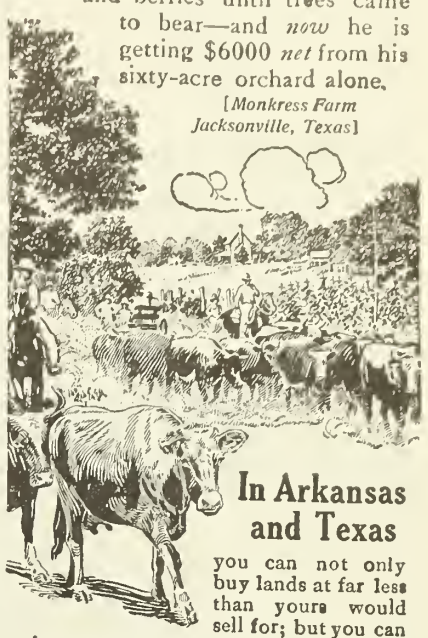
I note that in the above inquiry, the writer states that the flow of the spring is from one and one-half to five gallons per minute. I would recommend a small ram adjusted to the minimum flow of the spring. If a ram having a minimum capacity of say two gallons of water per minute were installed and the supply of the spring were to fall to one and one-half gallons per minute, the probabilities are that the ram would stop with the dash valve open, allowing the water to run to waste. This is caused by reason of the fact that there is not sufficient force in the quantity of water contained in the drive pipe to force the dash valve shut. In installing a hydraulic ram the mistake should never be made of getting one of too large a capacity. With a fall of six and one-half feet from the spring to the ram and with a supply of one and one-half gallons per minute and pumping against a head of 120 feet, I estimate roughly that 72 gallons of water could be obtained at the storage tank every 24 hours. If the flow were two gallons per minute, other conditions being equal, the quantity of water pumped would be approximately 98 gallons every 24 hours. It is my opinion that the correspondent will be able to secure a hydraulic ram that will give him the desired 50 to 100 gallons every 24 hours without any difficulty.

The drive pipe for an installation of this kind should be approximately 50 feet

Land cost him $600 $6000 profit now!

Mr. Hall, a former Michigan man, bought 100 acres of land in East Texas, at $10 per acre, a few years ago; planted 60 acres to peach trees; made a good living from melons and berries until trees came to bear—and *now* he is getting $6000 *net* from his sixty-acre orchard alone.

[*Monkress Farm Jacksonville, Texas*]



In Arkansas and Texas

you can not only buy lands at far less than yours would sell for; but you can raise more crops with the same effort and at less expense; because the rich fertility of these lands is practically untouched, and the milder climate cuts winter expenses *'way down.*

As Frank Federer says, who came here from Rhineland, Wis.: "I can raise here on $15 land as much as I could in Wisconsin on $200 land." S. N. Jackson of Piggott, Ark., declared that "This is better fruit country than in Tennessee; our orchard crops bring more money here, and there is a better market for what we raise." Jackson only paid $700 for his place. These lands along the

Cotton Belt Route

won't stay cheap very much longer. They have already doubled in value since 1905; but even this year you can buy at $12 to $25 per acre, as good land there as you are farming now. And you'd have *every* advantage of schools, churches, close neighbors, good local markets, phones, rural free delivery, etc. This proposition deserves serious thought

On the 1st and 3rd Tuesdays of each month there are low round trip excursions to Arkansas and Texas via Cotton Belt Route, allowing 25 days' time and free stopovers. Go on the *next* one.

A farmer wrote our free books

He knows farming from A to Z. He traveled over thousands of miles in these sections to learn where the *real* farm opportunities were—the kind he knew *you* would grasp if you saw them. He tells you, in plain words, all about them. 100 pages and farm pictures. Send a postal today for your free copies.

E. W. LaBEAUME,
General Passenger Agent
1450 Pierce Bldg., St. Louis

COTTON BELT ROUTE

CHOICE VIRGINIA FARMS ALONG CHES. & OHIO RY.

At $15 an acre and up raise 60 bushels of corn and 3 tons alfalfa per acre. Abundant rainfall (4 inches per month,) rich soil, mild winters, good churches, schools and neighbors, close Eastern Markets. 20 adjoining little farms in sight of Richmond, only $850 each. Very fertile. Write to-day for booklet **"Country Life in Virginia"** (134 pages) and low excursion rates.

Address.
R. T. Crawley, Indus. Agt. C. & O. Ry.
Room 1036 Richmond, Va.

C&O LINES

60 BUSHELS PER ACRE

In writing please mention The Fruit-Grower and Farmer.

WANTED

a man or woman all or spare time, to secure information for us. Work at home or travel. Experience not necessary. Nothing to sell. GOOD PAY. Send stamp for particulars. Address **M. S. I. A., 511 L. Building, Indianapolis, Ind.**

PAPER DIRT BANDS

are the best thing ever offered for starting early vegetables. 500 three-inch, Prepaid, by Parcel Post, East of Miss., $1.00; on Pacific coast, $1.25.

P. B. CROSBY & SON, BALTIMORE, MARYLAND

APPLE TREES

APPLE SEEDLINGS

STRAIGHT AND BRANCHED

APPLE GRAFTS, whole and piece root, made to order. SHADE AND ORNAMENTAL TREES — Seedlings: Catalpa, Speciosa Osage Orange, Soft Maple, Mulberry, Elm. Write for prices.

YOUNGERS & COMPANY
GENEVA, NEBRASKA.

In writing please mention The Fruit-Grower and Farmer.

In Actual Touch With the Fruit Industry

"Better Fruit"

Published at Hood River, Oregon

Devoted entirely to fruit growing and marketing. Send for sample copy. Subscription $1.00 per year.

E. H. SHEPARD
Editor and Publisher

In writing please mention The Fruit-Grower and Farmer.

RIGHT NOW
is the Time to Send for Our Price List on
FRUIT TREES
Varieties True—No Disease—We Pay the Freight
For Price List Address
NEW HAVEN NURSERIES
Box 125 New Haven, Mo.

NURSERYMEN'S Fruit and Ornamental Plates and Plate Books for Canvassing

Hand Painted—Lithographed—Colored Photographs. *Send for Catalog and Prices*

M. BRUNSWICK & CO., Rochester, N. Y.

High Ground Nursery Stock

is the best to plant. You do not go to low land for seed corn, why go there for trees? Reference: Bradstreet's or Dun's. Address "Desk A" for catalog.

HARRISON NURSERY CO., Inc.
York, Nebraska

BERRY BOXES
CRATES, BUSHEL BOXES AND CLIMAX BASKETS
AS YOU LIKE THEM

We manufacture the EWALD PATENT FOLDING BERRY BOXES of wood veneer, that give satisfaction. Berry Box and Crate Material in the K. D. in carload lots, our specialty. A liberal discount on early orders. A postal brings our price list.

CUMBERLAND FRUIT PACKAGE COMPANY
Cumberland, Wisconsin.

In writing please mention The Fruit-Grower and Farmer.

Gooseberries

We grow the Oregon Champion, which has proven the most profitable variety wherever tried, in large quantities for the trade; and have a considerable surplus of Currants and Apple. Also a general line of Nursery Stock and Nursery Supplies.

PORTLAND WHOLESALE NURSERY CO.
122½ Grand Avenue. Portland, Oregon

When writing to advertisers, mention The Fruit-Grower

For Sale 5,000 Three-Gallon Hamilton
Smudge Pots
Good as new. Used only one season.
KEITH-SIMMONS & CO.
Nashville Tennessee

in length, and should have a diameter of three-fourths inch. The delivery pipe, according to the foregoing figures, should be 960 feet long, and its diameter should be, say one-half inch. A ram of this kind would probably cost in the neighborhood of $15.00.

Remedy for Pear Blight.

Question: Can you tell me any cure or remedy for the blight of apple and pear trees?—H. E. P., Illinois.

Answer: Pruning is the only known remedy for this disease. Do the pruning at any time of the year. Make the cuts several inches below the lowest sign of the disease, and sterilize the pruning tool each time with a solution of corrosive sublimate. Blight is a bacterial disease and works within the wood of the tree. It is beyond the reach of spray chemicals, and there is no way of reaching it with antiseptics.

Protecting Bushes.

Question: How may I protect tender varieties of grapes, ornamental shrubs, raspberries, blackberries, etc., so that they will not winter kill? My Early Harvest blackberries are so badly damaged almost every winter that they produce little or no fruit. Is there any way they can be protected so that they will not die back in winter?—B. M. T., Missouri.

Answer: The best way to protect bushes against winter killing is to bend them down to the ground and cover with soil. Fasten the canes down with pegs and put a few inches of soil over them. Do not lift them until the danger from the severe winter weather is over. Some growers remove a few spadefuls of soil on one side of the bushes, pushing the canes over with a fork and weighting down the branches with a few shovels of soil. Where it is necessary to cover blackberries each year, the work is more easily done if the berries are grown in hills or in a narrow hedge row. Where it is necessary to cover grapes, start the canes low, so that they can be loosened from the trellis and laid down without any digging. Covering shrubs in this way is a very satisfactory method of protecting them from the severe freezing weather of winter.

Fall Planting for Peaches.

Question: Does it pay to plant peach trees in the fall? If so, what treatment should the land and the trees have, both before and after planting? The soil is a clay loam, rocky, and has been in corn and grass for several years.—A. B. C., Arkansas.

Answer: In your locality, where the winters are open and mild, fall planting is more successful than spring planting. With you, the trees can make considerable root growth during the winter months, and be in condition to begin their growth as soon as spring opens. There is a great deal of growth made by the roots of fall set trees, where the winters are mild, even though there are no visible changes in the tops. Not only peaches, but apples can be planted in the fall in your state, and such trees are better than those which are not planted until spring. In sections, however, where the weather is cold and the ground frozen hard all winter, fall planted trees do not do well and frequently die before spring. This is due to the evaporation of the moisture in the branches and the inability of the roots to supply this moisture from the frozen ground.

If the fertility of the land on which you will plant your peach trees has been much depleted by cultivation, you will get better satisfaction if you will manure it well before the trees are planted, turning the manure under. Plow all the land before the trees are set, as it will be the last chance to turn all of the soil, and plow it deeply.

It would really be better to grow a crop of cowpeas on the orchard site, and turn it all under before setting out the trees. This crop will add nitrogen and humus to the soil. The nitrogen will be needed to enable the little trees to make a good growth, and the humus will help liberate the plant food of the soil as well as make it more spongy. If corn is planted between the trees, follow it with cowpeas to be turned under. The liberal use of this crop will materially increase the fertility of the soil and produce better growth in your trees. Don't neglect frequent cultivation in summer to overcome the serious effect the summer drought will have. The summer dry spell which frequently prevails in your section is hard on young trees.

Puny Growth in Peach Trees.

Question: I have a nice little peach orchard, six years old. The trees have been given good cultivation and pruning and are considered as very thrifty. This fall I noticed in several of them a thin, puny, bushy growth. Is this yellows, or what is it?—H. J. L., Indiana.

Answer: It is probable that the condition you describe is yellows. It would be best to send some specimens of the branches to your state experiment station for examination. They will gladly tell you what the trouble is and what to do for it.

Shallow Rooted Trees.

Question: What causes some of my fruit trees to blow over easily in a storm? The roots appear to be healthy, but run just under the surface and straight out from the tree. They are Ben Davis, about nine years old, and the branches start out about eighteen inches above the ground. The soil is a heavy clay loam, very rich and the trees have large tops and have just produced their first crop, although it was not very large.—P. O. N., Illinois.

Answer: From your statement that the roots appear to be healthy and run close to the surface it would seem to me that the difficulty comes from the soil being too shallow and too wet. If such is the case, there are two courses open to relieve this condition, but either of them will take time. The first would be drainage of your orchard, and the second, root pruning, combined with loosening up the sub-soil. Where trees are growing on shallow soil, the roots will run close to the surface. By sub-soiling, or exploding a small charge of dynamite below the tree, not enough to blow the tree out of the ground, but enough to make it jump a little, will open the soil and induce deeper rooting. Plowing deeply, or digging a trench around the tree and cutting off the roots, will make some of the roots reach deeper. Then if the sub-soil has been opened so that there are crevices through which they may penetrate to greater depths, they can obtain a better anchorage and be less liable to blow over. It might be well also, to summer prune your trees rather heavily for a few years, reducing the size of the head so that it will have less surface exposed to the wind. This summer pruning will also have a tendency to bring the trees into greater fruitfulness, although this effect will not be noticeable if the roots are heavily pruned.

Pruning Sweet Cherry Trees.

Question: I have a small orchard of Bing and Lambert cherry trees that are four years old. They have not been pruned since they were planted and are growing very tall and straight. How should I prune them, or should I let them alone? Some of my neighbors tell me the sweet cherry should not be pruned.—G. H. T., Washington.

Answer: In your locality it is not considered best to prune sweet cherries during the dormant period because it promotes too much wood growth. This is particularly the case when the cherries have come into bearing, which yours probably have. If your trees have not been pruned since they were planted it is probable that the centers are filled with several parallel limbs, and side branches are lacking. Now, one of the difficulties with the sweet cherry is the danger of gummosis, and this disease seems to be stimulated by pruning the tree to heavily, and this is one of the reasons put forth so frequently for not pruning sweet cherries.

It is the natural tendency for sweet cherries to grow straight up in the air, but you can make your trees spread out a great deal by judicious pruning. On trees the age of yours it is probably best to delay pruning until summer. Then leave the center limbs from twelve to eighteen inches longer than the outside branches, cutting off about eighteen inches, more or less, from all the leaders, depending on their length. On the central limbs, make the cuts so that the upper bud points in the direction from which your prevailing wind comes. On all other limbs cut so that the upper bud points outward. New growth will come from the end buds more quickly than from those lower down, and by leaving the end buds pointing in certain directions, it is possible to direct the new limbs outward. The heads on very upright trees can be widened out greatly in the course of a few seasons, by pruning so that the upper buds point outward.

On sweet cherry trees the age of yours, the pruning should never be very heavy, and when it is done, do it in the summer as soon as the crop is off. This will have a tendency to retard the growth of the tree. It will interrupt the flow of sap to those limbs which are growing most vigorously, and cause it to be turned in other directions. But in any event, don't prune your cherry trees as heavily as you do your apples.

SEE HIM FIRST!

Before the fertilizer salesman arrives, go to your dealer and explain to him that you will not buy 2 per cent. goods that contain only 40 pounds of Potash per ton. Show him that modern, profitable fertilizers contain from 5 to **10 per cent. Potash,** and that the composition of crops and the effect of crops on soils require that the per cent. of Potash should be increased until it is as great as, or greater than, the per cent. of Phosphoric Acid in the fertilizer. It is this grade of goods that pays you and your dealer best. The quantity and quality of the crops are better and the actual plant food costs less per pound.

POTASH PAYS

POTASH

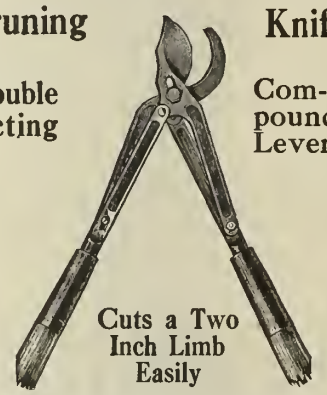
Write us for Free Book with Profitable Formulas

We will sell you Potash Salt in any quantity from 200 pounds up. Write for prices.

GERMAN KALI WORKS, Inc.
42 Broadway, New York
Monadnock Block Chicago, Ill.
Bank & Trust Bldg. Savannah, Ga.
Whitney Bank Bldg. New Orleans, La.

Orchard King
Pruning Knife

Double Acting — Compound Lever

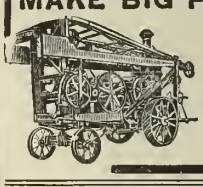


Cuts a Two Inch Limb Easily

Ask your dealer to show you the ORCHARD KING KANSAS IMPROVED HAPPY THOUGHT and DETROIT PRUNING KNIVES. If not in stock, write for descriptive circulars and prices. Investigate, as nothing will substitute to your good.

INTERNATIONAL TOOL CO.
171 Brooklyn Ave. Detroit, Mich.

MAKE BIG PAY DRILLING WATER WELLS



Our Free Drillers' Book with catalog of Keystone Drills, tells how. Many sizes; traction and portable. Easy terms. These machines make good anywhere.

Keystone Well Works
Beaver Falls, Pa.

CUT ICE

MADE IN THREE SIZES

With the Dorsch Double Row Ice Plow. We guarantee it will cut more than 20 men sawing by hand. Cakes are cut uniform, of any size and thickness. One man and a horse will cut more ice in a day than the ordinary farmer or dairyman can use. You can cut for others and make the price of our plow in two days' use. Ask for catalogue and introductory prices.

JOHN DORSCH & SONS, 258 Wells St., Milwaukee, Wis.

Don't Wear a Truss

New Rupture Cure

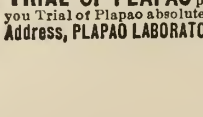
Brooks' Appliance. New discovery. Wonderful. No obnoxious springs or pads. Automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves. No lymphol. No lies. Durable, cheap. Sent on trial. Pat. Sept. 10, '01.

Catalogue Free.

C. E. BROOKS, 57C State St., Marshall, Mich.

TRUSS WEARERS

FREE attention: The PLAPAO-PADS are different from the truss, being medicine applicators made self-adhesive purposely to hold the parts securely in place. No straps, buckles or springs—cannot slip, so cannot chafe or compress against the pubic bone. Thousands have successfully treated themselves at home without hindrance from work and conquered the most obstinate cases. Soft as velvet—easy to apply—inexpensive. Awarded Gold Medal. Process of recovery is natural, so no further use for truss. We prove what we say by seeding you Trial of Plapao absolutely FREE. Write TO-DAY.



TRIAL OF PLAPAO

Address, PLAPAO LABORATORIES, Blk 220 St. Louis, Mo.

Growers Endorse Sulzer Bill

Michigan Horticultural Society Meeting in Conjunction With Apple Show

By A. Griffen

The Michigan State Horticultural Society held it 42d annual meeting in Grand Rapids November 12-14, in conjunction with the Grand River Valley Horticultural Society and the Grand Rapids Fruit Growers' Association. This meeting is usually held a month later, or in December, but the date was changed and made to conform with that of the Michigan Land and Apple show, which was held in Grand Rapids during the same week. Evening sessions were not held, giving the members opportunity to attend the apple show. The attendance was affected somewhat by the busy season, many growers being in the midst of apple harvest.

President T. A. Farrand of Eaton Rapids presided and Edward Hutchins of Fennville opened the convention with prayer. "How Best to Feed the Apple Orchard" was discussed by Luther E. Hall of Ionia, whose Northern Spy orchard of 85 acres is one of the best in the state. He sows Canada field peas in the orchard each year, turning the hogs in when peas have matured. Illinois shelled corn is spread in the orchard for the hogs. He allows five hogs to the acre. The ground is well mulched with pea straw and weeds, which is turned under in the spring, supplying humus for the trees, which are set 40 feet apart.

F. J. Overton of Bangor, who led in the discussion, has set his apple trees only 20 feet apart and practices severe heading-in, making the trees semi-dwarf. He follows the sod mulch plan. Most of the speakers who followed favored clean cultivation.

"Grape Troubles" were discussed by R. A. Smythe of Benton Harbor, the chief troubles mentioned being black rot, brown rot and powdery mildew. These diseases are controllable by spraying. Low prices that have prevailed during the past two years has given grape growing a set back in Michigan. Mr. Smythe strongly urges an honest pack and cooperation among growers in marketing their product. George Friday, of Colma, also urged a straight pack and said that cars of Michigan grapes dumped into Minneapolis and St. Paul markets this year were fit only for vinegar.

The Beginners' School.

The afternoon session Tuesday was "a school for beginners in fruit growing," with instructions on selecting the site by Prof. Eustace of the Michigan Agricultural College, preparing the land and planting by R. D. Graham of Grand Rapids, pruning and cultivating by O. K. White of the Michigan Agricultural College. Mr. White gave an object lesson in pruning. Many different points were brought out in the discussion. Henry Smith of Grand Rapids prefers to set sweet cherry trees in the fall. In regard to dynamiting holes for trees, one member said it cost him seven cents per hole, another three and one-half cents, but in the latter case only one-fourth of a pound of dynamite was used and the soil was only loosened. As to the benefits coming from dynamiting holes none could tell. Mr. White stated that many growers prefer one year old apple and sweet cherry trees, for then they can govern the distribution of the top and avoid crotches. Geo. Friday of Colma wants sod ground to start an orchard on. R. D. Graham of Grand Rapids disagreed with him. Mr. Graham has had best success in setting peach orchards on his poorest soil, thus avoiding too rapid growth and soft, weak wood.

Robert Thompson of St. Catharines, Ont., manager of the Cold Storage and Forwarding Co. of that city, gave two interesting talks during the convention on fruit culture and the benefits of cooperation among growers. Canadian growers are going into currants and gooseberries more heavily, raising them for the canneries and for shipping.

Easily the feature of the convention was the speaking contest by 15 senior students in horticulture from the Michigan Agricultural College. The speakers were limited to five minutes each and practical topics were discussed in an instructive manner. The judges were 100 in number, selected from the audience, and the cash prizes awarded were as follows: H. F. Miners, St. Joseph, 1st prize, $15; I. J. Woodin, Owosso, second, $10; L. H. Hutchins, Fennville, third, $5. In the judging and identification contest by junior and senior students which followed the speaking, for which similar cash prizes were awarded, the winners were: First, Robert Loree, East Lansing; second, F. C. Crawford, Caseville; third, C. B. Olney, Reeman; honorable mention, J. A. Petrie, Bellaire.

R. G. Phillips of Rochester, N. Y., secretary of the International Apple Shippers' association, gave a stimulating address, in which reprehensible methods of packing were scored to the limits of speech. Junk was declared to be the ruination of our markets. Poor fruit brings good fruit down to its level and the reward that comes to the honest packer is not nearly what it should be. Pack under the Sulzer bill. The Sulzer bill is the way of salvation.

Fruit Growing for Women.

Edward Hutchins of Fennville spoke briefly of the workings of the fruit growers' exchange there. "Fruit Growing from a Woman's Standpoint" was well handled by Mrs. Paul Rose of Elberta. Mr. and Mrs. Rose started in with 80 acres of wild land in Leelanau county, three miles from Lake Michigan, and the Rose orchards now cover hundreds of acres and are among the best known in the state. She stated there is no part of fruit work that a woman cannot do. Mrs. Rose oversees labor in the orchards and looks after as many as 85 packers in cherry time. To ladies thinking of engaging in fruit growing she advised care in selection of site, urging attention to nearness to market and help. Don't plant too extensively and don't buy land unseen.

Thos. S. Smith of Chicago discussed varieties of fruit from the commercial standpoint. In apples he places Spy at the top, since it will sell for the most money. Steel's red is also a great apple. He liked the Michigan Greening especially, and said it would keep a month longer than Greenings from other sections. Growers were urged to raise more Twenty-Ounce Pippins.

J. E. Merritt of Maistee, who started three years ago in clearing up 300 acres of wild land near that city, gave a talk on his work illustrated with lantern slides. He has 200 acres planted to trees. Views of other Michigan orchards and growers were also thrown on the screen.

Horace Sessions of Shelby gave some valuable points on successful peach growing. The Gold Drop has been one of the best paying peaches. Sand vetch and rye are used as cover crops. The yellows is not serious, only four trees being taken out this year. Oscar Braman of Grand Rapids led in the discussion.

Paul Rose of Elberta pointed out many problems that confront the grower and said that the slack grower, who interferes with good growers is perhaps the greatest problem. C. B. Welch of Douglas said that the marketing problem is greatest of all.

W. S. Pullen of Hillsdale and T. A. Farrand of Eaton Rapids told of many things they have learned in the leasing of apple orchards. It was agreed there is not a great amount of money in it, the chief benefit being in the object lesson taught in developing abandoned orchards into profitable property by proper pruning, spraying, and care. Profs. Patten, Pettit, White and Eustace of the Michigan Agricultural College discussed spraying problems and soils. The annual banquet of the society was held Wednesday evening, with Chas. W. Garfield of Grand Rapids as toastmaster.

The society went on record as favoring renewed efforts in behalf of the Smythe fruit bill, which passed the last legislature but was vetoed by the governor. Establishing of fruit marketing associations was recommended and the Sulzer apple law was endorsed.

For Cooperation in Purchasing.

In the future the society will probably pool its orders for sulphur, lime, lead and other supplies and fill them at the lowest prices obtainable, rather than to ask the various firms to submit bids.

The treasurer's report showed a balance on hand of $956.02.

New officers elected for the coming year are as follows: President, J. Pomeroy Munson, Grand Rapids; secretary, Chas. E. Bassett, Fennville; treasurer, Robt. A. Smythe, Benton Harbor. Four new members were chosen on the executive board as follows: F. A. Wilkin, South Haven, one year; W. F. Hawkshurst, Saline, one year; C. A. Pratt, Benton Harbor, three years; Paul Rose, Elberta, three years.

Ask your neighbors to subscribe for The Fruit-Grower and Farmer.

Don't Plant Scrubs

IF YOU WANT PROFITS

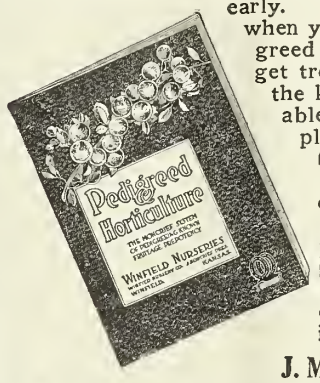
THERE is money in an orchard if you have the right kind of trees. "Scrubs" have never paid in either hogs, cattle or horses. Why should scrub trees pay? **They will not.** We have proven that pedigreed trees are quite as valuable to the fruitman as the thoroughbred animal is to the stock raiser. We have proven that pedigreed trees will produce a better quality of fruit and more of it, and that it takes less time to make an orchard. If you plant scrubs, you will have scrub fruit. If you plant pedigreed trees you have certainty and not guess work, and you save time, labor and money.

Pedigreed Yellow Transparent, Second Year, Oklahoma Orchard.

Pedigreed Trees

Produce Quality and Quantity

They come into bearing earlier. The pedigreed tree shown began bearing the next year after planting. It showed the parent quality early. We know that when you buy our pedigreed stock you will get trees not only true to name, but trees having the kind of blood in them that will make profitable trees. We grow apple, peach, pear, cherry, plum, apricot and many other varieties under this advanced system. You should know about this sure way of securing a paying orchard.



Our book, "Pedigreed Horticulture," explains how greater profits can be had by planting trees of known parentage. It means money in your pocket. Write for this book explaining the Moncrief System of Pedigreeing. It is free.

J. Moncrief, President

Winfield Nurseries Co.

221 Central Ave. **WINFIELD, KANSAS**

THIS FINE DURABLE **ELBURN** UPRIGHT GRAND

After many years of experience, we have produced a better piano at a moderate price, and for **tone, touch, durability** and **price,** it is **without an equal.** Proof of this is, of nearly 4,000 pianos sold in 12 months, over 800 of them are Elburns.

Description—Case hardwood, double veneered; improved automatic swinging music desk and rolling fall-board; very handsome round consols and artistic pilasters; attractive plain front panel; beautifully finished and polished with the best varnish.

Dimensions—Height, 4 feet 7 inches; length, 5 feet 2½ inches; depth, 2 feet 3 inches.

Full scale, three pedals, full iron plate, bushed tuning pins, double repeating (heavy brass butt flange) action, compound rest plank or rock maple, nickel soft action rail, steel cape d'astro bar, three-string unison, Bessemer steel wire, overstrung copper-wound bass; special selected sounding board finished on both sides.

We will ship this instrument together with a good bench to match, by prepaid freight, to responsible people, and if it is not exactly as represented, and satisfactory, it may be returned at our expense.

Terms: $25.00 Cash, balance at $6.00 per month, with 6% simple interest on the deferred payments. ORDER ONE TODAY FOR XMAS.

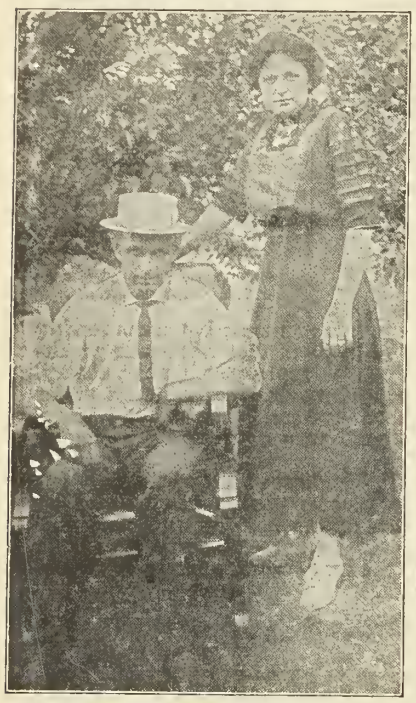
J. W. JENKINS SON'S MUSIC CO.

713-715 FELIX STREET ST. JOSEPH, MISSOURI

Winning Success on a Small Farm

(Continued from page 6.)

patch. But things were not very favorable, as the whole thing had been in corn the year before, and it was corn stalks and weed stalks all over. As I had no choice, I cleaned up a piece, plowed it deep, and got it into the best possible shape under the circumstances. My one-fourth acre patch looked so good I decided to try an acre and a half this year. So I measured it off, started in on rows 640 feet long, and set out twenty-nine rows, making a little over one and one-half acres. I set out every plant myself, using a dibble, and getting down on my knees. It took over 10,000 plants to do the job, and it was about the biggest job I ever tackled. After I got it set out my troubles started. Unusually as it was for a beginner, about 95 per cent of the plants started



MR. AND MRS. W. C. HEBDON.

to grow, but not understanding the water course, and before I got my ditches fixed, we got a grand rain, and as a result it washed out 3,000 plants. Being too late to set them in again, I had to let it go. My next discovery was that in setting out my plants, I had hit the old corn rows. I did not think it would make much difference, but later we got the extremely dry weather and lots of it, and I lost plants, and then more plants, but I did not get discouraged. I kept cultivating and hoeing these berry plants, and what was left did fine. As I had lots to do, I did not have time to worry.

The next big event was the harvest of my berry crop on my quarter-acre patch. Having watched how other folks harvested their crop, I was pretty well prepared, and had carriers and everything ready. I did not have much difficulty in picking and packing, and as our fruit-growers' association was in good working order, I did not have trouble in selling them. After the season was all over, I figured that 10,000 plants which I took out was worth forty dollars, and I sold $55.46 of fruit, making a total of $95.46 from the quarter acre. Considering my inexperience, mistakes and adverse conditions, I thought that was pretty good for a first attempt.

After we got through with strawberries, we sold our cherries, grapes and plums, as well as all kinds of vegetables through our association. I found this method of selling to be just the thing. It has many advantages over every man for himself.

While I have spent a good deal of my time on fruit, I am much interested in chickens, and I figured that it does not cost any more to feed a good chicken than a poor one. I got an incubator and a good start in pure-bred barred rocks. I guess there is not any of the troubles that goes with the poultry business that I did not have. Lice, mites, disease, rats and cats, all took their share, but I kept everlastingly at it, until things are coming my way. I started in with a motto of "not how many, but how good," and as the good strain cost good prices, I had to make a small beginning, because of my inexperience, and of the first cost, but I have worked until I have two pens of fine, healthy chickens. As corn is one of the great crops in this state, and with corn goes hogs, I decided to try that, and I have eight spring pigs, doing nicely. When in the city we always used to sigh when the price of beef or hogs went up, but it is different when we have them for sale.

As I started in with poor health, would like to say a few words about what the fresh air, good home-raised food has done for me, as well as the rest of my family. The first change I noticed was the difference in our appetites. We were all hungry at meal time. Next, I noticed that every time I got on the scales I was just a pound or so heavier, until now I weigh about fifteen more than when I started farming. Along with that, not only myself, but my wife and boys, and we have four now, are enjoying one of life's best blessings, good health.

After a good, cold winter, we were glad to see the spring rains, and the green fields of the year 1912. My first work was to get three acres in shape for alfalfa. I started in, not to see how quick, but how good this could be done. After getting the land plowed and pulverized, I sowed my seed, about fifteen pounds to the acre, and the weather was in my favor. The result was a fine stand. The work was my first attempt, and in fact, the first I had even seen done. Then, being just a little afraid that perhaps I was going into the strawberry business at too fast a rate, I thought it best to only set out half an acre this year, making a total of two acres. I began by applying a good coat of manure, plowed deep, and had the satisfaction of knowing that I was doing things nearer right than before. After getting my ground in fine shape, I set out my half acre, using about 4,000 plants. They have done splendidly, and I have not lost over 5 per cent of them.

THE SECOND ATTEMPT AT GROWING STRAWBERRIES.

Berry Prices Go Up.

When this was done came the harvest of my one and one-half acre patch. After the hard struggle it had had, I found in the spring only about half a stand; that would be three-fourths of an acre. But we had a good season, with plenty of rain, and cool enough to be good shipping weather. About this time the growers decided to not try association methods, because we felt that, in this locality, we were not of sufficient numbers to maintain an association. This compelled us to return to our old methods of each grower selling his own fruit. The Missouri strawberries were plentiful on

JOHN STECK'S APPLE TREES EARN $6.66 PROFIT A YEAR

John Steck has a big apple orchard near Winchester, Va. Seven acres of his trees now eighteen years old, on which accurate records have been kept, show a net profit of $59.91 for each tree during the past nine years—an average of $6.66 per tree each year. A young tree costs less than half a dollar. Five dollars will care for it properly for ten years. You can readily figure the profit in the kind of farming Mr. Steck does. He planted mostly Harrison trees, of course.

Our Books Tell You How to Do as Well

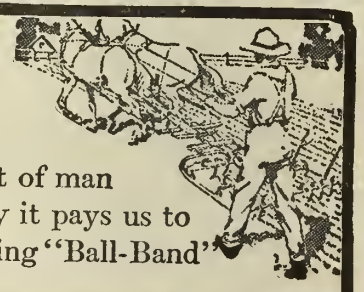
Harrison's General Catalog. A book of facts for fruit growers. Lists of select varieties and our prices. *Free on request.*

How to Grow and Market Fruit. A complete guide book. Price 50 cents—this amount rebated on first $5 order.

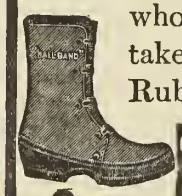
The How and Why of Shade Trees and Evergreens for greatest cash returns, comfort, protection and beauty. *Free.*

Harrison's Nurseries
Atlantic Avenue
Berlin, Maryland
Eastern Shore Farms for Sale. Write for details.

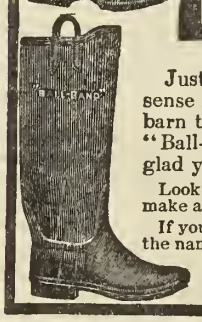
When you "lap your harrow half" you do your work twice as well

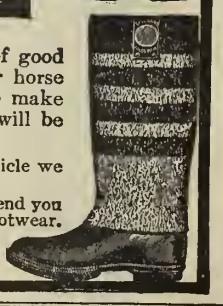


If you do this you are the sort of man who can understand why it pays us to take double pains in making "Ball-Band" Rubber Footwear.



"BALL TRADE Red MARK BAND"





Just as you know how to put a little bit of good sense here and there—like a wide door in your horse barn to prevent bruising hips—we know how to make "Ball-Band" Boots and Arctics so that you will be glad you bought them.

Look for this Red Ball in buying. It is on every article we make and is the sign of footwear you can trust.

If your dealer can't supply you, write us and we'll send you the name of a nearby dealer who sells "Ball-Band" Footwear.

Mishawaka Woolen Mfg. Co., Mishawaka, Ind.
"The House That Pays Millions for Quality"

7 Per Cent

Your Idle Money will be amply secured, if invested in our First Mortgage GOLD BONDS BEARING 7 PER CENT INTEREST, payable semi-annually. Particulars furnished to bona fide investors upon application to
THE FRUIT-GROWER AND FARMER
St. Joseph, Missouri

SOMETHING NEW
"KANT-KLOG" SPRAYERS
Gets twice the results with same labor and fluid. Flat or round, fine or coarse sprays from same nozzle. Ten styles. For trees, potatoes, gardens, whitewashing, etc. Agents Wanted. Booklet free.
Rochester Spray Pump Co.
196 Broadway, Rochester, N.Y.

the market this year, and could be bought in our town for as low as $1.50 a crate. But the last of them went up to $2.40 a crate, and that was the price at which we started, as our fruit was ready for market just as the Missouri berries were going off. The price continued to go up until the last of our berries sold, f. o. b. our shipping point for $2.75. We had very favorable conditions to make a good market, as in the western part of our state, as well as in Wyoming, they do not raise strawberries, and we had a demand that we have never been able to fill.

My experience was that I had orders for two-thirds more berries than I could fill, at prices ranging from $2.40 to $2.75 a crate. We got along fine with our second harvest, had fine weather, plenty of good pickers, and after the rush was over, from just about three-fourths of an acre stand that was left, we found that our total sales had amounted to over $200.

All other lines of our farm did equally as well, and while I have gone into considerable detail on strawberries, we have had just as good returns from our cherries, grapes, plums and apples. With vegetables, we had one acre of potatoes, one-half acre of tomatoes, also cabbage, peas, beans, etc. Our chickens turned off hatches running between 72 and 80 per cent, and we raised 80 per cent of them and have kept them free from disease for two years.

I like the fruit business better every day, and it is my plan to increase my acreage, and do everything I can to improve and grow better fruit.

Bankers Foster Scientific Agriculture

Agriculture is today our greatest single industry. Land is the basis of all values and its resources must be conserved; soil fertility and crop production must be increased, or the nation will tend toward decadence. The importance of improving farming methods began to be realized some years ago by the national government when a secretary of agriculture was added to the President's cabinet. Progressive farmers appreciated its importance. Business men began to see that the decadence of agriculture meant a decline of business. Bankers realize that the nation's wealth must come from the soil, and that business prosperity is dependent upon the yield of our farms.

These men who handle the nation's finances are studying agriculture and the problems of country life. At a meeting recently held in New York, the American Banker's Association adopted strong resolutions favoring agricultural education, teaching agriculture to the farmers on their farms as well as to pupils in the rural schools, and urging that more support be given the agricultural colleges for extension work.

North Dakota bankers have been foremost in the effort of bringing better methods of farming direct to the farmers. In that state, as in others, the agricultural college was limited in the number of men it could put in the field to teach better farming methods and by the fact that they could not get close to the people actually engaged in production. Business men saw the yields of the farms gradually decreasing, and knowing that if their own business was to be continued and their profits not to be jeopardized, some effort had to be made to better the conditions on the farm. Several prominent business men of Fargo met with the North Dakota Bankers' Association and adopted a plan of bringing the agricultural college closer to the farm. The work increased and in the course of time resulted in the formation of the Better Farming Association. This association is now conducting extension work in which a farm expert meets the farmer personally on his own farm and works with him under his own conditions. That is being done with just one object in view, that of making farming in North Dakota more profitable and doing so just as rapidly as possible.

In every state, bankers' associations are devoting attention to the needs of farmers, both in the way of better loans and in improving the crop yields. Typical of the efforts the bankers are making is contained in the remarks made by W. C. Gordon of Marshall, Mo., chairman of the agricultural committee of the Missouri Bankers' Association, before a meeting of bankers in October.

Mr. Gordon said: "The movement to foster scientific agriculture began about three years ago because of the realization that agricultural conditions were not improving and the yield of crops was not increasing, and that the soil was being robbed and that there was not the proper education along agricultural lines. The farmer was not taking advantage of the research which was being made. Bankers being interested in the welfare of the country, realized that something must be done.

"Accordingly many of the state associations appointed committees on agriculture. At the conference at Minneapolis in August thirty-six committees were appointed. Twenty-three of these committees were represented at this conference called by the American Bankers' Association.

"The movement is based on the realization that the land is the basis of all values and that its resources must be conserved and fostered or the nation will tend toward decadence. We speak a great deal of conservation, but this has heretofore been confined to forestry, water power and mineral wealth, but there is a greater need of conservation of land values and land elements than for any other.

"As proof of the need of interest in this direction one need only to cite the decreased rural population with the consequent increase in urban population. The last census shows Missouri counties with a decrease in population. Along with the increase in total population and the consequent consumption of supplies there has not been an increase in production.

"The total yield of corn in Missouri, for example, in the last ten years has been but slightly in excess of twenty-eight bushels per acre, when it might easily have been made sixty or seventy-five or even larger by improved farming methods.

"There has been a soil robbery which has depleted the land without any rational attention on the part of the majority of farmers to rebuild it. We spend money in appropriations for scientific research in agriculture, a large part of which is wasted as far as practical benefits are concerned. Scientific research is not a fiction, not a theory, but a practical fact and if the result of such research was generally adapted we might overcome nature and make her do our bidding in a hundred ways in which she now dominates us.

"The farmer is an ultraconservative. He has been content to do as his forefathers did, and has not kept abreast of the times. Some influence should be brought to bear in all kindness and with a regard for the future, to get him to adopt the methods which have been perfected for his own advancement.

"In another direction is there necessity for improvement. Little if any agricultural education for the coming generation is afforded in the common schools. The boys and girls of today become the farmers and the farmers' wives of tomorrow and if the industry of agriculture is to be fostered and maintained, some adequate provision must be made for the teaching of agriculture in the rural schools and even in the high schools.

"Farming is as much a profession as is the law or medicine or the ministry, and the farmer boy is entitled to a good and thorough course in preparation for his work.

"The bankers' associations in Minnesota, Illinois and North Dakota have been at work on this question for about three years, and they have secured tangible results looking toward the betterment of agricultural conditions.

"In North Dakota the effort of the bankers' association has resulted in the forming of the Better Farming Association of North Dakota, which is widespread in its influence over the state and is destined to be of much practical benefit to the farming interests. Through the efforts of the bankers' association committees of Minnesota and North Dakota many of the rural schools have been consolidated. Agricultural high schools have been established and a general awakening to the possibilities of effective work in improving agricultural condition has been aroused."

Genasco

The TRINIDAD-LAKE-ASPHALT Ready Roofing

Stays waterproof

Trinidad Lake asphalt makes roofing *stay* waterproof. It is the product of Nature. And man has never equaled it for roofing. We use it to make Genasco.

Genasco doesn't rot, rust, dry-out, crack, break—and doesn't leak.

Get Genasco for every building on the farm. Mineral or smooth surface. Comes in rolls ready and easy for anybody to lay. Ask your dealer for Genasco. Write us for samples and the valuable Good Roof Guide Book—free.

The **Kant-leak Kleet** for smooth-surface roofings does away with nail-leaks and makes seams watertight without cement.

The Barber Asphalt Paving Company

Largest producers of asphalt, and largest manufacturers of ready roofing in the world

Philadelphia

New York San Francisco Chicago

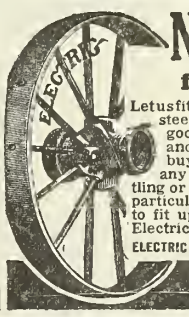
In writing please mention The Fruit-Grower and Farmer.

HUNDREDS OF CARLOADS OF

Fruit and Ornamental Trees

Evergreens, Shrubs, Hardy Roses, etc. 1,200 acres. 60 in **Hardy Roses**, none better grown. 47 greenhouses of **Palms, Ferns, Begonias, Everblooming Roses, Geraniums**, and other things too numerous to mention. Mail size postpaid, safe arrival and satisfaction guaranteed. Immense stock of **SUPERB CANNAS**, the queen of bedding plants. Acres of **Hardy Perennial Plants**, which last for years. 50 choice collections cheap in **Seeds, Plants, Roses, etc.** For Fruit and Ornamental Trees ask for Catalog No. 1, 112 pages; for Seeds, Everblooming Roses, Cannas, Geraniums, Greenhouse and Bedding Plants in general, Catalog No. 2, 168 pages. Both **FREE. Direct deal will insure you the best at least cost. Try it.** 59 years. (58)

THE STORRS & HARRISON CO.
Box 14, PAINESVILLE, O.

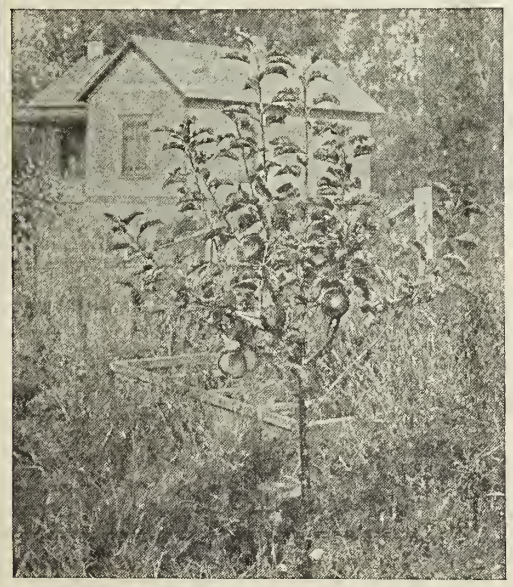


New Wheels for the Old Wagon

Let us fit your old wagon with "Electric" steel wheels and make it strong and good as new. Another wagon life and a *real handy wagon* just by buying wheels. Broad tires, never any resetting, no drying apart, rattling or coming loose. Free book gives particulars and shows how it pays big to fit up old wagons with the long-life Electric Steel Wheels. Write for copy.

ELECTRIC WHEEL CO., BOX 57, QUINCY, ILL.

Electric



Plant Oregon Grown Trees

Produced by One of the Oldest, Largest and Best Equipped Nurseries in the Northwest

SEND YOUR NAME for "*Miller's Guide*" and Full Particulars for Cash Discount and Prepaid Freight Offer.

TRUE TO NAME—Healthy, Well Rooted, BEAR YOUNG—Leading Varieties in APPLE, PEAR, PEACH, PLUM, PRUNE, CHERRY—Full Line of SHADE and ORNAMENTAL TREES, VINES and SHRUBS

A. MILLER & SONS
Incorporated Founded 1878

MILTON NURSERY CO., Milton, Ore.

Handling Hard-Pan Soil

"Abundant applications of lime and manure, and the frequent growing of legume crops are essential to success in handling hardpan soils. We can grow legumes and we can buy the lime, and we went into dairying to get the manure. We have found dairying to be profitable." So said G. R. Wheeler, who owns a 220-acre farm two miles from Tyro, Kans. This town is in the southeastern part of the state, in the hardpan section. About 160 acres are cultivated, of which half either is hardpan or closely related ash land soil, with a hardpan subsoil. The farm consists of average soil such as is found on many farms in that section. Most of the hardpan farms in that section are not producing good profits. This one is.

Mr. Wheeler's two sons are graduates of the agronomy course of the Kansas Agricultural College. His daughter was a student in domestic science, at the same college. So they understand the science of profitable dairying and soil management. The Fruit-Grower and Farmer has been a regular visitor at this farm for many years.

This genuine, "buck" hardpan is a hard proposition to handle. The soil grains are small, and there is a rather high percentage of hydrated aluminum silicate, which is a soil cement, that binds the particles together. This tends to make a heavy soil, and one hard to work.

The physical condition of the land easily may be injured by working when the weather conditions are not favorable. Naturally, this land is fairly fertile, and the problem is mostly one of handling with care as to its physical condition. Lime promotes flocculation, which is the forcing of the soil grains apart. Thus it tends to overcome the harmful effects of aluminum silicate. Legumes add nitrogen and humus, and manure adds all essential elements and humus. All these tend to make the soil a better home for the roots of crops.

Lime has produced good results. Alfalfa usually can't be grown on such land, but this fall, a fine stand of alfalfa was obtained on land limed three years ago. The soil received an application of two tons an acre of ground limestone, which is a light application. This lime cost $2 a ton, on board cars at Tyro.

Cowpeas is one of the principal legumes grown. Forty acres were planted this season. The crop usually is good, but it was light this year, on account of drought.

Cowpeas are planted in rows, and cultivated. They are cut with a LeRoy Bean Harvester, which cuts two rows at a time, with knives, and piles the two together in a windrow.

Quite a bit of seed is threshed. Mr. Wheeler owns a half interest in a Koger Pea and Bean Thresher. This machine cost $315, and it has a capacity of ten bushels an hour in good peas. It requires a 6 H. P. engine to run it. When the machine is regulated properly, it does good work, and cracks but few peas.

In addition to the leguminous crops, some wheat, corn and kafir corn are grown. Wheat is the only grain sold.

HOME POWER PLANT ON THE FARM OF G. R. WHEELER.

All other crops are fed on the farm, mostly to dairy cattle.

The dairy herd consists of 32 head, mostly Holsteins. Four cows are pure-bred. The bull is a high-class, pure bred animal purchased in New York. Fourteen cows are milked. The rest of the animals are young. All milk is separated and made into butter on the farm. The butter is delivered direct to the customers. The skim milk is fed mostly to hogs.

A silo, for silage to be fed in the winter, has been built. It is of staves, and is 30 feet high, 12 feet in diameter, and goes four and a half feet into the ground. This silo will hold 78 tons of silage. Mr. Wheeler believes in wetting silage. In speaking of this, he said: "I believe it is almost impossible to get silage too wet. We filled this silo half full of corn silage this year, that was somewhat dry, and we put 68 barrels of water in it. We finished filling with silage made from kafir corn, and we used 20 barrels on this. Don't be afraid of getting silage too wet."

The silage cutter is owned by three farmers. Mr. Wheeler believes it would pay to have a summer silo to use when pastures fail. He expects to build a silo for this purpose, and it will be a cement solid-wall structure. The silo he has cost $225, laid down at Tyro, and about $50 for the foundation. The total cost, including cost of erection, was $325.

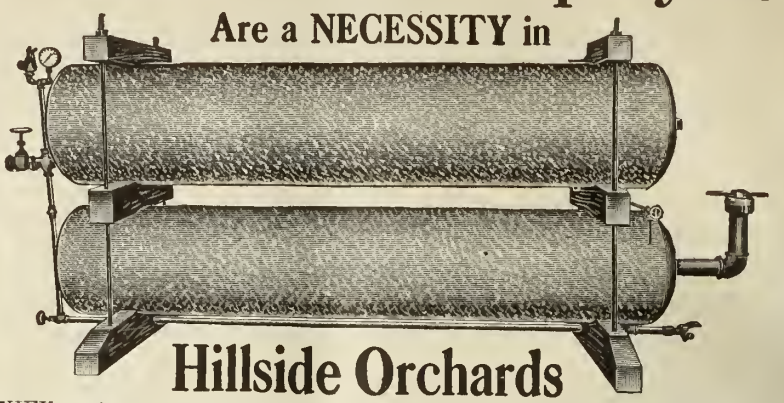
The barn where the hay is stored, and where the cows are fed hay, is 62 by 48 feet. It is 35 feet high. The cost was $1,600. Seven feeding chutes are provided in which to throw the hay down to the feeding bunks in the basement. The roof is iron. Mr. Wheeler is pleased with the roof, and the only objection he has found is that some water will flow in when a hard wind accompanies a rain. This roof is cheaper than if made of shingles.

In the winter, cows are fed twice a day, the ration usually being 12 pounds of silage with a gallon of bran and a pint of cottonseed meal at each feed. In addition the cows get about all the hay they care to eat. Some legume hay is fed every day. The silage and concentrated feed is fed in a shed near the silo. Hay always is fed in the barn.

Cows are fed bran in the summer also. They receive a half gallon twice a day. Mr. Wheeler believes this summer feeding of concentrated feed is profitable.

The milk from every cow is weighed at every milking. Milk record sheets obtained from the dairy department of the Kansas State Agricultural College are used. The milk is tested once a month. Unprofitable cows thus easily may be found, and eliminated.

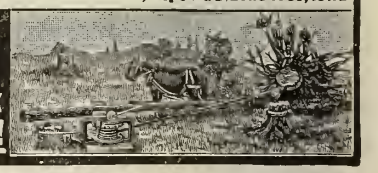
The cream is churned into butter, which is packed in one pound bricks. These are sold to regular customers in Coffeyville, a city 12 miles away. Some of these customers have been supplied with butter for more than six

Sioux Pneumatic Sprayers
Are a NECESSITY in

Hillside Orchards
THEY work in any position without any trouble and work all the time. This ability to work makes them just as necessary on level ground. Your spraying will be done at less expense, be done better and done in time, if done with a Sioux. Bulletin A2 tells some other things about them. Write for one NOW.
SIOUX CITY AIR COMPRESSOR COMPANY
710 BLUFF STREET SIOUX CITY, IOWA

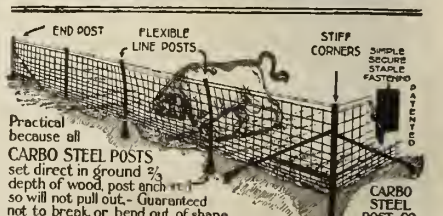
Spraying Revolutionized
WILKINSON'S SPRAYER
New Idea Continuous
Engine and Pump mounted on Separate Trucks. Two Mounted Solution Tanks furnished with each complete outfit; one tank being filled while other tank is being sprayed. Requires less than one minute to connect. Pump Truck to Solution Truck lighter on team, as you do not draw engine and pump back and forth when filling tank. Liquid thoroughly stirred with an adjustable agitator which can be run fast or slow, as desired. No other sprayer has this feature. Capacity and output double that of any other sprayer made.
Fully protected by patents pending.
WILKINSON SPRAYER COMPANY
LOCK BOX 900. ST. LOUIS, MISSOURI

One of the 400

Cash or Credit
$5 to $40 Saved
Brilliant Oak Heater
"A Kalamazoo Direct to You" Trade Mark Registered
And Gas Stoves Too
Shipped Same Day Order is Received
It is not only the saving of money that has given us 200 000 delighted customers. It s the greater beauty, convenience, fuel economy and durability of every Kalamazoo Stove or Range. Also our prompt delivery and liberal treatment.
Write for Catalog of 400 Stoves and 30 Days' Free Trial
Don't pay the middleman $5.00 to $40.00 extra. Let us save you that much. Return a Kalamazoo after a year's use if our claims are not true. What *dealer* will do that! Send postal now for Catalog No. 135, and please mention this paper.
Kalamazoo Stove Co., Manufacturers, Kalamazoo, Mich.
Ask for Furnace or Gas Stove Book too, if interested.

How to Clear Your Land
Monarch Double and Triple Power Steel Stump Pullers clear land quickly, easily and cheaply. Clears 1 to 5 acres a day. Pulls green stumps 7 feet thick. Guaranteed 700 horsepower, for 5 years and against breakage. For 18 years the choice of wise farmers. The only manufacturers of complete steel stump pullers in the world.
Get This Free Book!
Write for our great book. An education to every farmer with stumps. Don't wait. Write now. It's free. Act today.
ZIMMERMAN STEEL CO., Dept FGD Lone Tree, Iowa
Get Our Book Now!


Prune 3 Trees
while your Neighbor Prunes One
Work from the ground, without ladders and without bruising the limbs, stripping the bark or injuring the trees. With the
MONARCH PRUNER
you work three times as fast and do better work. One stroke severs a stout branch. Cuts smooth and close, leaving no stubs or ragged wounds. Saw blade (attached in 10 seconds) cuts largest limbs. Lasts a lifetime. Pays for itself first day. *Money back if you say so.*
Write today for circular and prices.
We want one agent in every county. Splendid opportunity and exclusive territory for live men. Write today for terms that mean money for you.
THE MONARCH PRUNER & MFG. CO.
Dept. B Cincinnati, Ohio



years. The price in November was 35 cents a pound. The butter is wrapped in oiled paper, and cartons are used in warm weather. It is delivered once a week, both in winter and summer. It always is kept on ice in warm weather. The butter always is marketed in first-class condition.

All eggs produced by the farm flock are sold to their customers. The price was 30 cents a dozen the first week in November. Quite a few hens are kept, and the sale of the eggs direct works in well with the sale of butter.

A house has been built for the cream separator, churn, testers, hot water heater and the like. A washing machine is placed in one end of the building. Power is furnished by a 2 H. P. gasoline engine, which is belted to a power shaft. The floor is concrete. It consists of one part cement to three parts sand and six parts crushed rock. The cost of the building and equipment was $150. It has been about the most profitable investment Mr. Wheeler ever made.

SILO AND DAIRY BARN ON THE FARM OF G. R. WHEELER.

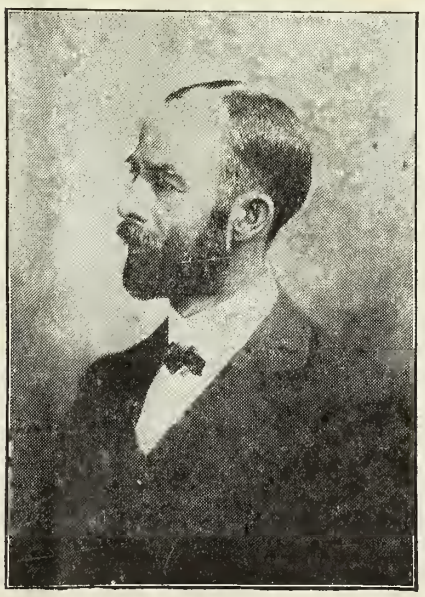
The soil on this farm has been built up by the proper use of legumes, lime, crop rotation and manure, and it is producing fair crops. Drought has reduced these materially in the last two years, but the land is in good condition, and with proper moisture, good crops may be grown. Many farmers on the hardpan soils of that section could learn much if they would study the methods Mr. Wheeler uses.

A Million for the Service Bureau.

One million dollars recently has been appropriated by the International Harvester Company to its Service Bureau, which has been organized under the management of J. E. Waggoner to aid in the campaign for rural education.

The Service Bureau has not been intended as an advertising proposition. The only way the company expects to benefit from its organization is in the development of a higher type of farming in this country, and with this development will come an increased demand for specialized machinery, of course. The work of the Bureau is carried on by means of lectures at farmers' institutes, the conducting of model farms, publicity work in newspapers, and the answering of special inquiries to the Bureau. With the increased appropriation, this work will be greatly extended, and new lines will be taken up.

Perry G. Holden, the Iowa corn specialist, has taken up work in the Bureau recently. J. G. Haney, formerly superintendent of the Hays Experiment Station at Hays, Kansas, has taken charge of the work of the Bureau in the Dakotas, and has established a demonstration farm in both states.



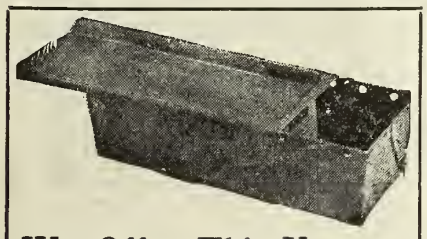
P. G. HOLDEN.

Professor Holden is known wherever real agriculture is known. His whole life is one of service. He has aided in the organization of demonstration trains, short school courses, corn shows, county demonstration farms, and the National Corn Exposition. As head of the extension department of Iowa State College, he did a work which, Senator Cummins says, up to the present time has increased the wealth of Iowa $20,000,000.

A little more than two years ago, the International Harvester Company established the I. H. C. Service Bureau. Already, it has done much work of considerable value. But, better still, it has made careful preparations for a work, which, it would seem, is of far greater service to humanity in general than anything ever before undertaken by a business organization. To do a big work a big organization is necessary. Not alone the bigness, but the perfectness of the International organization as well, appealed to Professor Holden. The entire organization is to be enlisted in the service work. The big general agencies, scattered all over the United States and Canada; the salesmen, travelers, and expert machine men; the 40,000 dealers—every one, so far as possible, is to be made an apostle of better farming.

For years the Harvester Company has realized the importance of service. It has spent millions of dollars in the perfection of labor-saving machines, and it has sent men out into the fields to show farmers how to operate these machines. It has loaned machines to schools and colleges, and it has distributed tons of literature, packed with farm information. And last, though first, the invention of the reaper, which founded modern agricultural greatness, also founded this company. Agriculture and the International Company have grown up together, and together they have prospered. But heretofore the service rendered was more or less indirect. Now the company is going in for direct service—direct to the farmers, and direct to the farmers' children, that the men and women of tomorrow may be more capable and so more prosperous than the men and women of today.

A subscription to the Fruit-Grower and Farmer means a dollar well spent.



We Offer This Year an

Orchard Heater

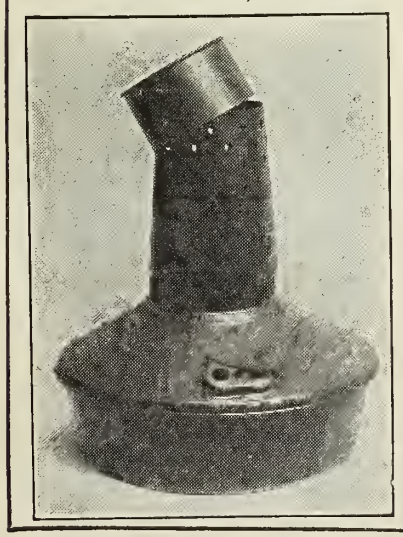
for every class of service

The old reliable **Reservoir Heater** has stood the test for five years and is the standard of America; 3 and 6-gallon sizes. Most efficient heater ever attempted and over one million in use. The New California Heater, smokeless, in 3 and 4-gallon sizes, has been adopted by the California Fruit-Growers' Exchange and 500,000 purchased by them. For orange and lemon growers and for greenhouses it has no equal. Write us for information.

Live agents wanted everywhere.

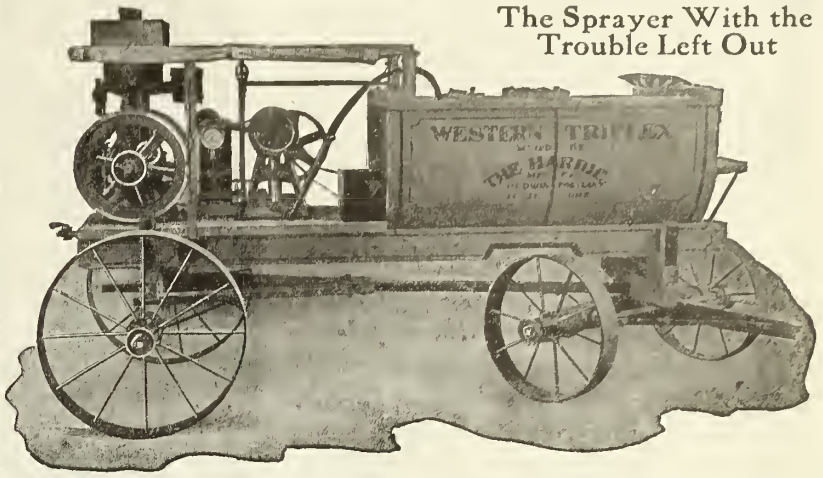
Hamilton Orchard Heater Co.

GRAND JUNCTION, COLORADO



The "HARDIE" Triplex Power SPRAYER

The Sprayer With the Trouble Left Out



6,000 of This Machine in Use Today

THOUSANDS of the most successful fruit growers say their success is in a large measure due to the reliable and effective operation of this machine, because it has always been ready to deliver the spray to the tree in large volume and under high pressure. It is noted for its

Reliability—Large Capacity High Pressure—Light Weight

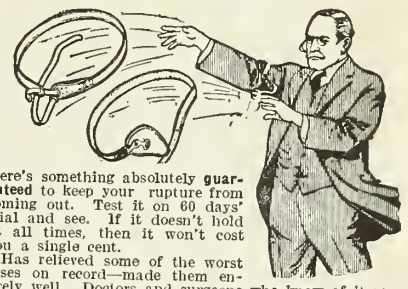
Six thousand of them in the best orchards of this country; many of them have been in use for eight years and not one worn out yet.

When you buy a "Hardie" you take no chances. They are right all the way through, from the engine to the nozzle. The growers of any fruit section of this country will tell you this.

We make several other sizes and styles. Our catalogue and prices are ready for you. A postal card will bring them. Write it now.

The Hardie Manufacturing Company
HUDSON, MICHIGAN
KANSAS CITY, MO. PORTLAND, ORE. HAGERSTOWN, MD.

Away with Worthless Trusses



Here's something absolutely **guaranteed** to keep your rupture from coming out. Test it on 60 days' trial and see. If it doesn't hold at all times, then it won't cost you a single cent.

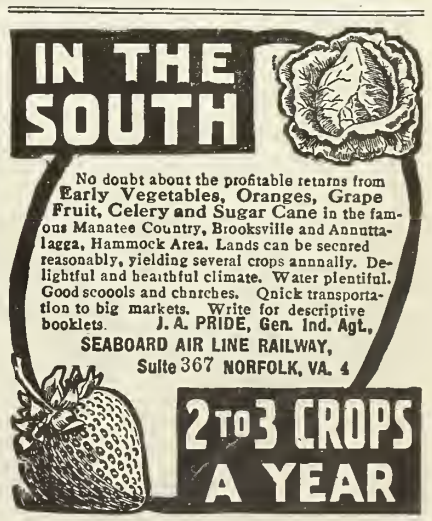
Has relieved some of the worst cases on record—made them entirely well. Doctors and surgeons who know of it recommend it instead of operation. No belt, no leg straps, no springs. Is water-proof—will hold in bath.

Write for Free Book and find out all about it. Book is full of facts never before put in print. Cloth bound. 96 pages. Explains why elastic and spring trusses cannot help you. Shows dangers of operation. Exposes the humbug "appliances," "methods," "plasters," etc. Will save you from wasting money. Shows why 60 days trial we allow is the only safe way to test anything for rupture and how we offer you the only thing good enough to stand such a long and thorough test.

Book gives over 5,000 voluntary endorsements. Write for it today—it tells you things you could never find out by going to doctors or drugstores. Address:

Box 632—Cluthe Co., 125 E. 23rd St., New York City

In writing please mention The Fruit-Grower and Farmer.



In writing please mention The Fruit-Grower and Farmer.

Support For Raspberries

Notes About Berries, Grapes and Birds

By L. R. Johnson, Missouri

A reader of The Fruit-Grower and Farmer from Virginia writes to ask whether I found it necessary to support the red raspberry canes with wires as well as the blackcaps. My description applied entirely to the blacks. The reds do not send out the long laterals that characterize the blacks, and besides, I do not usually pinch back the reds at all. Even they, however, would look and do better between two wires, but whether it is worth the time and trouble each fruit grower must decide for himself.

Another question is whether poultry manure should not be considered too rich in nitrogen for the raspberry. I should say this depends altogether on the amount of nitrogen in the soil, as indicated by the growth of the canes. Some of my bushes show a strong growth, while many do not. By strong growth I mean from three to six large canes with plenty of strong laterals branching off from their tops. My observation is that small fruits are habitually underfed instead of overfed. I can say with truth that I have never been able to get the soil too rich for any small fruits except the extra early varieties of the strawberry, and only certain ones of them. The Gill, for example, loves a rich soil and will run to fruit instead of runners. The richer the soil the better the blackberry and raspberry flourish. I have seen fine specimens of blackberries on canes that grew out of the edge of a rick of stable manure. Grapes I have manured as heavily as strawberries, only to find them producing better and heavier crops. I remember, too, how much better a row of Houghton gooseberries did after an application of poultry manure. It seemed to put new life into them and they bore more than ever before. I should be curious enough to travel a long way to see any kind of small fruit that was being damaged by over-fertilization. Let my friend experiment, if he hesitates to accept this view, and apply poultry manure to various plants of the small fruits, and report the result to these columns. My conviction is that most fruit growers could greatly increase the size and quality of their crops by doubling the fertility of their soil.

We were about to again cultivate the black raspberries to induce as late a growth as possible, when I noticed that fall weeds, the kinds that live over winter, were coming up in a perfect carpet all over the plantation. The thought at once occurred that here was a first class cover crop, as good as I could have sown, and that if we were to proceed and tear it up, the soil would be left bare all winter, if not top-dressed with stable manure. Bare, unplowed soil is an abomination to nature, for, by the leaching away the nitrates and stifling the bacteria through puddling its surface, it will be poorer in the spring than it was in the fall. The cover crop of weeds was therefore let alone with the conclusion that it would be no harder to turn under in the spring than so much rye or other cover crop.

During the first part of November we finished eating the last of the grape crop. This is unprecedented here. The Goethe proved to be the latest grape, later even than Norton's Virginia which always had no rival in late ripening. As usual, we sacked some of the late varieties to prolong the season, but found the Goethe keeping better outside than in the sacks. I have just one vine of the Goethe, but it is the largest in the vineyard. I left bearing wood in proportion to its superior growth, with the result that its crop was probably forty pounds or more. This was quite a strain on its vitality and it was not able to color all its clusters, but I found little difference in the quality of the green and the bronze colored berries.

For some reason that I cannot explain, these late grapes were unmolested by the birds that had previously done some damage. This would indicate that the robbers are migratory although cat-birds, which I have known to work damage, were still here. The oriole is the bird that is said to have a special penchant for grapes, but they are so shy that I rarely get sight of one.

In October the Norton's began to dry inside the sacks. The woody stems would dry and turn black, and the fruit would then shrivel. The Goethe did not do this, and I resolved to try an experiment. I got some ground cork, in which foreign grapes are shipped, and packed in this all the remaining Goethes and Nortons, thinking that they might keep till Christmas. But early in November half or more of them were spoiled. Perhaps the warm weather has something to do with this. Norton's had all perished, but the Goethes that were sound were unimpaired in flavor.

One thing becomes evident, supported by former observations, that the Goethe is one of the best late grapes and possesses tremendous vigor of growth that enables it to bear unusually heavy crops. If it has any weakness that would debar it from the family or commercial vineyard, I have failed to discover it. It is no more subject to rot than the average sort.

Why all kinds were such failures when sacked I cannot say, unless it was due to the heat generated by the hot sun inside the paper covering. When uncovered during the day the grapes felt hot and half or more of them would be lying at the bottom of the sack, rotten.

This season is notable with me for the reason that I believe I have discovered the best white grape. This is none other than the Wapanuka, one of the numerous creations of the veteran grape specialist, T. V. Munson, of Texas. In quality I should rank it with the Delaware, though their flavors are quite distinct. It is a good grower, large in berry and showy in cluster, equal in these respects to the other whites. In quality it is far ahead of Niagara and Moore's Diamond. It excels Green Mountain, good as that grape is. Its berries have a creamy yellow cast that bespeaks their richness. Its season is about that of the Delaware, a little ahead of Concord. Mr. Munson writes: "The Wapanuka has only one defect, that is cracking if rain hits it at ripening time, preceded by dry weather. It can be shipped in four basket (four pound) tomato crates 100 to 300 miles to good advantage if there are no transfers. It has done well about Boston, in Pennsylvania, Kansas and other northern states and can endure fifteen to twenty degrees below zero." I can testify that 16 degrees below last winter did not harm it here. I feel rather jubilant at finding out this fine grape, for its superb quality will make it a welcome addition to the vineyard.

One other Munson grape showed its first fruit this year and that was the Mericadel, a hybrid of America with Delaware. This grape reminded me of Norton's, but larger in bunch though smaller in berry than the Concord. It has the look of a wild grape and is a great bearer, and the quality is excellent.

One of the best ways to get ahead of birds, I have found, is market orders that take the grapes just as fast as they ripen. The grape-puncturing birds have a sweet tooth and and a discerning eye, and you don't catch them sticking their bills into grapes that are sour and lack color. For that reason the red and espe-

The Beck Sprayers

Lead all Competitors in High Pressure and Efficiency

Watch This Space for Cut of Our New

Simplex Power Rig

The Moderate Priced Outfit
For the Small Fruit Grower

THE ONE-MAN RIG

MOTOR—1½ H. P. Long Stroke
PUMP—Double Cylinder, Vertical
TANK—100-Gallon Capacity; Cypress
AGITATOR—Double Propeller Type

Send us your name and address and we will send you circular describing this outfit. We want live representatives everywhere. Address all inquiries to Dept. B.

Beck Sprayer Co. Flushing, Mich.

BOYS! GIRLS!

Here's an Excellent Opportunity to Secure a Beautiful Xmas WATCH WITHOUT COST

BOYS! GIRLS! HERE is the Handsomest and Neatest Little Watch you've ever seen. It is a Standard 16 size, and has beautifully embossed case, with open face. It is stem-wind and stem-set, and will run 30 to 36 hours with each day's winding. It is guaranteed for one year by the manufacturers, just like all high-grade watches are, and the manufacturer agrees to keep it in repair or replace it if through fault of defect in the making, it fails to run steadily and regularly.

This watch is really a little beauty, and we are going to give one away to every boy and girl who will do a little favor for us.

TO MAKE IT EASY TO EARN THIS WATCH

We will send you ten of our Beautiful Sepia Photo-Engravures, size 11x16 Inches, without cost to you. These you give away to ten of your friends, who give you a six months' trial subscription to The Fruit-Grower and Farmer, at our special price of only 25 cents each.

These pictures are a beautiful work of art. They are exact reproductions of the famous paintings—and sell for upward to 50 cents each at your art store. When framed will add splendid beauty to the home.

Therefore, send for these ten beautiful Sepia Photo Engravures. They are very attractive and will add great strength to getting your subscriptions.

Send for these pictures today—they are free—then go call on your friends and neighbors and show them the pictures and a copy of The Fruit-Grower and Farmer. Impress upon them that you are out to earn one of these beautiful watches—and that their order will help you earn it. Explain to them that your folks read The Fruit-Grower and Farmer, every issue, and that they always derive a great deal of valuable information from it every issue. You will have your ten trial orders before you know it.

Send for these pictures, sample copies of The Fruit-Grower and Farmer, and subscription coupons. You are sure to earn this watch without a single cent of cost to you. So do not delay one minute to send us a postal card or letter, saying you want the pictures, samples, coupons. The watch is a little beauty and you will appreciate it. Remember, every boy and girl gets one of these watches, who sends us only ten trial subscription at 25 cents each. Send in your card or letter for the pictures, etc., today—sure.

The Fruit-Grower & Farmer, St. Joseph, Mo.

cially the white grapes are the last attacked. If grapes are cut off just as fast as they become eatable, it is quite possible to so far anticipate the birds that they will work little damage. This constitutes another objection to the Worden. While waiting for its unevenly colored bunches to show black all over, the birds single out the ripe berries and thus ruin the whole cluster. More damage was thus done to the Worden than to any other kind. Thin-skinned grapes have the call with the birds, and here again the Worden is weak, while on the other hand I find Campbell's Early, with its tough skin, more exempt.

Increasing Bushes By Cuttings

Now is the best time of year to increase the number of berry bushes and ornamental shrubs, for now is the time to make all kinds of hardwood and root cuttings, and to collect scions for grafting. Currants, gooseberries and all ornamental shrubs can be increased in numbers from cuttings of the year old canes made any time from late summer until spring. They are better when made before the cold weather of winter begins, as then they have time to callus before planting time, and this callusing is important in getting them to root.

Fall made cuttings may be planted at once and allowed to callus where they are planted, although it is generally better to tie the cuttings in a small bundle, butts all one way, and bury them where they will not freeze hard, in a well drained place out doors. They may also be packed in moist sand or sawdust and stored in a cool cellar, but when handled in this way it will be necessary to examine them from time to time to see that they are not too dry. After the cuttings have been made for a few weeks, they will be found to have formed a white, spongy mass of tissue over the cut surfaces. This is the callus, and is an effort on the part of the plant to heal the wound, and it is an indication that the twig is not entirely dormant, but that changes are taking place within it, even though those changes are not always visible. Hardwood cuttings root best when they are well callused, hence the reason for making such cuttings early, yet the roots do not come from the callus, but from internal tissue.

There is no particular length for hardwood cuttings. Currant canes may be cut as short as three inches. Grapes are generally made so that the cutting includes three joints. Blackberry root cuttings are sometimes made as short as an inch. The length to which the cutting is made is largely a matter of convenience. From six to ten inches is a good length for most hardwood cuttings, and will include several buds, even on long jointed canes, such as grapes produce. But in grape cuttings, very long jointed canes do not make as good cuttings as those which are short, stocky and zigzag. Currants and gooseberries and many ornamental shrubs are cut so that the cuttings will include from six to ten buds.

Where stock is scarce, as with some new vairety, or some especially desirable plant, single eye cuttings can be made, but they must have special care. Such cuttings are most satisfactory when started under glass, either in a hotbed or greenhouse and given bottom heat. Plant the cuttings so that they lay horizontally and cover with an inch of fine soil or sand. Be careful about watering these cuttings, as they are seriously damaged by too much moisture. After they have started nicely, transplant them to small pots or boxes, and let them become several inches high before setting them in the field. It is better to start single eye cuttings in mid-winter for the purpose of giving them as long a growing season as possible and gain size.

No matter what the kind of plant, make the lower cut just below a bud. Do not leave a stub at the lower end, and almost square across. The reason for this is that the food material stored within the twig is mostly concentrated at the joints, and when a wound is made there, the callus is more quicky formed, and there is a better chance for the cutting to make roots. Where the cuts are made some distance below a bud, as in the grape, the stub will frequently decay as far back as the bud, if it does not extend throughout the length of the entire cutting.

Scions for grafting may be collected at any time during the winter when the wood is not frozen, and in spring up to the time the buds begin to open. They are stored in the same way as hardwood cuttings, but with them, there is no need for observing care in making the lower cut immediately below a bud. With scions, it does not matter whether they callus or not, before they are inserted in the stock. Top grafting is a splendid way for changing the varieties in an orchard, or for producing two or more kinds of fruit on a door-yard tree. The scions may be collected now, but the grafting is not done until late winter or early spring.

The propagation of plants by means of cuttings or by grafting is interesting work. To let the small boys and girls do it is a splendid way of getting them interested in the farm work. It teaches close observation, and there is a peculiar fascination about watching the development of roots from hardwood cuttings that comes in no other way.

Missouri and Arkansas Ozarks

The Frisco Railway, of which Mr. A. Hilton is general passenger agent, with headquarters at St. Louis, Mo., has issued a booklet bearing the above title, which is bound to help the territory traversed by this line, and also those farmers of other states who want reliable information regarding the opportunities offered in the Ozark country.

The Ozark country is well known as a splendid fruit region, but a great many persons do not realize the varied nature of the fruit industry. Practically everything in the line of deciduous fruits can be grown in the Ozark country, at some place, and the fruit industry is now getting down to a solid basis, with the boom element eliminated.

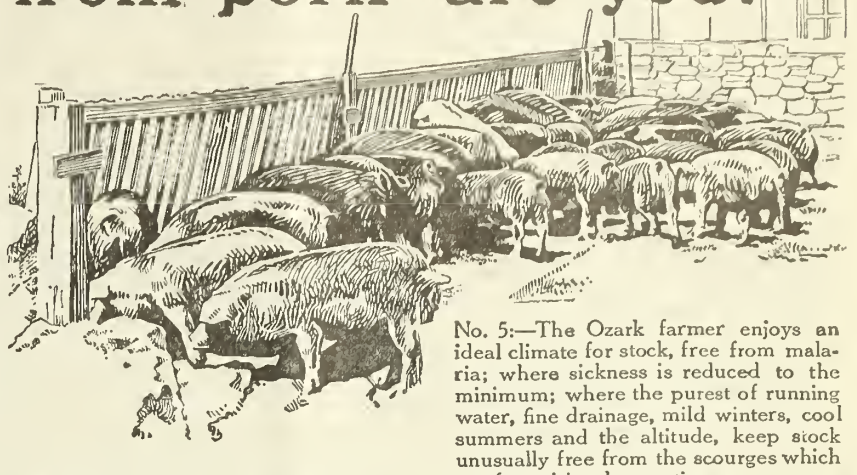
The booklet which has been issued by the Frisco Company is one of the best publications of the kind ever sent out. The leading article is by Walter Williams, dean of the College of Journalism, University of Missouri, and it is in his most pleasing style. This article deals with facts and sets forth the opportunities offered in the Ozark territory.

Just now there is much interest in this part of the country. Lands are cheap and respond readily to proper treatment. Cowpeas, clover, alfalfa and other legumes thrive, and the fertility of the soil can be increased very rapidly. Fruit culture, combined with stock raising or dairying, is proving very profitable to those who manage their work right, and an era of plenty has set in.

Lately The Fruit-Grower and Farmer has been giving much thought to the Ozark country, and some articles to be published in our January issue will surprise even those who know the country, for the Ozark fruit growers are now doing things that are really worth while. One of our articles will tell of an orchardist who has been very successful growing apples, and who introduced some new ideas in marketing during the season just past. The other article tells of the provision that has been made in Northwestern Arkansas to utilize low-grade apples. and thus keep them out of competition with good fruit on the markets of the country, and at the same time afford a source of revenue for the growers.

Truly, the Ozark country is coming to the front, and those who want to know more of what is going on may well send for the booket just issued by the Frisco Company. Write A. Hilton, G. P. A., St. Louis, Mo., for it, saying you do so at the suggestion of The Fruit-Grower and Farmer, and this booklet will be sent you free. It will be found interesting and helpful.

The Ozark farmer is making 5c a lb. profit from pork—are you?



THERE are five reasons why Ozark farmers get 5 cents a pound profit from pork—and they are the same reasons why stock raising of any kind in the Ozarks is so much more profitable than in other sections.

No. 1:—The Ozark farmer has good grazing from April 1st to January 1st—nine full months. Only 3 months of winter (mild at that)—no long expensive winter feeding and very little shelter needed.

No. 2:—The Ozark farmer can produce pork at 2 to 2½ cents per pound on cowpeas, alfalfa, peanuts, etc., which grow so well on these Ozark soils—only a little corn needed a few weeks before marketing, to make the flesh firm.

No. 3:—The Ozark farmer's city markets are so close by, that the net price offered him at his local market is greater than would be offered where the hogs would have to be shipped a greater distance.

No. 4:—The Ozark farmer is offered the highest prices prevailing anywhere—by the dealers in Kansas City, St. Louis and Memphis (price now around 8 cents).

No. 5:—The Ozark farmer enjoys an ideal climate for stock, free from malaria; where sickness is reduced to the minimum; where the purest of running water, fine drainage, mild winters, cool summers and the altitude, keep stock unusually free from the scourges which so often visit other sections.

James F. Crone, near Mountain Grove, spent $32 for hogs a little more than a year ago, and from that investment has sold pork to the value of more than $600; besides having meat for his family and 42 head on hand.

And think of the advantage in the Ozarks for dairying! Results speak louder than anything: E. T. Shelpman of Greene County, sold $1232 worth of cream and butter in a year from 12 cows; T. P. Emmons of Oregon County, sold $2,054 worth of milk from 20 cows; G. F. Holloway, who makes $10 per month per cow (and gets 65 bushels of corn per acre), says: "I find this country the best for farming and dairying, and I have been in nearly every State in the Union."

Even if you had to pay the same price for land in the Ozarks that is asked elsewhere, you could make greater returns from your investment there; but realize that right now you can get good land at $12 to $25 per acre. All in all, it's a proposition that ought to make any man want to *know more* about it now.

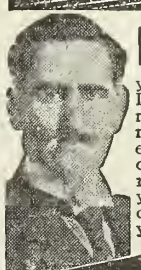
A free book for you!

It's not the kind you can pick up anywhere. Double sized pages, 75 actual photo pictures of farms—some in full color. Written by a man who knows farming. Takes up the Ozark sections, county by county, and describes the farming conditions there. Also tells actual experiences of Ozark farmers. I haven't many copies of this book on hand; please drop me a postal to-day for your free copy.

FRISCO LINES

A. HILTON, General Passenger Agent, 1511 Frisco Building, St. Louis, Mo.

A STREAK OF GOLD



FREE "The greatest dollar buying piece of literature ever penned by man." So write my farmer friends who have read my latest book. Have you read it? If you haven't you are missing a *golden treat.* Yes, I mean it, for "A Streak of Gold" will show you how you can coin real *gold dollars* from your manure pile. It's written from the net results of America's greatest soil experts—and the experience of thousands of farmers. Mail me a postal or letter today for *your* copy—*free* and get my offer for you to prove how you can have bigger crops next year.

Absolutely Save $25 to $50

on a Galloway Spreader—No spreader in the world can match quality with a Galloway equipped with Mandt's New Gear.

I'll send it anywhere to stand on its *pure merit* alone—give you 30 to 90 days *free trial*—a big guarantee and back my entire proposition with a $25000 bank bond. That's proof of quality—and my factory to you price saves you dealers and jobbers profits. Put your letter or postal in the Mail *NOW.* Ask for free book and Special 1913 proposition and price. WM. GALLOWAY, Pres.

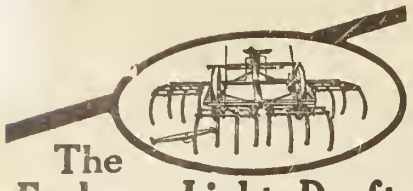
Wm. Galloway Co., 1039 CH, Galloway Sta., Waterloo, Ia.

Write Me Tonight

Free Trial 30 Days

We carry stocks of all our machines at CHICAGO. KANSAS CITY. COUNCIL BLUFFS and MINNEAPOLIS—insuring Prompt Shipment.

Potatoes for hog feed must be cooked, using as little water as possible and fed with a small amount of grain.



The Forkner Light Draft Harrow

Hangs low and has great extension—you work right up to trees without disturbing boughs or fruit. With it you can cultivate 20 to 30 acres a day with one team. Low-priced, but built for long, hard service.

THIS BOOK FREE
Modern Orchard Tillage, written by a practical orchardist, chock-full of valuable information. Write for it.

Light Draft Harrow Company
607 E. Nevada St., Marshalltown, Iowa

In writing please mention The Fruit-Grower and Farmer.

FACTS ABOUT FLORIDA

Our state showed an increase of 42% in population in the last U. S. census. If the present rush continues it will nearly double in the next 10 years. Land values are increasing in proportion. An all-the-year climate that is best in the U. S. Lowest death rate of any state. No competition for winter crops. If you are a trucker, fruit grower, stock raiser, poultryman, business man, we have openings for all. Send for booklets giving actual Facts. Address Dept. Q.

FLORIDA EAST COAST RAILWAY
J. E. Ingraham, V-P. St. Augustine, Fla.
or Louis Larson, Northwestern Agent
109 W. Adams Street (4) Chicago, Ill.

In writing please mention The Fruit-Grower and Farmer.

APPLE, PEACH AND CHERRY TREES

Shade Trees, Flowering Shrubs, Apple Seedling, Pear Seedling, Apple and Pear Grafts, Catalpa Speciosa. Write for prices.

J. H. SKINNER & CO.,
North Topeka, - - Kansas

In writing please mention The Fruit-Grower and Farmer.

Hansen's "Protector"
No. 326—Heavyweight for hard service on the farm, yet soft, pliable and comfortable.

Do You Want To Try On Our Gloves?

Send for the free book which gives all sizes and styles and select the glove that you think was *made for you*. Try them on and see how easy they feel—how they leave your fingers limber—your knuckles free—how they seem exactly *made for you*.

Hansen's Gloves

prove that rough *work* on the farm does not mean rough *hands* on the *farmer*. Send coupon or postal for the free book describing the "Glad Hand" and the "Protector" work Gauntlets, the Thresherman's Gauntlet, the "Dan Patch" Driving Glove, Auto Gauntlets, Gloves for Motor Cycling, and a hundred other styles.

On Approval Send for a pair, try them on, and if the fit isn't the *finest*—the leather and workmanship the best, you may return them and get your money back. Or ask your dealer.

O. C. HANSEN MFG. CO.,
118 Detroit St., Milwaukee, Wis.

Mail Coupon For Glove Book FREE

FREE COUPON

O. C. Hansen Mfg. Co., 118 Detroit St., Milwaukee, Wis.
You may send me Free and postpaid your book showing Hansen's Gloves. I am most interested in the styles for the following purpose.
.....
Mention above what kind of work, driving or sport
Name .....
Town .....
R. F. D. ..... State .....

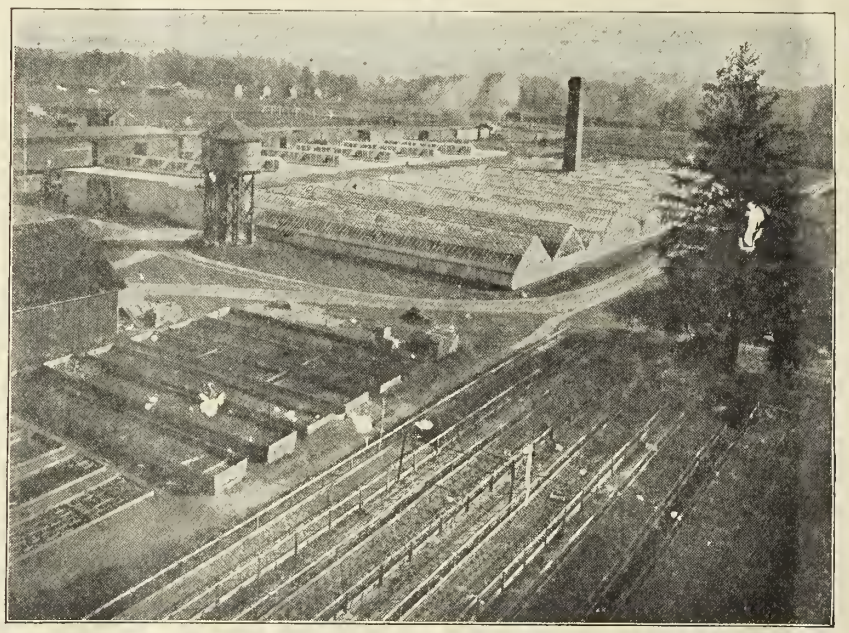
Great American Nurseries

(Continued from page 9.)

received by the company last year, and it is an immense job to handle all of these orders. The packing is done mostly by Italian and Hungarian laborers, under American foremen. Mr. George likes these laborers very well. In speaking of them, he said: "The Italians, especially, are the best packers we have ever employed. Many of them have been with us twenty years or more."

The main packing shed is 400 feet long and 150 feet wide. Another room that is used mostly for storage is 220 by 100 feet, and the rose cellar is 100 by 50 feet. In the main packing season, the average shipment is about seven cars a day, and frequently more are shipped. One of the loading sheds is arranged so cars may be run into it, the doors of the shed closed, and the loading then can be done no matter how cold it is outside.

Packing material is delivered in July and August. All lumber is sawed to proper lengths, so all that it is necessary for the laborers to do is to put the crates together. Twelve cars of lumber were used last year; the cars holding an average of 40,000 feet each. About twenty cars of packing material were used also.



A PART OF THE GREENHOUSE RANGE AT PAINESVILLE NURSERIES.

Most of this material is excelsior, but considerable shingle tow, which is another name for the coarse sawdust that comes from shingle mills, is used. Two cars of Sphagnum moss from Wisconsin are used every year. About 130 acres of oats and rye were planted this year to produce material for packing purposes.

The shipping season in the fall begins September 15th, and runs until it is stopped by the cold weather, which usually is about November 15th. The spring season, when most of the retail orders are shipped, begins about March 1st, and lasts until May 15th. This is the season the plant is run to its full capacity.

Most of the laborers on this nursery are foreigners. All of the work is paid for by the day. There is no piece work. Mr. George believes men will not do the best work if they are paid for just the amount of work they turn out, for if they are, there is a constant tendency for them to hurry along and slight the work. They are paid $1.75 a day, without board. The foremen are paid from $1.75 to $3.00 a day, without board.

Most of the buds used in this nursery are taken from nursery rows. In speaking of this, Mr. George said: "Most of our buds come from nursery rows, but we make an effort to renew our stock every little while in most lines. Take, for example, with peaches, we get in fresh buds every little while from bearing trees, to renew the stock we have, so we will know it is all right."

The Storrs & Harrison Nursery is an immense establishment that is growing fine stock. The company has a trade that is keenly alive to the quality of the product, and the fact that the business is rapidly increasing shows what the customers think of the quality of the products and the business integrity of the farm.

Change in Implement Firm.

The Bateman Mfg. Co. of Grenloch, N. J., makers of the well known and popular line of garden and farm tools, under the trade name of "Iron Age," have recently purchased the Wilkinson Plough Co., Limited, and the Toronto Pressed Steel Co., both of Toronto, Canada. These firms, in addition to making their former lines, will begin the manufacture of "Iron Age" farm machinery, and the new firm known as the Bateman-Wilkinson Co., Limited.

Canned Sweet Potatoes.

The possibilities of the canning business as an adjunct to farming is being realized more and more each year. We ordinarily think of tomatoes when a canning factory is mentioned. But practically all farm produce, from apples to chickens, may be profitably canned. In the Southern states, the sweet potato is canned in enormous quantities. The Ware-Progress Orchard Co., near Americus, Ga., is busy canning sweet potatoes. This plant has a daily capacity of 600 cases of twenty-four three-pound cans. Canned sweet potatoes form an important part of the grocer's stock, and the demand is continually increasing.

Use Cheap Cuts of Meat.

Many persons suppose the meat on a soup bone isn't worth serving, after the soup has been made. This is a big mistake. It may not be quite so palatable, because the flavor and much of the fat have disappeared, but the nutrition is there almost as generously as before the water touched the meat.

The trouble with soup meat, too often, is the slip-shod way in which many women serve it. Properly cut and trimmed with a bit of garnishing, and a sauce that has character, say tomato or tabasco, the soup meat is too good to waste.

Many cheap cuts of meat are cheap, not because of the place they occupied on the animal, but because of the connective tissue. The only way to soften this issue and make it tender and easy to digest is to cook it properly.

Subscription expired? Don't miss big special issues. Renew today.

ORENCO TREES
ONE YEAR TOPS ON THREE YEAR ROOTS

Human Effort; Human Care; A High Ideal

coupled with Oregon's fertile soil and unexcelled climatic conditions—combine in making

ORENCO TREES

unexcelled in hardiness, growth, root-system, reliability, early productiveness and altogether the most economical trees for you to plant. Don't take somebody else's theory to the contrary—let us give you sound, reasonable, acceptable evidence. Wish you could see our one and two-year-old apples in such varieties as

Jonathan	Rome Beauty
Gano	McIntosh Reds
Wealthy	Winesap
Gravenstein	Winter Banana
Etc.	Etc.

We'd like you to investigate Orenco Trees. May we send you our freely illustrated booklet, "About Orenco"? Don't speculate any more in fruit trees, but invest in Orenco's Standard Trees. For information address "Sales Dept."

OREGON NURSERY COMPANY
The 1200 Acre Nursery
ORENCO OREGON

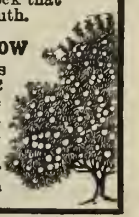
In writing please mention The Fruit-Grower and Farmer.

Quality, Not Price, Sells Berckmans' Fruit Trees

Old customers come, buy and then ask the price. They know Berckmans' trees make good. Back of them are half a century of experience, good soil, clear cultivation, and a climate that produces hardy, vigorous stock that succeeds both North and South.

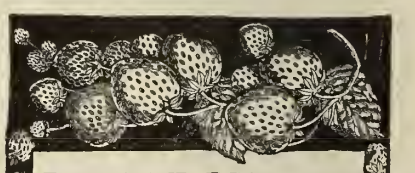
Get Our Catalog Now

Our big catalog tells *when, how and what to plant*, and lists the best fruit and ornamental shrubs. It's valuable—free.



P. J. Berckmans Company, Inc.
Box 1070F Augusta, Georgia

In writing please mention The Fruit-Grower and Farmer.



BEFORE BUYING

small fruit plants, Mr. Fruit Grower, YOU should send for a copy of

Allen's 1913 Catalog

Describes the famous ALLEN STOCK of Strawberries, Blackberries, Raspberries, Small Fruit, Asparagus, Shrubs and Privet. Standard varieties. Any quantity. Shipments guaranteed vigorous and true to name. In business 28 years. Write for catalogue TODAY. Allen's plants make better crops; bigger profits.

W. F. ALLEN
52 Market St. Salisbury, Md.

Plant Pomeroy English Walnut Trees

for profit—the hardy kind, have withstood 35 severe winters of western New York. Write for booklet

Norman Pomeroy
Lockport, N. Y.

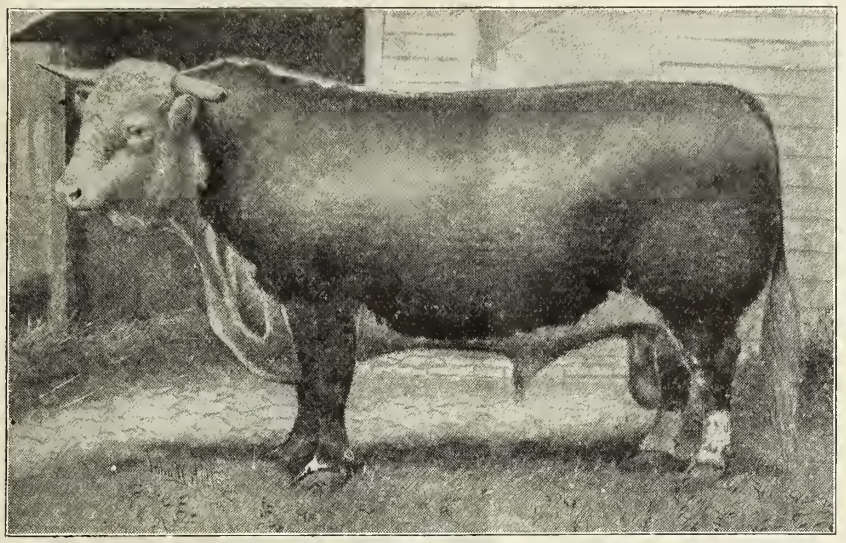
A Successful General Farm in Missouri

(Continued from page 5.)

circulate through them well. These barns are constructed with narrow doors, usually about a foot wide, clear to the top, to aid in the ventilation.

The leaves are stripped from the stems as soon as the plants have dried thoroughly. There are from five to seven grades of tobacco on every stem, and there usually is one man to every grade. One man usually can't divide all the leaves into the grades, and do the work accurately and rapidly.

The product is generally sold in the winter, about as soon as it is graded. The growers are not always satisfied with the prices they receive for their



HE SOLD FOR $5,050 AT THE AMERICAN ROYAL.

tobacco. If the prices were higher, it is probable that most of the country in that section would be planted to the crop. While even at present prices, which are low, a high acre price may be obtained for the crop, the labor cost is high, and the interest on the money and the depreciation on the barns is considerable. But, taken altogether, it is a profitable crop, and the growers who are handling the proposition intelligently are making good money.

Legumes Are Grown.

Two hundred and fifty acres of this farm can be cultivated. This year 55 acres were in corn, 45 in wheat and 40 in oats. The rest of the cultivated ground was in alfalfa, clover and tame grasses. Alfalfa and clover always have been important crops on this farm. The loess soils contain an abundance of potash and lime, and the plants do well. There is a need for considerable legume hay, and this has made these crops profitable. Then, Mr. Gabbert has realized the need of these crops in maintaining fertility.

A large orchard is handled, too. This year, the crop was not large, but usually it has been profitable. Of course, this land is well adapted to apple production, for it is similar to much of the land along the Missouri River which produces excellent apple crops.

Hogs are grown extensively, to follow after cattle, but this year cholera reduced the herd from 56 to five head. Most of the hogs in that section died from this disease. In speaking of this, Mr. Gabbert said: "Hogs have been profitable for us, but I have come to expect something of this kind every little while. It won't do to depend solely on this line as the money crop, for you have to count on a certain percentage of loss from disease, and sometimes, as this year, practically all the herd dies."

Poland-China hogs are kept. They are pastured on a 30-acre alfalfa field, in the summer. Hay is harvested from this field just the same as if the hogs were not being pastured on it. "Do you consider that the quality of the hay is injured by the hogs being pastured on it?" Mr. Gabbert was asked. "No, I do not," was his reply. "I know it is alleged, by some farmers, that the quality is injured, and this may be the case where the crop is pastured too heavily, but it is not the case here. I frequently will have one hundred hogs on the field, and sometimes more, but I don't believe the quality of the hay is injured. Of course, the yield is reduced somewhat. The new, fresh growth that spring up, after the crop has been cut, is very valuable as a feed for the hogs."

Two litters a year are raised. The litters average about seven; some years it is a little less. The hogs are fed a small grain ration while on the alfalfa, but the ration usually is light. They are fed out and sold mostly in the fall and winter.

A Hydraulic Ram Is Used.

This farm has about as strong a spring as usually is found. It never has gone dry, and there always is a big waste flow that can't be used. A brick lined compartment has been built where the water flows out of the ground, and the flow is carried by pipes to lower tanks, where the stock is watered. A hydraulic ram has been installed, which forces water into the house, and anywhere else it is needed.

In speaking of the efficiency of the hydraulic ram, Mr. Gabbert said: "I am well pleased with the work this machine does. It was cheap for the first cost and, of course, the expense of operation is nothing. I think this machine profitably could be used on many farms where it is not now installed. You can get these rams for a great variety of purposes. They come in many sizes, with a corresponding range of prices, and they are efficient."

Four hands are employed on this farm the year around, in addition to the labor of Mr. Gabbert and his son. In the rush season, several more hands are employed. The usual wages in the rush season for extra hands is $2 a day, without board. Wages are considerably less when the farm work is not rushing. The regular hands all belong to one family, and they live in a house on the farm. In addition to the house and wages they get a garden spot, wood, apples and milk.

Mr. Gabbert has been an efficient student of farming all his life. He has been a subscriber to The Fruit-Grower and Farmer practically from its beginning. He has built up a splendid farm and a fine business that is making profits worth while. His is a fine farm, in a remarkably fine section of the West.

CHILDREN'S PARTY AT THE GABBERT HOME.

Classified Advertising in The Fruit-Grower and Farmer Brings the Business

Every season hundreds of our readers use the classified department of The Fruit-Grower and Farmer to advertise poultry, berry plants, livestock, farm lands, etc., and they find that this sort of advertising is very cheap and very effective.

You can profitably use this department to advertise anything you have to sell which you believe is likely to be wanted by the best class of farmers in America.

This advertising will put you in touch with more than 100,000 of them every month.

Rate is 5 cents per word each insertion; cash with order; no advertisements of less than twenty words accepted. Count the words in your advertisement, and send it in, with remittance, so you can catch our great January number. We can help you find a market for anything you have to sell.

The Fruit-Grower and Farmer

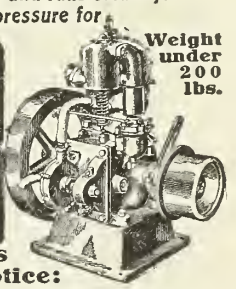
ST. JOSEPH, MO.

FARM CUSHMAN

Power to Run Your Spraying Machines

A powerful little 4 h. p. engine. It is very light and runs steadily. Will hold high pressure for spraying.

Weight under 200 lbs.



Original Binder Engine

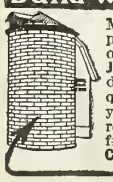
Fruit Growers Take Notice:

High power, high speed and high pressure put this all-purpose farm engine in a class by itself. Take it wherever you have work—it fits in anywhere. *The original binder engine—original sprayer engine—the only Cushman engine.* Accept no imitations. It delivers 1 to 5 full h. p. Easy speed changes. Consumes fuel according to "load." Write for book and state your needs.

CUSHMAN MOTOR WORKS
2095 N St., Lincoln, Neb.

In writing please mention The Fruit-Grower and Farmer

Build with CONCRETE BLOCKS



Make your own blocks and build fireproof, permanent buildings with your own hands, by using the **HERCULES JR. CONCRETE BLOCK MACHINE**, designed especially for farm use. Requires no experience to operate, saves you money on whatever you build or repair. Write for full information and free booklet. **Century Cement Machine Co., 210 Mill St., Rochester, New York.**

In writing please mention The Fruit-Grower and Farmer.

With Our Home Folks

Conducted by Mrs. Ruth Motherby. Address all Communications to Home Editor The Fruit-Grower and Farmer

Christmas Decorations.

This letter is to be a plea for Christmas decoration of the home. It would be a strong plea, if my pen could adequately express my sentiments, for I stand more firmly for holiday decoration than most people do for holiday feasts. If I had to choose between Christmas decorations and a Christmas dinner, I'd vote for the decorations every time. They even rank ahead of Christmas gifts, in my opinion. It is fun to do the decorating, and when it is done, everyone who comes into the house can enjoy it; besides, the pleasure can be made to last a long time, for no one thinks of tearing down Christmas decorations until after New Year.

Once, when helping me to decorate, my little niece said, "Auntie, don't you pity a house that has never been dressed up?" And I was glad to be able to assure her that I really did! I was glad that she thought of homes as something possessing individuality, and that I could sympathize with her in that thought. There are homes that have grown old without ever experiencing anything but the utility side of life, just as there are people who never allow themselves to forget the most sordid side of the daily grind. If your house has never been treated to a season of gala attire, give it a treat this year; dress it up for the Christmas holidays, and see what pleasure you'll get out of it.

I hope you potted some dark red geraniums last fall, in time to have plenty of blossoms for Christmas. They are so effective and so inexpensive. And that reminds me of one of the prettiest table decorations I ever devised. A potted fir tree was placed in the center of the dining table. It was perfectly formed, and stood two feet high, pot and all. I tied bunches of holly berries to the branches to give color. I used the holly that is for sale by most milliners. It costs five cents a bunch, when purchased in small quantities, but can be secured much cheaper than that when bought by the box. It should be packed away after the holidays, and kept until another Christmas, and is thus really inexpensive as a decoration, for it will last for years and is always suited to the season. The first cost seems high, but just make up your mind, this once, to be extravagant, get a goodly supply of it, and see if you ever regret the expenditure! I don't believe you ever will.

But to return to my table decoration. Tiny dark red wax candles were fastened to the branches of the little tree, to be lighted just as the guests were summoned to dinner. Of course they won't burn very long, but they bring out many exclamations of pleasure, and prevent the embarrassing silence that sometimes precedes a formal dinner. The top of the tree was crowned with a funny little Santa Claus. The flower pot containing the tree was covered with dark green crepe paper. On the table, encircling the flower pot, I placed a large wreath of ground pine, fully eighteen inches in diameter, and as thick through as a man's arm. Bunches of dark red geraniums were stuck into this wreath at intervals; and some beautiful bunches of mistletoe, placed flat on the table at either end, finished the centerpiece.

There were to be twelve people to dinner, so I provided twelve little souvenirs—not one of which cost more than ten cents. They were concealed under the wreath. Long Christmas ribbons, bearing a holly design, were attached to the souvenirs and stretched to each plate, to be pulled when the nuts and fruit were served.

Pretty Christmas cards were used as place cards, adding greatly to the festive appearance of the table. At each plate was a home-made dish for salted nuts. They were of cardboard, covered with leaves cut from tissue paper, and a sprig of the milliner's holly was fastened to each.

The dining room was decorated with long strings of ground pine looped between Christmas bells of red paper. These bells may be purchased, and are collapsible, so that they can be carefully packed away, and used again and again. But very pretty Christmas bells may be made at home, more especially when one lives where Christmas greenery may be had for the gathering. Use stove-pipe wires for the foundation and cover it with paper flowers, or real flowers if you have them. Use ground pine, or crepe-paper vines, or cover them with red tissue paper, as you please.

Poinsettias are the ideal flower for Christmas decorations, and they may be made of crepe paper to look even better than the natural blossom! You can get patterns and directions for making at most large stores where the paper is sold; but do put your order in early, especially if you order by mail, or you may not get your supply in time to make your blossoms. The fun of decorating is in taking plenty of time to get ready and never feeling hurried. The making of paper flowers is a really delightful occupation for a winter evening, and more especially when you have young people to entertain.

For high places about your room you can make bunches of red berries that work in most effectively. Take any kind of cloth of the right shade, and a little cotton for stuffing. Cut the cloth into little circles, put in a tiny bunch of the cotton, and gather it into a ball. Fasten these balls to a length of milliner's wire, which can be bought by the spool, and then put on small green leaves of crepe paper so that the berries will show through the green. You will be surprised to see how effective these berries are, when wired to a long vine of the green leaves.

Little cupids cut from dark red blotting paper also help greatly in decorating a room. You can buy them, if you like, and they will last season after season; but if there are young people in the family that will spend some happy evenings cutting them out. Buy a few in different sizes to be used as patterns. Tie a thread around them and hang them wherever they can have a green background. The thread should be long enough to allow the cupids to sway when a draught strikes them, which gives them an appearance of flying.

Little Christmas trees, trimmed with gold and silver tinsel, may be placed about the room, giving a gay effect with really little work. You can buy these trees, all potted, for a quarter apiece, at certain seasons; but if you live where they grow you will enjoy taking them up and potting them for yourself. And they make your house look pretty and smell piney all winter, so that they are really a good investment when you have to buy them.

I never fuss very much over a Christmas dinner. I want enough, but I don't believe in eating until one is so uncomfortable that the remainder of the day is a torture. And I have found that when I have my table and rooms prettily decorated, the dinner seems very fine when it really is not at all elaborate.

RUTH MOTHERBY.

Christmas in the Country.

I have often wished I lived in the country, where one could know all one's neighbors, and enjoy the nice informal social gatherings that seem quite impossible in the city, where everyone waits to be invited before venturing into a neighbor's home. But, since reading a few of the farm papers that my brother editor gets with his "exchanges," I've about come to the conclusion that farmer folks have forgotten how to enjoy themselves. They have drifted away from the informal good times of half a century ago, and as yet have none of the amusements of city life, so that they are really worse off than we who are hemmed in by laws and customs of social usage. That is all wrong. Everyone needs a certain amount of relaxation, and also a certain amount of excitement, and he who fails to get it need not join a century club, for he couldn't possibly live to be 100 years old, no matter how good other conditions might be.

I once heard of a party of young married people living in a small town who decided to celebrate Christmas for an entire week. There were twelve couples, so two couples joined forces for each day's celebration. It was de-

FORTY DOLLARS at $5 a month

Introducing the first and only musical instrument of its type under $75.

The "Regal" a new Columbia

On Three Days' FREE TRIAL

AMONG the twenty-six models of Columbia Graphophones and Grafonolas between $17.50 and $250, we present this instrument in this prominence because of its remarkable **tone quality** at the price.

Pass over for a while its independent and self-contained completeness—unapproachable under $75; judge it by its **tone.**

Disregard its exclusively Columbia tone-control shutters long enough to judge it by its **tone.**

Have the nearest Columbia dealer place your favorite selection on the "Regal" and let you hear it. There's a **tone** test for you—and a treat, too.

Judge it by its tone—and then satisfy yourself that the "Regal" is a perfect musical instrument and a perfect piece of furniture as well; that its joiner-work is honest and its finish right; **then** compare the instrument with your forty dollars and see which will give more pleasure, to more people, for the longer time. Here is an instrument that holds at your command all the music of the great orchestras and bands, all the songs that liven the stages of all the theaters, and the voices of all the world's great opera artists who have ever made disc records—**without one exception.**

Go to your Columbia dealer—we'll tell you his name if you do not know. Ask him to send the "Regal" with an outfit of records to your home on three days' free trial. Catalogues on request.

Columbia Phonograph Co. Gen'l

Box 367, Tribune Building, New York

cided, in a meeting of the whole, which couples should entertain, and at which homes, on the different days; but the nature of the different entertainments was kept a profound secret. They were a tired set of merry-makers at the close of that week, but they all declared that they had never had so much fun in their lives. I was told this by one of the ladies who took part, and who moved away from the neighborhood soon afterward. She said she had wished many times that she could find another circle of friends who would join her in a week's celebration during the holiday season. Doubtless she could if only she were a good leader. I think a lack of leaders is responsible for social dullness more than any other one thing. And there are many people who could inspire others to do things, if they only had imagination enough to know what they would like them to do! So I tell this, hoping it may inspire some natural organizer to get her neighbors together for the purpose of enjoying a real good old-fashioned Christmas celebration.

I remember a Christmas tree I helped trim, years ago, in a country school house where I was teaching. There were no costly gifts on that tree, but everyone had such a jolly time that that Christmas celebration is among my brightest of memory pictures today. I wish I could live that experience all over again. I love country young people so much better than their pampered city cousins, who have so much done for them that they never know how to have a really good time!

Dear dwellers in the country, don't let yourselves grow away from the simple pleasures. Don't forget how to have good times together. The holiday season is a fine time to start the merrymaking; do something this year, and then let us world-weary city people know about it. There is some fun in reading of jolly good times, even if we can't take part in them.

JESSAMINE LOWELL.

The Economy Club.

When our last meeting was called to order, Poppy of California was first to take the floor.

"I can't wait to tell it," she said gleefully, "because I didn't do it myself! Have you ever thought, girls, how much easier it is to give very economical items when some one else is responsible for them? Now if I had done what I saw my neighbor do, I'd never have had the courage to confess it; yet the result was good. She had a pint of broken ginger cookies that had been collecting, and which I should have thrown away. But she crumbed, them fine, then added three tablespoonsful of thick, sour cream, one-third teaspoonful each of ginger and saleratus, one-half cupful of sugar, one egg and the yolk of another, and beat it until it formed a smooth batter. Then she poured it into jelly tins and baked it quickly, frosting it as it came from the oven, and when the top layer was frosted she set the cake in the oven for a few seconds to harden the frosting. The cake was perfectly delicious; it does not dry quickly and is easily made, besides being quite economical. She butters the plate on which it is put very slightly, as it is so moist it might stick if she did not. Sour milk and a little butter might be used instead of the sour cream, I suppose, but she never tried it and couldn't say it would be as good."

"My mother taught me such a nice way to make toast that I wish to pass it on for the benefit of others who, like myself, never manage to cut just as much bread as will be eaten, and no more."

The speaker was Cordelia, a lady who declares that she'd rather know ten little economies than one great big one, and so is heartily enthusiastic over this club.

"While the bread is toasting," she said, "work a heaping tablespoonful of flour into two parts of butter, add a pint of water and let it boil. Season with salt and pepper and pour over the toasted bread, which has been dipped in hot water. It is both economical and splendid."

"I economize in strength," said Redwing, "by using red table cloths instead of white ones for all ordinary occasions. I get a good quality, and see that they are carefully laundered, and we get along with them very nicely. I never wash table linen with the rest of the laundry, and I never use soap or hot water for the red table linen. Yes, I have napkins to match. I dissolve borax in tepid water and use that for both washing and rinsing. After rinsing well, dip into another water to which a little dissolved glue has been added, and dry in the shade. I never allow my colored table linen to become so soiled that it cannot be rubbed clean between the hands. Rubbing on a board roughens the threads, and helps make it look old. It is so little trouble to wash it in the dishpan after breakfast, and iron it while getting dinner."

Mumsey got up and began to whirl around, much to our astonishment.

"What is the matter?" we anxiously inquired.

"I want you to see this dress," she said.

She was neatly dressed in a good black cashmere, but we couldn't see anything particularly interesting about it, and told her so.

"I worked in this gown nearly all winter," she said, "and before I came here, I have made money by exhibiting it."

"Going to make more money now?" we asked.

"No; I'm not going to tell you all about it. My neighbors began to notice that I always wore the same gown, and that it always looked nice and fresh, so they began to inquire how I kept it so. Then I told them I had a preparation, which I prepared myself and which was for sale, with which I cleaned off the spots as fast as they appeared. I kept it right at hand, and it wasn't the least bit of trouble. Then they purchased a bottle of it, and as they generally came for more, I have done quite a business. The recipe is very simple. Boil one ounce of camphor and two ounces of borax until thoroughly dissolved, and add enough water to make two quarts. When it is cold, add one pint of alcohol. Simple enough, isn't it, but it is fine for cleansing black goods, lace included." MADAME SECRETARY.

Country Co-operation.

Have the readers of this department heard of "The Right Relationship League?" It has its headquarters in Minneapolis, but its influence is felt among farmers throughout Minnesota, Wisconsin and the Dakotas. It should be felt by all the farmers in all the United States. This league teaches the practical value of co-operation. It teaches the farmer how to make one dollar buy the necessities of life for which most people are obliged to pay a dollar and ten cents. When you get a ten cent dividend on every dollar expended, you're making money. This is done—actually done—through the co-operative warehouse, which gets the best prices for your produce, and the co-operative stores which sell you your goods minus the profits of the middleman. Have you such a warehouse and such a store in your community? If not, you are depriving yourself of one of your greatest privileges, for these are the stepping stones to that organization of country life which is destined to be the greatest factor in the back-to-the-farm movement.

When the community has learned the value of co-operation as a means of bringing to the farmer a fair price for his produce, in money as well as other necessities, it will then have leisure to take up other social problems, and the gravest problems of farm life will be solved.

In Wisconsin there are co-operative associations for shipping livestock; co-operative warehouses for all sorts of produce; and co-operative insurance companies, not to mention the fine line of co-operative stores; and most of these enterprises are paying dividends. The next step will be to devise means of securing necessary help—for both the field and the house. The great idea for the farmer is, as one writer put it, "to learn to do team work," and nowhere can this be learned so effectively as in the co-operative enterprises.

At present men are ahead of women in securing such valuable aid to their branch of the home industry; but women are to blame in that they sit back and wait for men to solve their problems for them. They must "get busy" and solve a few for themselves. Why shouldn't they begin by working out the help problem?

Most of you know of the traveling

Will there be a Victrola in your home this Christmas?

$15
$25
$40
$50

$75
$100
$150
$200

You can search the whole world over and not find another single thing that will bring so much pleasure to every member of the family.

Any Victor dealer in any city in the world will gladly place a Victor-Victrola in your home on easy terms so that you can enjoy it while you are paying for it. Write to us for catalogs.

Victor Talking Machine Co., Camden, N. J.

Berliner Gramophone Co., Montreal, Canadian Distributors

Always use Victor Machines with Victor Records and Victor Needles—*the combination*. There is no other way to get the unequaled Victor tone.

Victor Steel Needles, 6 cents per 100. Victor Fibre Needles, 50 cents per 100 (can be repointed and used eight times).

New Victor Records are on sale at all dealers on the 28th of each month.

RIFE RAMS

pump more water than any other ram for equal amount of power water—the most efficient device made for pumping water by water.

Costs little to install—nothing to operate. Raise water 30 feet for every foot of fall. Will supply pneumatic tanks against 100-lb. pressure. Pump automatically day and night, winter and summer. Fully guaranteed.

If there is a stream, pond or spring within a mile, write for plans, book and trial offer, FREE.

RIFE ENGINE CO.
2521 Trinity Bldg., New York

Why Not Have Best Light?

Steel Mantle Burners. Odorless. Smokeless. Give 3 times the light of ordinary kind. Guaranteed. Buy from your dealer or send 25c to us. Good Agents Wanted Everywhere.
THE STEEL MANTLE LIGHT CO.
323 Huron Street Toledo, Ohio.

SALESMEN WANTED

Who Can Furnish Team and Wagon

to sell on commission to farmers, the best and largest line of Medicines, Stock Foods, Flavoring Extracts and Toilet Preparations on the market, and under the most liberal contract—salesmen making from $100 to $300 per month clear of expense. We start you in a paying business without your investing one dollar, if you can furnish a team and wagon. Write us today. Address
EDGAR ROBERTS MANUFACTURING CO.,
2196 Walnut Street. St. Louis, Mo.

SALESMEN Have You a Buggy?

We have a wonderful money-maker for live men—but you must have a rig to handle it. Big sales—big profits—good year 'round. Pleasant, easy, healthy business—just drive around and take orders—best class of farmers and town folks buy—every home needs our goods. Salesmen, Here's REAL CHANCE to cash in on that horse and buggy; $50.00 a week and up. Find out—get our big special offer—Now! Write today for complete facts free. Address
S. D. KRETZER, 2144 DeKalb St., St. Louis, Mo.

ADLER

The Piano Man Says:

Your Own Time to Pay

Take 2 to 3 Years

and Not One Cent In Advance

My 30-Day Free Trial, No Money Down Offer Is Sweeping the Country Like Wildfire—All Records Broken—Most Successful Nation-Wide Sale of High Grade Pianos Ever Known—My Original Adler Plan Hits the Middleman and Banishes All Competition

I have now made it possible for every home to enjoy the delights of a pure toned *Celebrated Adler Piano* of exquisitely handsome design, and construction so durable that it is *guaranteed for 25 years.* Investigate and find out just why this guarantee is possible.

I Will Save You Half

Every *Adler Piano* is shipped direct from the great $500,000 Adler Factory to the home at lowest wholesale factory prices. I save you *half* of your piano money because the *Adler Plan Hits the Middleman! It absolutely wipes out* Jobbers, Dealers, Agents and Salesmen and gives *you* their profits. *No Salesmen! No Collectors!*

My Celebrated ADLER PIANO

—like my *Adler* Organ—over 83,000 of which are now in the homes of the people—must sell itself on its own merits, after a

FREE 30 Day Trial—No Money Down

Let me ship a *Celebrated Adler Piano* to your home *at my risk.* Play on it 30 days—if it does not prove all I claim for it, return the Piano to me. I will pay freight both ways and your trial costs you nothing.

If perfectly satisfied, keep it and start small payments. At the end of a year, if the *"Adler"* fails to make good on every point I claim for it, I will refund every dollar you have paid.

Mail Coupon! You cannot afford to buy a piano until you have seen my plan to save you *half your piano money* with your own time to pay. Coupon or a postal will do.

C. L. Adler, Pres't., Adler M'f'g. Co.,
4021 Chestnut St., Louisville, Ky.

Send me your Free Illustrated Adler Piano Book and Special Offer.

NAME.....

ADDRESS.....

kitchens that follow the threshing machine in many parts of the West. They have a tent kitchen with all the paraphernalia for cooking, also a tent dining-room. They come with the threshers, and the women of the household are saved all the hard work of cooking and serving meals for from fourteen to twenty men—and often without help. Now, why couldn't a similar plan be worked out for housecleaning, canning, etc? Why couldn't gangs of skilled help go about to plant gardens, plow the fields, plant crops, harvest, and even do the fall butchering? We all know how much more quickly work can be done when the help is well organized, and under efficient management. I am sure it would not cost as much to have ten men one day as it would to have one man ten days. And if the cook wagon took care of the men, the housewife would not feel so very much worried even if she couldn't get a hired girl.

Everyone knows how much pleasanter it is to do a disagreeable job when one has several companions in misery! I believe it would not be at all difficult to get good men to go about with a gang organized to do farm work by the job, when not one of those same men could be hired by the month to work on a farm. And one great reason for my belief is that I know how all working people long for variety. There is no excitement in working by the month on a farm, while one may have endless variety and a fine season of camp life, by becoming one of a traveling gang of workers.

The same thing holds true respecting help for the house. It is no fun doing housework on a farm—as most any girl will tell you. But to be one of a working force, working by the day, camping at night, ah! that puts a different complexion on the story!

I presume nine-tenths of you will be inclined to laugh at this suggestion when you first read it. Well, laugh! I don't mind. But don't let that end the matter. Give it a thought once in awhile, and in the course of a month or two read it again. I believe you'll see something in it. You know it is very hard to get the average woman out of the beaten rut. You couldn't reason with some women long enough to convince them that men are excellent help in housecleaning. You couldn't make them believe that five people who have nothing else to do could get more housecleaning done in a day than any housewife could get done in five days with everything else to do. Such women never can be anything except drudges; but they are not in the majority, and they'll soon die, anyhow! It is the business of the progressive woman to try to reason with the daughters of these women, and to begin before they have grown old enough to adopt their mother's wornout notions.

RUTH MOTHERBY.

Home-Made Candy.

I have a few really good recipes for making candy that some one may be glad to get. We never buy candy for our children. In fact, we seldom let them have it; but when we can no longer refuse them, I make it myself, and then I know it is pure. I am sometimes told that we are more careful than we need be about giving candy to the children. I wish I knew that was so; for it hurts me to refuse them. But they have fine teeth, and some of their playmates who have a great deal of candy, have poor teeth; and I can't help thinking candy makes the difference. Am I wrong? Where can I go to get definite and reliable information on the subject?

Here are my recipes. I have others, but these seem to give less trouble than any I have tried.

Cocoanut Candy—Grate two cocoanuts fine and put in a kettle with four pounds of pulverized sugar, the beaten whites of two eggs and the milk contained in both nuts. Stir over the fire until it looks as if it were turning back to sugar, then take off and [illegible]n into a buttered dish.

Cream Candy—One pound of sugar, one-half teaspoonful water, one-half teaspoonful vinegar, one tablespoon butter. Boil fifteen minutes, stirring but once, just at first.

Ice Cream Candy—One and one-half pounds sugar, two tablespoonsful butter, one and one-half teacupsful water, the rind of half a lemon. Boil until it will crisp when dropped in cold water, stirring all the time it is boiling. Take it off, and when it has stopped boiling, stir in the juice of one lemon. Let cool, take out lemon rind, and pull until white.

MRS. S. W.

Suffrage Not a Cure-All.

What funny talk we hear, these days, now that the new political party has given fresh impetus to the woman suffrage question. To listen to the defenders of this question one wonders how women have managed to get along until now without the ballot. I heard a woman saying, when talking of the difference in wages paid the two sexes for practically the same work, "The only remedy lies in giving woman the ballot. When woman helps make the laws by which she is governed, there will be an end to this injustice, and not before."

You hear it everywhere. Give women the ballot, and they have the remedy for every ill female flesh is heir to. It seems to me that woman suffrage is in danger of becoming like patent medicine—a sure cure for too many diseases; and so people who haven't a direct interest in the sale of the medicine, or who haven't tried every other kind of medicine in vain, are not going to have faith in it, and use their influence to push it, even as much as it deserves.

I'm not arguing either for or against woman suffrage, for I know my opinion will make no difference either way. If woman suffrage is in line with progress, it will come sooner or later, whether I like it or not, and I'll simply have to cut my opinions and fit my prejudices to suit the new conditions. I don't like to think of being obliged to vote, but if the ballot is thrust upon me, I shall do the best I can with it.

Personally, I do not believe that the world will grow better, or that women will suffer less, simply because woman is allowed to vote. Progress along any line is always of slow growth. We can't go faster than the majority. When humanity as a whole is ready for the better condition, the better condition will materialize.

Much of the prevailing injustice to women is wrought by women, not by men. And it is not because women mean to be hard and unjust, so much as because they do not realize that they are so. They need education along that line. The ballot won't make good employers of women nor will it make efficient help of those who are demanding more pay than they can earn.

We are more in need of practical Christianity than we are of ballots. There are hundreds of ways in which the Golden Rule could be brought into everyday life, and woven into far more interesting and helpful talks than the best political speech on record. If we won't make practical use of that which the world has known since Christ came to earth, how can we expect to perform miracles through woman suffrage? NANETTE STRONG.

An Economical Sister.

When I read that first report of the Economy Club, I said to myself, "Allis', now is your time to write. When it comes to economy, you are the one to lead your class."

Why, I have made a fine sideboard for my dining-room out of an old bureau and a few boards! The boards were converted into shelves, placed above the bureau, and here my prettiest dishes are arrayed.

Economy in work? Yes, ma'am, I can answer that question, too. When food burns to my kettles, do you think I waste precious minutes scrubbing it off? Indeed, I do not. I just dump

Beacon Burner FREE

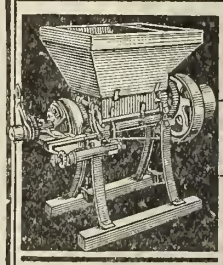
FITS YOUR OLD LAMP.
100 Candle Power Incandescent pure white light from (kerosene) coal oil. Beats either gas or electricity.
COSTS ONLY 1 CENT FOR 6 HOURS
We want one person in each locality to whom we can refer new customers. Take advantage of our Special Offer to secure a Beacon Burner FREE. Write today. AGENTS WANTED.
HOME SUPPLY CO., 47 Home Bldg., Kansas City, Mo

NEW KEROSENE LIGHT — BEATS GAS OR ELECTRIC

TRY IT TEN DAYS AT OUR RISK

Wonderful invention. No home where coal oil lamps are used can afford to be without it. Low priced, simple, clean, odorless, noiseless. Can't explode. Burns 50 hours on one gallon of coal oil. Guaranteed.
AGENTS—This marvelous, cheap, powerful white incandescent light is replacing all other oil lights. Territory is being taken fast. Write quick, if you want to get in on this money-making opportunity. Become our representative for your neighborhood and get one free. Ask for agents' wholesale prices and trial offer.
MANTLE LAMP CO., 447 Aladdin Building, Chicago, Illinois

SAVE 1/4 OF EVERY $100



Every mouthful of unground feed your stock eats means a waste of 25 to 30%. Would you let that amount rot in the field unharvested? No? Then GRIND IT on a

STOVER OR IDEAL FEED MILL

SEND FOR CATALOG

We also build Samson Wind Mills, Pump Jacks, Hand Grinding Mills for Poultry Raisers, Gasoline Engines, Ensilage Cutters and Brass Candlesticks.

STOVER MANUFACTURING CO.
260 Ideal Avenue. FREEPORT, ILLINOIS

We Ship on Approval

Prepay Freight, and allow

30 Days Free Trial

IT ONLY COSTS ONE CENT to learn our unheard of prices and marvelous guarantee on "Brictson" Detachable Treads.

Let us show you how to save from 300% to 400% on your tire expenses. Write to-day for full particulars.

The Brictson Mfg. Co.
38122 Main St.
BROOKINGS, S. D.

Trappers Names

are valuable to us. Your name in our possession will be just as valuable to you. We pay the highest prices for furs. Ship them to us.

Send today for price list and tags—they are FREE.

We Are Direct Buyers, Therefore, Charge No Commission.

Lotz Bros.
53 Chestnut St.
St. Louis, Mo.

OUR TRAPPER'S FRIEND AND GUIDE FREE

MODERN METHODS IN TRAPPING. This GUIDE is as different from any Guide you ever saw, as an AUTOMOBILE is different from the old time STAGE COACH. $100.00 would not buy it of you if you could not get another. You never saw its equal. You get the GUIDE FREE, ordered on our blanks. Write the Old Square Deal Fur House.
WEIL BROS. & CO., Box A-22 Ft. Wayne, Ind.

MONARCH CIDER HYDRAULIC PRESS

Proved capacity, great strength, all sizes. Write for FREE catalog today.

Also Gasoline and Steam Engines, Threshers, Saw Mills. Get our prices.

MONARCH MCHY. CO., 642 Hudson Terminal, New York

Try This Stump Puller at Our Risk

The Smith Stump Puller will take out every tree and stump by the roots, clearing from one to three acres a day, doing the work of twenty men. We want you to send for our 3 year guarantee against breakage and our free trial proposition Address
W. Smith Grubber Co.
8 Smith Sta.
LaCrescent, Minn.

some wood ashes into the offending dish and pour cold water over them; then the dish is returned to the stove, and when the water has boiled a little while, my dish is clean, and the next time I use it, I'm careful to put a dozen common marbles into it, when I'm going to cook anything that may burn on, and so save all the trouble.

Economy in cooking? I make my own lemon extract, and it is good. I secure a pint of the best alcohol at the beginning of the lemonade season; then, when about to make a little of that delectable drink, I peel the lemons, being careful not to take off any of the white part, and put the thin yellow rind into the alcohol. I keep on until the alcohol will take no more, then I shake it well and add half a pint of water, and I have the best extract I ever used.

Bread crumbs? Listen, sisters! Instead of wasting good eggs by mixing them with bread crumbs and making something that no long-suffering man ever ought to be asked to eat, I just put my dry crumbs and other scraps into good eggs. I feed them to my chickens, and make something good out of the ingredients that are spoiled by being mixed with scraps.

Health? Let me tell you something. If you will wear corsets, do have an abdominal band fitted to wear under the corset. Put the band on first. If you'll do that, you'll have less danger of getting varicose veins. Do you know that tight clothing is responsible for varicose veins, and also for the very tired feeling that often comes all over the body before the veins actually break? The abdominal band, if properly fitted, will relieve the pressure that is made worse by the corset.

There! Now you know.

SISTER ALLIS TIGHTWAD.

Results of Egg-Laying Contest

The first Missouri National Egg-Laying Contest closed at the State Poultry Experiment Station at Mountain Grove, Mo., on October 31st. The results have been very satisfactory, but have not been especially startling, and neither have we proven or attempted to prove that any one variety possessed all the good qualities.

The leading pen was No. 107, R. C. Rhode Island Reds, which made a record of 1,042 eggs for five hens, or an average of over 208 eggs per hen. The best individual record was made by Lady Showyou, White Plymouth Rock Hen, No. 717, which laid 281 eggs in twelve months. This hen lacked one egg of equalling the best record in this country, which was 282 eggs by a Barred Rock hen at Guelph, Canada. Lady Showyou, however, laid a full-sized egg, weighing on an average a little more than two ounces each, and with a good strong shell on each egg. We are told by Prof. Graham of Guelph that his 282-egg hen laid a very small egg with a very poor shell, so Lady Showyou was far the most remarkable performer of the two when these facts are considered.

There were 655 hens in this contest, and they laid a total of 87,843 eggs, or an average of over 134 eggs per hen. Considering the fact that more than a dozen pens lacked two or three months of being mature at the time the contest began, and also considering the fact that more than half of the pens were made up of hens, and several of them contained hens three and four years old, we are reasonably well satisfied. When we consider the fact that most of these birds had been carelessly and promiscuously bred, with no special idea to increase egg production, and came from all classes of breeders; and that the average hen only lays eighty eggs per year, we do not feel that 134 eggs per hen is a bad average for such a promiscuous lot of stock as this.

The yield by months was as follows: November, 3,118; December, 5,082; January, 3,203; February, 6,442; March, 10,828; April, 12,458; May, 11,478; June, 9,798; July, 8,873; August, 7,015; September, 5,716; October, 3,832.

The following are the prize winners for the contest just closed:

For Best Pen Record.

First, Pen 107, R. C. Rhode Island Reds, D. E. Hall, California, Mo., 1,042 eggs. Cash, $25, State Poultry Board. Silver cup, value, $75, Zenner Disinfectant Co., Detroit, Mich. Cash, $25, Western Poultry Journal, Cedar Rapids, Ia. Silver cup, value $25, Poultry Culture, Topeka, Kan. Six trap nests, A. L. Glass, Hopkins, Mo. Standard Model Incubator, Robert Essex Incubator Co., Buffalo, N. Y.

Second, Pen 52, White Wyandottes, P. J. Jansen, Little Rock, Ark., 1,015 eggs. Cash, $15, State Poultry Board. Silver cup, value $30, T. H. Purple, Constantine, Mich. No. 2 Standard Cyphers Incubator, Cyphers Incubator Co., Buffalo, N. Y.

Third, Pen No. 13, S. C. W. Leghorns, Walter Hogan, Petaluma, Cal., 991 eggs. Cash, $10, State Poultry Board. No. 1 Standard Cyphers Incubator, Cyphers Incubator Co., Buffalo, N. Y.

Fourth, Pen No. 85, B. P. Rocks, Brooks Sanitary Hennery, Morgan Park, Ill., 967 eggs. No. 0 Standard Cyphers Incubator, Cyphers Incubator Co., Buffalo, N. Y.

For Best Individual Record.

First, No. 717, White Plymouth Rock, J. A. Bickerdike, Millersville, Ill., 281. Cash, $25, State Poultry Board. No. 3 Standard Cyphers Incubator, Cyphers Incubator Co., Buffalo, N. Y.

Second, No. 602, R. C. R. I. Red, D. E. Hall, California, Mo., 255 eggs, Silver cup, T. E. Quisenberry, Mountain Grove, Mo.

Third, No. 381, B. P. Rock, M. H. Baldwin, Sioux City, Ia., 245 eggs. Silver cup, State Poultry Board.

General Averages.

The average number of eggs laid by each hen and the average amount of feed consumed by each hen of those varieties which had ten or more hens entered, and which averaged more than 120 eggs per hen for the year, is as follows:

	Eggs, per hen.	Grain, pounds.	Dry Mash, pounds.
All Silver Wyandottes	160	35	35.3
All S. C. Reds	156	35	38.6
All Black Langshans	156	35	50
All Black Orpingtons	155	35	44
All White Orpingtons	150	35	39
All R. C. Reds	150	35	32.6
All Buff Orpingtons	147	35	30.3
All S. C. Black Minorcas	145	35	44
All S. C. White Leghorns	143	34.8	32
All Anconas	139	34.8	30.5
All Indian Runner Ducks	131	..	121
All R. C. White Leghorns	127	34.8	23.3
All B'r'd Plymouth Rocks	126	35	44.2
All White Wyandottes	125	35	33
All S. C. Brown Leghorns	122	34.8	31.5
All Buff Plymouth Rocks	120	34	45

The above includes good and bad producers and both young and old hens. Several varieties ran considerably below these in average eggs per hen, but about same amount of food consumed. The cost of the grain averaged about one and one-third cents per pound, and the cost of the dry mash was nearly two cents per pound. It can be seen from the above how far the Australians are in advance of the breeders of this country in breeding for egg production. The leading pen in this contest averaged more than 208 eggs per hen, but the leading pen in an Australian contest, which recently closed, averaged more than 250 eggs per hen. Also, in the same Australian contest, 360 hens gathered from sixty different breeders, made an average of nearly 200 eggs per hen. They have been conducting contests in that country for ten years or longer, and the people have been educated to breed for egg production. We hope to stimulate some such effort in this country. The average farm hen does not lay more than eighty eggs per year at present. If we can even raise the average to 150 or 160 eggs per hen, we can more than double or treble the profit in poultry to the average breeder for he can get this increase in most cases with but little if any additional cost for houses, feed and stock.

The Houses Used.

The houses used were 8x10 feet. Each had two ordinary stationary shutters for ventilation in the front part of the house. These have proven to be far better than an open front or curtain front, even in the severest weather. Two window sashes were used in the front and two in the rear of the house under the droppings board. A ventilator was placed in the rear, just beneath the eaves. Each had droppings board, roosts and feed hoppers. Each house was divided in the center by a partition.

The Trap Nests.

Each house was fitted with two styles of trap nests, one a wooden home-made nest, and the other a galvanized iron manufactured nest. Both were very satisfactory. The galvanized nest proved the most satisfactory of all nests we have tried out. It was most sanitary, most reliable, and easiest operated.

The Method of Feeding.

Grain mixture: 200 pounds cracked corn, 200 pounds wheat, 100 pounds oats.

Dry mash fed in a hopper: 100 pounds wheat bran, 200 pounds middlings or shorts, 200 pounds corn meal, 200 pounds rolled or ground oats, 150 pounds dry beef scraps, 75 pounds alfalfa meal, 50 pounds gluten meal, 25 pounds O. P. oil meal, 8 pounds fine table salt, 25 pounds powdered charcoal.

The cost of this feed will, of course, vary in different localities. We find that the average cost to us for this feed for the year was about one and one-third cents per pound for the grain mixture, and nearly two cents per pound for the dry mash mixture.

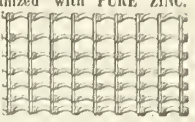
About one-half pint of the grain mixture was fed in the litter each morning to a pen of five hens. A slightly greater quantity was fed at night. This dry mash mixture was kept before the fowls at all times. At one o'clock each day, a handful of the same dry mash which had been moistened with buttermilk or skim-milk, was fed in a trough to each pen. We did not give them all they desired of this moistened mash, but just enough to add variety and to whet their appetites, and they literally fought to get to it. We also gave each pen a handful of sprouted oats about this time each day. We discovered that they liked this kind of green food better than any other. We also found that we could supply this kind of green food about as economically as any other and with as little trouble by properly preparing to sprout the oats. We never let the drinking pan go dry winter nor summer, and believe that a dry drinking pan will cut the egg yield as quickly as anything else, if not quicker. We used a small quantity of permanganate of potash in the drinking water to prevent colds and diseases. A small quantity of Epsom salts was fed in the moistened mash once or twice every month.

The only changes which will be made in this method of feeding for the contest are as follows:

Two parts of corn and one part of wheat will be the grain mixture for winter months, and one part of corn and two parts of wheat for the summer months. The oats will be eliminated from the grain mixture for the reason that the hull on the oats caused us some trouble. In order to overcome this loss of oats in the grain mixture, we have increased the

Strongest FENCE Made

Made of DOUBLE STRENGTH Coiled Spring Wire. Requires fewer posts. Always tight. Is heavily Galvanized with PURE ZINC. Will outlast all others. Sixty different styles and heights to choose from. A FENCE for every purpose.



WE SELL DIRECT TO THE FARMER AT DEALER'S PRICES.

Be your own merchant and put the Dealer's Profit in your own pocket where it belongs. Prices the lowest ever quoted on first-class wire fence.

26-inch Hog Fence, - - 13½c. per rod.
49-inch Farm Fence, - - 22c. per rod.
48-inch Poultry Fence, - 22c. per rod.

Special Barbed Wire, $1.40 per 80-rod spool.

Biggest values ever offered and sold under our 30-DAYS-FREE-TRIAL-MONEY-BACK GUARANTEE-CONTRACT. Our big Catalogue contains information you should have. Write for it today. It's FREE.

COILED SPRING FENCE CO.
Box 125 Winchester, Indiaoa.

KITSELMAN FENCE

We make you the same price we would make the Dealer or Jobber. That is why we can save you money. Look at these very low prices.

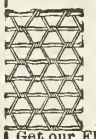
11½ CENTS A ROD for 18-in. hog fence.
22¾c. a rod for 47-in. farm fence.
24¾c a rod for 60-in. poultry fence.
$1.40 for 80 rod spool of Ideal Barbed Wire. Large free Catalog showing 100 styles of Farm, Poultry and Lawn Fence.

KITSELMAN BROS. Box 103 Muncie, Ind

BROWN FENCE

For all purposes. Direct from factory, freight prepaid.
Bargain Prices—13c per rod up
Get our new fence book before you buy fence for Horses, Cattle, Sheep, Hogs, Poultry, Etc.
Also Lawn Fence and Gates
We save you *big money*—give you highest quality. Mail postal *now* for Big Fence Bargain Book
Dept. 14 THE BROWN FENCE & WIRE CO., CLEVELAND, OHIO

TIGER-FENCE



Shipped direct from factory to you. No Middle-man's profit to pay. Twenty Years' experience enables us to produce the most Durable, Strongest, Best Galv. Fence made. If not as represented return at our expense. 60-Styles, Diamond and Square Mesh, 11½ to 35c per rod; 80-rod spool Galv. Barb Wire $1.40.

Get our FREE CATALOG and prices before placing orders.

Tiger Fence Co. Clarksville, Tenn.

Fairfield
Incubators Guaranteed to Hatch 90% or Better

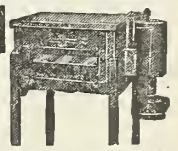
No other incubator in the world guaranteed like this. This proves that the Fairfield must be the best. Why then waste time and money with an uncertain incubator? The Fairfield makes good in all climates, under all conditions. Hatches right for the beginner as well as for the experienced poultry raiser. Costs no more than the ordinary kind.

World's Best HATCHER Sold on Two-Hatch Trial

That means you can try the Fairfield two hatches. If it fails to make good, you get your money back. Write for handsome free catalog; particulars.

Sam Thompson, Pres., Neb. Inc. Co., 50 Main St., Fairfield, Neb.

Hatch by Rule



No guessing or chances to take with Mandy Lee incubators. Heat, moisture and ventilation all automatically regulated. Leads all hatchers because purely automatic and scientific. Use Germozone for chick health. Best remedy for Roup, Colds, Chicken Pox, etc. Lee's Egg Maker and Lice Killer are a boon to poultrymen. Write for free books.

GEO. H. LEE COMPANY, 1122 HARNEY STREET, OMAHA, NEB.

Make Your Hens Lay

You can double your egg yield by feeding fresh-cut, raw bone. It contains over four times as much egg-making material as grain and takes the place of bugs and worms in fowls' diet. That's why it gives more eggs—greater fertility, stronger chicks, larger fowls.

MANN'S LATEST MODEL BONE CUTTER

cuts easily and rapidly all large and small bones with adhering meat and gristle. Automatically adapts to your strength. Never clogs. Sent on 10 Days' Free Trial. No money down. Send for our free books today.

F. W. MANN CO. Box 108 MILFORD, MASS.

Free Book Tells How

amount of oats in the dry mash to 300 pounds, and will also continue the sprouted oats. We also expect to increase the dry beef scraps to 250 pounds and the powdered charcoal to thirty-five pounds in the dry mash.

Getting Eggs in Cold Weather

A comfortable house is of first importance. No matter how favorable other conditions are, if the hens are not provided with suitable shelter, during the cold winter months, they will not lay very large eggs.

Hens must be cared for more or less the year through, but of course, in summer they can, as a rule, pick up most of their food in the fields, provided they have free range. Even during the summer it is a good plan to feed the hens a little grain. This helps to keep them in good condition and when the moulting season arrives, they will be better prepared for the extra strain on their vitality.

If frosty nights arrive before the hens get their new feathers, be sure that they are sheltered from the cold. In case they have roosted in the trees during the sultry months, the chances are that they will still insist upon roosting in the same place, but they should not be allowed to do so. If only a few hens are late in moulting, we place them in a house by themselves, and feed them such foods as we think are best suited to their needs; the idea being to fatten the late moulters, and when they are well feathered they will be ready for market. As a rule, a late moulter is not a good winter layer, however, there are some exceptions.

If hens lay steadily all summer, as they sometimes do, it is a difficult problem to induce them to moult at the proper time. We had some experience along this line at this season, after having had a constant supply of eggs since November of last year. Some of the hens got a new coat of feathers early, while others continued laying. A hen usually gets rather pale about the head, when she begins to lose feathers; or rather, when the new ones begin to grow.

The hens roost in the houses during the summer, the same as during the winter. Being thoroughly ventilated, these houses are quite comfortable. In winter they are so snug that even in zero weather not a cold draft ever strikes the hens. Each house was built for about fifty fowls, but will shelter a few more without crowding. The size of each house is 15x36 feet. There are two separate apartments in each house and a small feed-room and entry for storing small quantities of grain, grit, etc. The partitions on either side are made of heavy scantling, and the doors are made of the same material, except the outside door, which is made of solid lumber.

The nest boxes are arranged on either side, so that the eggs can be gathered without leaving the feed room. A sort of bench is built along each partition, with a space just wide enough to be filled by the nest-boxes. They are all fitted with wire handles and are easily slipped out a little and then slipped back into place just like a drawer in a kitchen cabinet. Roosts are fitted with dropping boards, so that very little of the manure can get onto the floor. Roosts are movable, but the boards underneath form a stationary platform about a foot lower than the roosts. We scatter dry earth or coal ashes under the roosts so that the droppings can be easily removed. Droppings are used as a garden fertilizer.

Everything is kept as clean as possible. Floors are covered several inches deep with straw or litter. It is not necessary to change it very often, except in severe winter weather, when the fowls have to be kept housed.

The walls of the house were built to keep out the cold. Heavy lumber was used and as rough boards never join very closely, narrow strips were nailed on the inside to keep out the cold. Then the entire inside of the house was given a thick coat of whitewash. This helped to improve the appearance as well as fill up small crevices.

Two large windows were put in each house, with a small door under each. Windows were all on the south side and the houses stand on the south side of a hill. Drains were dug around the houses and no floors were built in any of them. They are always dry in winter as well as at all other times. There is only one large door in each house. This is on the north side. All doors and windows are fitted with fine-mesh poultry netting, so that in mild weather the fowls can have plenty of fresh air and still have some protection.

If new houses are needed, now is the time to build. If an old house is to be repaired, work should be done before cold weather sets in. Be sure that all houses are free from vermin. Clean old houses thoroughly before beginning other repairs. We use the lime-sulphur mixture for lice, the same as for fruit trees.

It pays to take good care of the hens. Eggs are going to be higher than ever this winter, if all reports are true. According to Professor F. S. Jacoby, head of the Poultry Department at Ohio State University, eggs will bring sixty cents per dozen. This may be a little too high, but we predict that they will be at least forty cents here. They brought forty cents in our local markets last winter. We think there is good profit in winter eggs at even less than this. It costs something to feed hens, of course, but if properly fed and cared for, they will give good returns when "eggs are eggs."

Here is how we feed: When the weather begins to get cool, we feed whole corn every morning. Not a full feed, but just enough to keep the hens a little hungry. After this they are given a drink of warm skimmilk or buttermilk. This is replaced later with clear, tepid water. If the weather is good, they have free range; if not, they are kept in the houses. However, it is very seldom that the weather is very cold before mid-winter. But even if it is not severe there is no advantage in permitting the hens to wander about or huddle in bunches wherever they can find shelter. It is better to keep them in the poultry-house or houses.

A little before noon they are given some sort of green stuff. If cabbage is plentiful, no other green food is necessary. But the hens relish raw turnips, beets, potatoes, apples, etc. These can be fed more economically when chopped into small bits. A bone-cutter will do the work. We have even used an ordinary sausage cutter or food chopper. Troughs are used for all such foods. Sometimes we add some boiled oats to the chopped vegetables. They are given all they will eat up clean.

About half past two o'clock we give the hens their supper. As a rule, this is all they need for the day. Sheaf-wheat is scattered over the floor and they are kept busy until time to go to roost. When sheaf-wheat cannot be had, we scatter wheat in deep litter. We have followed this method of feeding for several years with excellent results. In the coldest part of last winter, when the mercury dropped to 10 degrees below zero, our hens were laying as high as 160 eggs a day. We had 200 hens. One hundred Brown Leghorn and 100 Orpingtons. The Leghorns are by far the best winter layers. but they are small and non-setters.

We have a number of yards around the houses and during the hatching season we keep the two varieties separated as a rule. We have tried a cross between the two varieties, and find that these Orpington-Leghorn pullets make excellent layers and they are very attractive in appearance.

Sometimes we keep the hens indoors for weeks. They are not overcrowded and are given regular attention. They are never kept confined unless it is necessary. When the weather is cold and the ground is covered with snow, poultry is better off in a good comfortable house. We know people who keep about the same number of chickens that we keep and yet have no eggs to sell in winter. Why? Simply because they allow the hens to roost anywhere about the premises, stay in the house or outdoors, as they choose, in all kinds of weather, and either drink ice-cold water or else eat snow. They are fed all the corn or dry oats they can eat twice a day. Never fed oftener than twice a day, and the corn is sometimes frozen. We always warm the corn a little in the oven when it is frozen. Last winter our neighbor's hens were shivering around with frozen feet and frozen combs, while ours were scratching, singing, cackling and laying eggs.

We always provide the hens with plenty of grit. This is important. They need it to grind their grain. No cooked mashes or ground grains are fed and there is never a sign of cholera, nor, in fact, any other disease among the fowls. Soft or sloppy feeds often cause looseness of the bowels, which is sometimes taken for cholera. Oyster shell, charcoal and coal cinders are always kept within reach of the hens. They eat great quantities of all of these. Eggs are gathered twice a day in winter, and all soiled eggs are carefully washed.

Many times a dollar's worth in a year's subscription to The Fruit-Grower and Farmer.

These Six Beautiful Pictures
ABSOLUTELY FREE OF COST

We Want to Send These Six Beautiful Pictures to Every Reader of This Advertisement Who Loves Art

These pictures are exact reproductions of the original paintings. They will add splendid beauty to the homes of every Fruit-Grower and Farmer reader. The subjects represented are such as will appeal to art lovers everywhere. The exact size of these pictures is 11x16 inches, and are printed on heavy quality paper. They are wonderful examples of art photography in sepia. Every Fruit-Grower and Farmer reader should send for them.

WHY WE MAKE THIS OFFER

The Object of this offer is to acquaint ourselves with new people residing in rural sections of the country who are interested in farming and fruit growing, everywhere. We want to reach these people, and in order to obtain their names, we offer to send you these six pictures, in return for a list of names of twenty-five people who live in your neighborhood.

There are hundreds of families living in the different farming and fruit-growing sections, who are not now subscribers to The Fruit-Grower and Farmer. We want to get in touch with them. Therefore, if you will send us a list of only twenty-five names (heads of families, or individual men) who are conducting farms, we will send you these six beautiful pictures free of cost.

There is no further obligation—merely send us these twenty-five names of men or women (but there must not be included more than one in a single household), and the pictures will be sent to you postpaid.

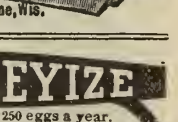
These pictures are excellent reproductions, and will cost you at least 50 cents each at any art store. **But we will send them to you FREE.** Merely make up your list and enclose only 10 cents to cover wrapping and postage, and they will come to you without delay.

If you can send us more than twenty-five names, or a recent "farmers' telephone book" which gives the names of all the people living in your vicinity, we will send you an extra set, so make up as large a list as you can.

The Fruit-Grower & Farmer, St. Joseph, Mo.

$7.55 Still Buys World's Champion 140-Egg Incubator

Double cases all over; best copper tank; nursery, self-regulating. Best 140-chick hot-water brooder, $4.85. Ordered together, $11.50. Freight Paid (E. of Rockies). No machines at any price are better. Satisfaction guaranteed. Write for book today or send price now and save time. Address



Belle City Incubator Co., Box 104, Racine, Wis.

HUMPHREYIZE

Make your hens lay 150 to 250 eggs a year. Halve the cost of feed. 10 or more hens should mean—Humphreyize. "The Golden Egg" free and a Humphrey Bone Cutter on free trial. HUMPHREY, Union St. Factory, Joliet, Ill.

PFILES 65 VARIETIES

LAND and Water Fowls, Farm-raised stock, with eggs in season. Send 2c for my valuable illustrated descriptive Poultry Book for 1913. Write HENRY PFILE, Box 617, Freeport, Ill.

Our Classified Advertising Department

For advertisements in this department, of not less than twenty words each, in which no display type is used, we make a special rate of FIVE CENTS PER WORD, EACH INSERTION. If several different advertisements are inserted in the same issue, the charge will be $1.00 for each ad, no matter how small. The first four words of each ad will be set in black type. Every initial and number to count as one word. This department is for the benefit of our subscribers who have anything to sell, including farm lands, fruit farms, dogs, ponies, poultry and eggs, live stock, plants, shrubs, vines, etc. All advertisements for this department must be PAID FOR IN ADVANCE. Count the number of words you send, and remit at rate of 5 cents per word, stamps, currency or money order. This is considerably less than our display rate, and offers a splendid opportunity to reach our readers at a low figure. Send a trial advertisement with remittance at rate of 5c a word. The Fruit-Grower and Farmer, St. Joseph, Mo.

POULTRY DEPARTMENT

Sheppard's Famous Anconas. The world's best, single or rose comb. First at world's greatest shows, including London, England; Madison Square, and Cleveland. Greatest egg record, 256 average. Catalogue free. Cecil Sheppard, Berea, Ohio. President International Ancona Club.

R. C. W. Leghorns—Pekin ducks. Yearling males and females for sale at prices that will move them. Bred from Chicago, Minneapolis, Oshkosh, Fond du Lac winners. Circular. Joseph H. Kitchen, El Dorado, Wisconsin.

Breeders, $1.50 each; Rhode Island Reds, White and Columbian Wyandottes, White and Buff Orpingtons, White Leghorns, Barred Rocks, Pekin, Rouen and Indian Runner ducks. Catalogue free. G. A. Mitchell, Freeport, Ill.

By carefully mating the very best stock obtainable, I have produced a high-scoring winter-laying strain of Partridge Wyandottes. Stock and eggs for sale. W. E. Brockelsby, Lawrence, Kansas.

For Sale—Some choice S. C. W. Leghorns, B. P. Rocks and Mammoth W. H. turkeys. Winners at leading shows. Southern Slope Poultry Farm, Box A, Jacksonville, Ill.

Thoroughbred Rose and single comb Rhode Island Red Cockerels and Pullets bred from 93 to 94 point males and hens trap nested for superior egg production. Write, D. J. Bliss, Carthage, Mo.

48 breeds, fine pure bred chickens, ducks, geese, turkeys, guineas, peafowls, at low prices, large catalogue 4c. Ziemers Poultry Farm, Austin, Minn.

Rose-Comb Minorca cockerels for sale. Better winter layers than Leghorns. Weigh with the Reds or Rocks. C. R. McCollom, Rural Route, Henderson, Ky.

White Rocks, Fishel strain; fine layers; choice cockerels, $2 to $3. Pullets, $1.25. Satisfaction guaranteed. W. H. Dougherty, Sellersburg, Indiana.

Here to please. Barred Rock, Buff Orpington, Red; cockerels, pheasants and Indian Runner ducks. Julia E. Wise, New Market, Iowa.

We have only one cockerel and one extra fine cock, Rose Comb Red Utility. Write Alleshouse, Trenton, Mo., for low price.

Indian Runner Ducks—Fawn and white or penciled stock for sale, $1.50 to $3 each. J. W. Fretz, Bosworth, Mo.

FARM LANDS FOR SALE

Arkansas

For Sale—1,000-acre Arkansas stock farm, good improvements, 300 acres bottom land, about 200 in cultivation, good fencing and good house. Price $10,000, on terms. Polk Real Estate Co., Little Rock, Arkansas.

Arkansas Land, $10; better, $16; extra choice, $20—$2 per acre down, 6 per cent on balance. State map and booklet describing lands, free. George R. Lochrie, Gifford, Ark.

Grow strawberries for early Kansas City markets on cheap land in Arkansas. "Homeseekers Guide" free. Porter Land Co., Horatio, Ark.

Cuba

Rich soil, ideal climate. Abundant rainfall, best transportation; 20 acres, $600, $10 monthly. Map and literature free. S. O. Sanderson, 184 Palace Bldg., Minneapolis, Minn.

California

California farms and high-class restricted property our specialty. Harold Havens Co., Inc., fifth floor First National Bank Bldg., Berkeley, Cal. Sales Dept.

Florida

Florida's Best Fruit Land at half land companies prices. Write F. O. Farwell, 14 Fenelon Place, Dubuque, Iowa. Notify R. S. Farwell, Gardner, Florida, to meet you and show land.

Idaho

For Sale—80 acres, 20 in fruit. Jonathan, Grimes Golden, King David, balance in alfalfa and grain. For particulars, write, P. L. Schubert, Jacksou, Idaho.

Fruit and grazing farm a bargain, 350 acres 4 miles from Allapass, N. C., in the heart of the Blue Ridge Mountains, with improvements, 300 apple trees 4 years old and 75 fifteen years, 100 acres cleared. Worth investigating. For particulars, address J. S. Wiseman, Hanson, Idaho.

Indiana

Pear Orchard, 1,900 trees 8 years old. 3½ miles Illinois Central Railroad, Greene County, Indiana, L. H. Jones, Bloomfield, Ind.

Louisiana

500 acres at Ponchatoula Tangipahoa Parish, Louisiana, in the famous early strawberry section on the great Illinois Central Railroad, 48 miles north of New Orleans, 12 trains daily. Mild salubrious climate, abundant rainfall, flowing wells, Ozone belt, schools, churches, banks, electricity and good society. Sandy loam over yellow clay above overflow suitable for early strawberries, figs, peaches, plums, pears, pecans, persimmons, pomegranates, satsuma oranges, grapes, blackberries, sugar cane, sugar beets, tobacco, cotton, rice, oats, peanuts, onions, corn, cabbage, potatoes, melon, cow peas, clovers, grassy, and early truck for Northern markets, hogs, poultry and dairying. Three crops yearly, brick and lumber cheap. $60.00 per acre. E. L. St. Ceran, 3102 Annunciation St., New Orleans, Louisana.

Missouri

For Sale—Orchard, containing 215 acres in apple trees; 6,000 Jonathans; the others are Huntsman, Gano, Ben Davis, Maiden Blush. House has 6 rooms, 3 porches, hall, good cellar, good cistern and spring never goes dry; four-room tenant house, big barn, silo and other outhouses, two miles from Mayview, Mo. Good roads. If can sell before February 15th, will take $30 per acre and loan you $12,000 on it for 2 or 3 years at 6 per cent interest. Write to E. P. Brand, Higginsville, Mo.

Ideal general-purpose farm, 62½ acres, 3 miles from Hiwasse, Benton Co., Ark., the heart of the Ozarks, 18 acres splendid 9 and 12-year-old apple orchard, Gano and Jonathan. Some Elberta peaches and other fruit, 22 acres in cultivation, balance timber. Two-room house and a barn, good well. This place lies fine and nearly clear of stone. On R. F. D. and 'phone line, splendid road to town. Price $3,000, $1,000 cash, balance yearly payments of $500 each. No trades. Banks & Adcock, Hiwasse, Ark.

New Mexico

Pecos Valley apple orchards. Small tracts planted to young orchard. Railroad station on the land. Ample water. California irrigation systems; excellent schools; good roads; ideal climate; exclusive market. Within two miles of second largest city in New Mexico. Pecos Valley Investment Co., owners South Spring Orchards, Roswell, New Mexico.

North Carolina

Commercial Vineyard for sale in famous Thermal Belt. 20 acres, modern 9-room house, orchard of 300 trees, highest state of cultivation. $5,000 for quick sale. Bargain. Grapes alone will net $1,500.00 per year. W. B. Kruse, Tryon, N. C.

Come South. Mountain section, altitude 2,250 feet. Mild winters, cool summers. Dairying, fruit growing, diversified farming. Cheap lands. Information Bureau, Hendersonville, N. C.

Ohio

For Sale—A 55-acre fruit and poultry farm in Central Ohio; 1,800 peach and apple, bearing; improved; 1½ mile of county seat, Delaware, Ohio. Walter Glenn.

Texas

As much as $1,000 per acre has been made from our berries. McDonald berry earlier than Harvest. Twice as productive. Dallas, Robinson, Jordan and others. All fine everywhere. Tree fruits. Write for catalogue. Fitzgerald's Nursery, Stephenville, Texas.

Virginia

Land owners, find out what the minerals on your land are worth. Accurate analysis of ores, minerals and commercial products. Prices reasonable. Box 63, Blacksburg, Virginia.

Virginia Orchard.

For Sale—A fine orchard property of 60 acres in Shenandoah Valley, Virginia, near city of 10,000; good schools, two academies, good social conditions; two railroads. Fireproof concrete dwelling, 14 rooms, furnace heat, all modern conveniences. Good stable, outbuildings, shop, pump house, etc., 3000 bearing trees about 20 years old, principally Winesaps, Yorks, Grimes Golden, Ben Davis, Spies, Pippins; also pears, peaches, plums, cherries, etc.; orchard in fine bearing condition. Price and details on application. Michener & Pence, Washington, D. C.

Look ahead five years—What's in store for you? Would a pretty home in absolutely healthy climate and comfortable living income every year appeal to you? One of our ten-acre apple orchard tracts, planted with 500 trees—which will cost you a few dollars now and small payments monthly—will insure your future home, income and happiness. Write now for descriptive book 1. Shenandoah Valley Apple Lands Company, Waynesboro, Virginia.

For Sale—A 400-acre fruit, stock and grain farm in Amherst County, Virginia. Good soil and buildings, well watered and unsurpassed all-year climate. Beautiful situation. Ten thousand dollars, one-third cash. Luther Sheldon, 11-13 Monticello Arcade, Norfolk, Va.

Washington

The Walla Walla Valley has never experienced a cyclone, tornado, hurricane or blizzard, crop failures are unknown, abundant opportunities for successful investments. Write for information regarding fruit growing, truck gardening, dairying and poultry raising. Ask for beautiful free illustrated booklet C, Commercial Club, Walla Walla, Washington.

FARMS WANTED

Farms Wanted—We have direct buyers. Don't pay commissious. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 20 Palace Bldg., Minneapolis, Minn.

Wanted—Reliable person; report us names, addresses, local information, etc., in spare time. Big pay. Unusual opportunity. Enclose stamp. National Information Sales Co., A. D. H., Cincinnati, Ohio.

MISCELLANEOUS

Free—"Investing for Profit" magazine. Send your name and I will mail you this magazine absolutely free. Before you invest a dollar anywhere, get this magazine. It is worth $10 a copy to any man who intends to invest $5 or more per month. Tells you how $1,000 can grow to $22,000. How to judge different classes of investments, the real power of your money. This magazine six months free, if you write today. H. L. Barber, publisher, R434, 20 W. Jackson Boulevard, Chicago.

Bargain in Oil Pots—I have eleven hundred 3-gallon Hamilton oil pots for sale, complete, with covers, for 30c apiece f. o. b. Beeville, Tex. They were bought last winter brand-new. All have been filled with oil, but only about 350 have been fired for one night. All are in first-class condition. I have sold my orchard and therefore have no use for them. Write to A. V. Schvab, Beeville, Tex.

Poultry raising for the farmer boy. Written for the beginner. Tells the farmer boy how to make big money raising chickens on the side. All leading varieties illustrated. Price 25c, with any 50c poultrypaper 65c, with two 50c or one $1.00 paper $1.10, postpaid. Charles F. Wheeler, Marshall, Texas.

For thirty cents I will send a piece of original wood from the Constitution, famous in the civil war, now at Charleston Navy Yard. W. E. Tuck, So. Hamilton, Mass.

Land owners, find out what the minerals on your land are worth. Accurate analysis of ores, minerals and commercial products. Prices reasonable. Box 63, Blacksburg, Virginia.

Renovate your old orchard. Start your new one right. I will inspect, advise and plan operations in detail for practical results. References. R. L. Morgan, Springdale, Ark.

Fruit Farm for rent on shares, in Muskegon County, Mich., near station. 11,000 apples, 13,000 peaches, 500 cherries bearing. Fine condition, good house, large chickenhouse, good pasture. None but practical fruit man need apply. J. E. Harrington, Sycamore, Illinois.

Consulting horticulturist—J. F. Littooy, Boise, Idaho. Directs orchard operations. Investigates orchard values and operations. Expert for counsel at law.

Sell your property quickly for cash, no matter where located; particulars free. Real Estate Salesman Co., Dept. 28, Lincoln, Neb.

NURSERY STOCK

Write us today for our special prices on 1-year apple assortment, Jonathan apple, 2½, 3 to 4 ft. and 4 to 5 ft; Early Richmond and Montmorency cherry, 3 to 4 ft. and 4 to 5 ft. This is good, clean stock and will be sold at a bargain. It occupies land that must be cleared. Apple and pear root grafts. We make the kind that satisfy at right prices. Barnes Nurseries, North Bend and Hamilton Ave., Cincinnati, Ohio.

Nurserymen, Notice—For Sale.

Graft wood from the famous Rose Cliff Orchard, Waynesboro, Virginia. Free from scale and fungus troubles with bearing record unsurpassed. York Imperial, Winesap, Stayman Winesap, Ben Davis, Albemarle Pippin, Smith Cider and the famous Lowry. Write for quotations. Orders booked and filled in rotation. Rose Cliff Fruit Farm, Inc., Waynesboro, Va.

Dunlap strawberry plants, $2 per 1,000; 31 varieties strawberry plants; Kansas raspberries, $5 per 1,000; 10 varieties raspberry plants; Snyder blackberries, $6 per 1,000; 8 varieties blackberry plants. Nice line fruit trees. All stock guaranteed; catalogue free. Write today. The Krider Nurseries, wholesale and retail, Middlebury, Ind.

A bargain in vines, shrubs, plants, evergreens, ornamentals, small fruits, medical herbs, Angora goats. Catalogue free for the asking. Free Stone Nurseries, Minneapolis, N. C.

Amoricus, fall-bearing strawberry, guaranteed true to name, $1.25 per dozen, $3.00 per 100, express paid. Book your orders early. W. H. Koell, Hampton, Iowa, Box 702.

Catalpa speciosa seedlings and seed guaranteed from native trees in Ohio Valley. Instructions for growing seedlings. Very low prices. R. L. McCoy, Lake Indiana.

Loganberry Phenomenal Himalaya best plants. Lowest prices. Illustrated price list. Louis F. Scribner, Pasadena, Calif.

Buy Ohio-grown trees. Catalogue and lowest prices will be sent upon request. G. S. Pickett & Son, Clyde, Ohio.

HONEY

Finest quality new clover honey in thirty-pound cans; price for one can, $3.45; two or more cans, $3.30 each. Sixty-pound cans, $6.30 each. Send for price list. M. V. Facey, Preston, Minn.

California Honey sample 10c. Leaflet free quoting prices freight prepaid. Agents wanted. Spencer Apiaries Co., Box 178, Nordhoff, Calif.

PARTNER WANTED

Wanted—Partner in real estate business; best field in Arkansas. Will bear close investigation. Unless you have $750, save your stamps. S. P. Cockrill, Benton, Ark.

SOUTHERN HOME

$800.00 cash and $800.00 in time payments, buys my forty-acre improved Southern farm. All fenced and cross fenced; good house, well, barn; 216 orange trees, 125 fig trees, grapes, etc.; close to railroad; delightful and healthful climate, abundant rainfall; farmers' association and big canning factory assures cash market; good schools and neighbors; agricultural experiment station near; land produces $150 per acre. You cannot beat it. Address **JOE ALEXANDER, Wiggins, Miss.**

Yearly Index of Fruit-Grower and Farmer For 1912

ADVERTISING FARM CROPS — Page
Advertising Fruit 313
Increasing Consumption of Apples...402
Increasing Consumption of Peaches..402

ASSOCIATIONS AND ORGANIZATIONS
Apple Shippers' Association to Meet 404
Association All right, Grand Junction 323
Association, Better Farming of North Dakota 509
Association, Form New 270
Association Helps Keep Books....509
Association, How Marketing, Helps 531
Association, Need of Central....478
Association, New Credit....431
Association, New, in North Carolina 405
Association that Helps....583
Associations Unite 305
Central Sales System 264
For Co-operative Selling....532
Minnesota Fruit Growers Plan Organization 77
Northwest Fruit Exchange 313
Organization Formed, New York Shipping 205
Organization the Thing 247
Organization in North Carolina, New 257
Ozark Fruit Growers' Association Report 50
Produce Exchange, California Plans 407
Rochester G. & S. Exchange....583
Successful Ohio Association 27

APPLE SHOWS
American Apple Congress.... 44
Appie Show, Michigan....498
Apple Show, Sebastopol 503
Apple Show, Spokane....477
Apple Temple at Spokane....160
Challenge to Match Apples....501
Conservation Congress, Fourth....551
Cornell Fruit Exhibit 46

Irrigation Congress Will Meet....497
Michigan Fruit and Apple Show.... 46
National Apple Show....44, 554
National Horticultural Congress.... 44
Pacific Laud Show 562

AUTOMOBILES AND TRACTORS
Auto, Advantage of Medium Sized..325
Auto Beats Horse 395
Auto on the Farm....271
Auto Trucks and Fruit....186
Auto Truck Beats Wagon....480
Auto Tour Feature....480
Automobile Exhibition 180
Automobile Pleasures 545
Gas Engine Economics....385
Gas Engine, Value of....295
Motor Truck, The Farm....130
Motor Trucks for Hauling Produce..267
Tractor and Farmer 320
Two Wheeler, A Novel....305

BOOKS, NEW
Farm Boys and Girls....552
Making the Grounds Attractive with Shrubbery 552
Making a Rose Garden 552
Making a Garden to Bloom This Year 552
Making a Rock Garden 552
American Transportation Question..552
The Potato 552
Van Pett's Cow Demonstration....160
First Lessons in Bee-Keeping....160
Farm and Garden Rule Book....160
Increasing Human Efficiency in Business 247
Representative California Bungalows 247
West Coast Bungalows....247
Principles and Practice of Poultry Culture 290
Insect Pests of Farm, Garden and Orchard 290
The Book of a Thousand Gardens...290

CANNING — Page
Canned Sweet Potatoes 606
Cannery, The University....557
Canning and Canned Food....343
Canning Industry, Home.... 98
Canning Factory, A Delaware....466
Canning, Good Home....395
Canning Plants, Popular.... 57
Canning, Quicker Ways for....484
Canning Suggestions 381
Canning Tomatoes for Market....484
Canning Vegetables 419
Tomatoes for Cannery....343
Tomatoes for Canning....283

COMBINATION FARMS
Combination Farm, A.... 87
Dairy and Fruit Farm....192, 204, 276
Dairying and Fruit Growing....170
Fruit and Hog Farm, L. C. Wilson 314
Fruit and Egg Farm....232
Poultry-Fruit Farm 100
Poultry on Fruit Farm....237
Silos on Fruit Farm....404

CROP REPORTS
Crop Reports....332, 388, 416, 450, 490
Grape Belt Crops 452
Marketing Information, Need More 320
Peach Crop, Damage to....179
Peach Crop Promising, Arkansas....314
Peach Crop Prospect 359

ELECTRIC AND OTHER POWER
Acetylene for Cooking....323
Electric Light on the Farm....52-384
Electric Motor on Farm....193
Electric Power Plant, Your Own...554

EDITORIAL
An Appreciation 581
Advertising Fruit to Increase Consumption 96
Agitation for Good Roads....384
American Potash Supply....176

Announce Change of Name....434
A Problem for City Men....406
Apple Crop of 1912....574
Bankers and Farmers....575
Beginning New Year....574
Behind Time 356
Better Buildings for Country....434
Blight, Apple and Pear....581
Cash Value of Spraying....260
City Men as Fruit Growers....
Chinch Bugs, Fighting with Fire....579
Cost of Producing Crops....318
Deceiving Ourselves....406
Did You Lose Your Nerve?....522
Distribution Expense Too Great....406
Does Farmer Lack Bus. System?....260
Don't Get "Cold Feet"....435
Don't Sell the Corn....522
Fairs as Educational Inst....434
Fifteen Years Old.... 14
Fosters Old Varieties....475
Get Ready for Drought....350
Good Apple Yield in Pa....356
Helping Find a Market....474
How About Parcels Post?.... 96
How About Your Freight Rates....384
How Commission Men Equalize Sales 96
How to Market Fruit....474
Improved Machinery Economical...260
Increasing Consumption of Fruit...318
Is Our "Big" Apple Crop at Hand? 384
Killing the Goose....434
Marketing Organization Needed....475
Market Problem, Need Help for....574
Milk Yield, Keeping up....579
Must Advertise Apples....318
Orchards, Clean now....579
Organizations, Need of....575
Over Production of Apples....176
Parcels Post or Postal Express....384
Protecting the Reader....406
Resignation of John F. Moore.... 96

Sell or Consign....522
Shippers or Stockholders, Which?...176
Silos Becoming Popular....582
Small Package 356
Some Facts for Missouri Apple Growers 260
Texas, the State of....582
Things to Do in December....581
Trap the Sparrows....356
To Improve Mo. Hen....475
Vote for Parcels Post....176
Watkins' Spraying Plan....319
We Plead Guilty....318
What Shall Be Done With Old Orchards 406
What Missouri Needs....356
What Is the Remedy?....522

FERTILIZERS AND MANURES
Adulterated Nitrate 313
Fertilizer from Smoke.... 97
Fertilizer Problem 446
Fertilizers, Rules for Use of.... 77
Manure, Avoiding Waste....418
Potash from Seaweeds....555

GARDENING
Beans, Make Money in....381
Cabbage, Harvesting and Storing....521
Garden, A Profitable....221
Garden, An Amateur's....114
Gardener, Hints for....127
Garden Grounds, Clean the....588
Gardeners, Paper for....239
How to Make $400 an Acre.... 37
Okra, How to Grow....143
Onions, Early Bunch....138
Onions, Storage of....547
Seeds, Order Garden Early.... 81
Seeds, Order Now....238
Seed Growing in Northwest.... 15
Seed Situation 37
Swamp Lands, Making Gardens of...470
Sweet Corn, Fancy 345
Tomato Crop, Handling a....136

YEARLY INDEX—Continued

Page

Tomato Growers, To Fall.....143
Tomatoes, How to Get.....120
Tomato Growers, to Fall.....143
Tomatoes, How to Ripen.....113
Tomatoes In Oklahoma..... 37
Tomatoes, Raising Early..... 94
Tomatoes, Staking 283
Tomatoes Under Glass..... 88
Vegetables, Earlier 135
Vegetables, Trying Out 212
What to Grow for Early Market..... 37

GENERAL FARMING

Alfalfa and Corn for Horses.....585
Alfalfa, Fall Care of.....521
Alfalfa Hogs Make Gains.....577
Alfalfa in East 515
Alfalfa, Stimulate in Canada.....129
Alfalfa, Preparing for.....412
Beef, High Cost of.....535
Burtis Farm, W. J.....584
Bookkeeping; Farm 562
Calves, Protecting from Scours.....493
Catalpas, Plant 543
Cheese, Wisconsin Ships Much.....549
Champion Jersey Cow.....577
Corn as a Catch Crop.....138
Corn, Don't Feed Mouldy.....538
Corn, Growing Contest.....331
Corn, Select Seed Early.....469
Cow, A Famous 515
Clover, How to Grow 538
Dairy Trains in Iowa 211
Dairymen, Government Aids.....577
Feed, Grow at Home.....493
Evergreens, Fall Planting for.....543
Flies from Stock, To Keep.....411
Grain, Commercial Grading 563
Gullies, Fill Up the 532
Hardpan Soils, Treatment for.....541
Hay Crop 467
Hay, Curing Cowpea.....411
Hay, Curing Leguminous 415
Hogs After Steers.....577
Hogs for Profit. How to Feed.....504
Hogs, Use Pasture for.....533
Let the Water Pass.....545
Lime and Cover Crops 116
Manure Spreaders for Profit.....593
More Dirty Milk 505
Milk, Producing Sweet 544
Pastures, Watch the 497
Pigs, Protect the 557
Plug Horses, Bad Care Makes.....547
Pork, Best Way to Cure 80
Pork, Rape for 562
Protecting Live Stock Against Lightning 418
Potato Diseases 542
Potato Storage 523
Potatoes, Marketing 555
Plow? How deep do you.....546
Potatoes, Possibilities in.....556
Reclaiming a Run Down Farm.....517
Registered Stock, Concerning.....538
Rotation, Bigger Crops by 542
Seed Corn 515
Seed Corn, Field Selection of.....529
Seed Corn House 543
Seed Potatoes, Select Now 547
Service Bureau, A Million for the..603
Silo Construction 542
Sires, Buy Good 595
Sail, Handling Hard-pan.....602
Soy Beans 135
Stallions, Use Better 483
Steer's Back, A.....577
Test Grass Seed 546
Vetch for New Land 71
Weeds, Cut in Pasture 415
Wells, Protect the 532
Wheat, Don't Sow Too Early.....499
Wheat Yield, Increase 405

HORTICULTURAL SOCIETY MEETINGS

Arkansas Society Meets 270
Farmers Meet in Indiana.....126
Field Meeting for N. J. Growers....459
Idaho Hort. Soc. Meeting.....214
Michigan Hort. Soc.....69-599
Missouri Hort. Soc.....104
Nebraska State Hort. Soc.....160
Northern Ill. Hort. Soc..... 46
Northwest Iowa Hort. Soc..... 15
N. Y. Fruit Growers' Assn..... 90
Nut Growers' Convention 75
Ohio Hort. Soc.....46-200
Ozark Fruit Growers' Assn..... 99
Southern Illinois Hort. Soc..... 62
Virginia State Hort. Soc.....127
Western N. Y. Hort. Soc. Meeting..208
Washington Hort. Soc.....133

HOTBEDS AND COLD FRAMES

Hotbed, Building a.....120
Hotbed Covers 311

INSECTS

Aphids 41
Aphis, Fighting Melon 299
Codling Moth, Controlling 9
Codling Moth, Winter and Spring Work Against 197
Corn Ear Worm 521
Cutworms 375
Fall Web Worm 13
Fighting the Bugs.....521-586
Flat-headed Borer 13-586
Fruit Bark Beetle 553
Grape Insects, Long War on....530, 594
Grape Leaf Hopper 531
Grape Root Worm.....20, 530
Gypsy Moth Survives 61
Insect Enemies of Peach 482-553
Lecanium Scale 553
Maggots, Root 114
Oyster Shell Scale 358
Peach Borer 11-553
Plum Curculio 553
Plum Curculio, Fighting..... 73
Round-headed Borer 16-586
San Jose Scale, Do You Know..... 16
Successful Fight With Insects.....557

Page

Weevils, Bean and Pea.....213
Woolly Aphis 16

MARKETING

Apple Market 239
Cold Storage Building, Sectional....373
Helps Sell Apples 510
Market, Charm of Distant.....470
Market Methods 572
Market, The Buffalo 63
Market That Aids Middleman..... 518
Market, New York 304
Marketing Northwestern Apples..... 359
Marketing Problem, the Real.....257
Marketing, Question of 413
Sell Crops, Aids Growers.....459
Selling Plan That Won..... 76
Selling Produce 465

MISCELLANEOUS

Apple, The Lowry 529
Bankers Foster Agriculture.....601
Birds Being Slaughtered 546
Birds, Don't Kill the 98
Book Farmers 291
Bookkeeping on Farm 266
Bindweed, Get Rid of.....587
Choosing a Farm 163
City Population Increasing 537
Colored Minister 570
Commercial Varieties of Apples 360
Concrete Fruit Cellar 447
Conservation of Water 385
Cooking Contest for Apples 46
Country Life, Develop 590
Country Life, to Improve 77
Cow Feed in the Mountains 37
Crop Bulletin Discontinued 259
Dead, Two Noted Men 475
Death of T. H. Todd 161
Desperadoes to Farmers 570
Diversification, A Reason for.....319
Do You Get Paper Promptly?.....501
Drain Seeped Land 215
Draining the Farm 139
Dynamite for Orchard Work.....595
English Walnuts 472
Entering a New Era 476
Express Rate, Wants to Regulate.. 81
Farmer and College 499
Farmers and Small Towns 544
Farm Labor 591
Fence Posts, Choosing 80
Florida Opportunities 28
Flumes for Irrigating 226
General Farm in Mo. Successful....569
Girls Cook Apples 547
Greisen C. R 473
Hardiness of Buds 202
Helps, How Fruit-Grower 47
H. G. Fletcher, Manager, at Grand Junction 189
High Rate Poor Service..... 47
Hired Help Problem 418
Holden, P. G., Portrait.....603
Home Grown Produce, Need More... 15
Hood River, Acreage of Apples..... 99
Hydrometer, Use of 358
Ice Cream Making, Teach 526
Ice Houses 63
Implement Firm, Change in.....606
Iris, the Flower for the People....383
Irrigation, Much Interest in.....203
Italian Colony in Ark..... 444
January Number Made a Hit.....205
John F. Moore, Resignation of..... 96
Lake Appointed Sec'y.....477
"Moon Farming" 37
Movable Agricultural School 128
Mt. Airy, Pa.....570
Mueller, Ernst 478
New Bulletins 55-290
News of Michigan Growers.....316
Northern Pacific Demonstration Train 97
Note of Warning 319
Ozarks, Mo. and Ark.....605
Our Feathered Friends 510
Paint, Use of on Farm 57
Peach, J. H. Hale.....409
Pedigreed Trees, About.....203
Peony 449
Points for Beginners 18
Popular Periodical 68
Power, For Bureau of Farm.....500
Prizes to Students 556
Pruning Nursery Stock Before Shipping 408
Quack Grass, Kill the.....563
Rex Factories Burn 593
Roads, Poor, Are Expensive.....286
Rural Decrease 591
Rural Schools, to Improve 532
Salt, Some Uses of 456
Save Work in Family Wash.....505
Side Lines for Fruit Farmers....47-121
Showing Long Islanders How to Farm 466
Succeeded, An Amateur 36
Success, Winning on Small Farm...570
Sulzer Bill, Growers Endorse.....599
Start School Promptly 481
Steel Wheels for Arid Climates.....199
Taylor Returns to Colo. 269
Thermometers, Get Good..... 82
Things to Do in April.....261
Things to Do This Month.....319
Tile Drain, How to..... 536
Washington, Number of Trees in...282
Waterworks for the Farm 291
Weather Bureau's Co-operation.....217
Western Apples, Would Keep Out.. 45
Why Paper Was Late 522
Winter Work for Farmers.....128
Woman Gets Prize..... 26

NOTES

Fruit Notes for February.....119
Notes from Colorado.....263-494
Notes from Idaho 245, 311, 359
Notes from Morrisania.....
.....278, 328, 364, 378, 410, 443
Notes from Northwest.....408
Notes from Oregon 191

Page

NURSERIES

A Day at New Haven 106
Great American Nurseries 573
Nursery and Seed Firms 22
Nurserymen's Boston Meeting 387
Nurserymen's Ass'n Meeting of.....369
Storrs-Harrison Nurseries 573
Trees by the Million 518

ORCHARD MANAGEMENT

Apples in N. C.....473
Apples in Shenandoah Valley..432-528
Apples In Virginia 438
Awakening in Blue Ridge.....469
Budding, New Method.....519
Cost of Raising Apples 361
Crops Between Trees, Growing.....223
Cross-Pollination 222
Cuttings, Increasing Bushes by.....605
Fruit and Truck in Del.....468
Darby Fruit Farm..... 40
Defends N. W. Apples.....407
Dynamite for Digging Holes.....387
Dynamite, Planting with.....407
Fillers, What to Use..... 36
From a Missouri Farm 275
Getting a Profit from Culls.....488
Grading Oranges on Tree.....495
Harvest on Western Slope.....487
How Do You Handle Fruit?.....476
Making a Fruit Farm.....124
Orchard, A Made Over 487
Orchard, Bay Road Company.....448
Orchard Building Up the 281
Orchard, Care of 30
Orchard Begun, Another Big.....433
Orchard, Blair Sells.....409
Orchard, Care of Home..... 62
Orchard Cultivation 346
Ontario Fruit Belt 354
Orchard Heating vs. Jack Frost....174
Orchard, How's Your Neighbor's....187
Orchards in East 429
Orcharding in Kentucky 134
Orchard, Intercropping the.....256
Orchard, Laying Out 35
Orchard, Mass. Demonstration..... 60
Orchard Planting 34
Orchard Practice Taught 587
Orchard Renovation 24
Orchard, Saved Home 142
Orchards, Soils for 69
Orchards, Some New York.....399
Orchards, To Improve Missouri....211
Orchard, Why Cultivate the.....549
Orcharding in Western New York..520
Peach Crop, Horatio 440
Peach State, Missouri a.....216
Peach Trees, Some Hardy 409
Peaches in Texas 436
Peaches, Ohio Market Methods.....572
Photographer Turned Farmer..... 74
Planting, Fall 534
Planting: One-year vs. Two-year Trees 107
Pollination 247
Profit in Old Orchard 140
Rabbits and Mice, Look Out for....113
Rabbit Injury, Prevent 587
Reclaiming a Big Orchard.....524
Renewal by Top Working 119
Renovation Returns 61
Rogue River Valley.....255
Rome Beauty? What's the Matter With.....179
Silage as Inter-Crop 375
Success on Ten Acres 137
Varieties of Apples to Plant 179
Western Methods in East 283
Y. M. C. A's Good Work.....371
Young Orchard Pays Its Way..... 17

OUR HOME FOLKS

A Friend to Aunt Keturah.....366
A Good Visit 456
Amateur Doctors 422
Appendicitis 293
Apple Recipes 418
A New Comer 366
A New Club.....506
A Plain Woman's Experience.....292
Behind Time 228
Breakfast Dishes 147
Chafing Dish Club 67
Christmas Decorations 608
Christmas in the Country.....608
Cleaning Walls and Ceilings.....336
Cure Constipation 392
Coughs and Colds 65
Country Co-operation 608
Cure for Drink Habit 229
Don't Cook Too Much 456
Economical Meat Dishes 455
Economical Sister 608
Economical Traveling 507
Economy Club 506
Economy Club 608
Fashion Hints 558
Fall Shopping 454
February Work 145
February Work With Flowers.....144
Folly of Overworking 229
Hard Times Prize Story.....292
Hard Times Stories 337
Hard Times Stories 303
Hard Times Stories 367
Hard Times Stories 422
Hard Times Stories 456
Help Problem 390
Help for Women Talks 371
Herbs 420
Home Canning Suggestions.....292
Home Making 454
Home-made Candy 608
Home-made Garnitures 558
Home, Inexpensive Modern 148
Home Picnic 390
Household Labor Saving Devices....253
Housekeepers' Emancipation.....145
Housewife, Uncle Sam's Work for..239
How We Manage 420
Important Problem 508

Page

Make Home Attractive 335
Meat, Use Cheap Cuts 606
New Home 66
Neighborhood Entertainments 146
Old Fashioned Nurse 65
Old-Fashioned Nurse (2).....144
Old-Fashioned Nurse (3).....228
Old-Fashioned Nurse (5) 336
Saving Work 295
Sensible Dressing 66
Social Hour 68
Social Hour 230
Social Hour 391
Some Good Fish Recipes 229
Something Different 147
Stomach Troubles 230
Thanksgiving 560
Thanksgiving Fun 561
This to You 64
Thought for New Year 64
To Renovate Garments 336
To Keep Butter 456
Traveling With Children 293
The Social Hour 294
Uncommon Recipes 337
Unusual Holiday Gifts 558
Uncommon Recipes 230
Useful Items 292
What Kind Shall I Get?.....293
Woodwork Beautifiers 366
Winter Bloomers 420
Young Couples' Opportunity.....559

PACKING

Barrels, Standard Apple 375
Box, Apple, Holds Bushel.....286
Package, Label Your 319
Packages, Corrugated Boxes.....315
Packages for Fruit. Paper.....380
Packing, School Gives Course in...213
Packing School in M. A. C.....283
Packing, Virginia Box 403
Paper Cartons for Dozen Apples....409
Standard Apple Barrel 486
Sulzer Bill Passes House 404

POULTRY

Breed Selection of Poultry 501
Broody Hens, Breaking Up.....239
Brown China Geese 71
Buff Rocks, Why I Breed.....298
Checking Roup 72
Consumption in Chickens 71
Dirty Eggs 154
Ducks, Indian Runner .....
.....153, 155, 299, 344, 345
Eggs in Cold Weather, Getting.....612
Egg Production, Winter 236
Feeding Incubator Chicks.....298
Fixing Up Chicken House 154
Fowl Cholera 344
Goslings, Experience With.....296
Infertile Eggs Keep Best 71
Litter in Poultry House.....154
Light Brahmas and Fruit Trees.... 71
Make Hens Scratch 150
National Egg-Laying Contest.....
.....161, 297, 370, 453, 561, 611
Poultry in Orchard 183
Profits in 70
Yarding Poultry on Farm 70
Poultry Man's Success With 95
Poultry on Fruit Farm 237
Poultry Raisers' Opportunity.....344
Poultry, Some Experience With.....150
Poultry, Woman's Experience With. 94
Preserving Eggs at Hillside Farm...370
Turkeys, Bourbon Red 153
Which Breed is Best.....152
Yesterlaid Egg Farm 234

PLANT DISEASES

Asparagus Rust 343
Apple Scab 12
Apple Blotch 12
Bitter Rot of Apples..... 11
Bitter Rot, Prune Cankers.....573
Blight, Fined for 407
Blight, Hold Over 198
Blight, Pears and Pear 215
Black Rot of Grapes 38
Brown Rot 38
Crown Gall on Almond 32
Downy Mildew of Grape 12
Fly-speck Fungus 13
Fire Blight 17, 77, 387
Peach Fruit Spot 32
Peach Leaf Curl 12
Peach Scab 11
Smuts of Grain 540
Sooty Blotch 13
Sunscald 80

PRUNING

Cementing Cavities in Trees 24
How to Care for Weak Crotches....286
Pear Tree Pruning 484
Prune Apple Trees Now 554
Pruning in Colorado 108
Pruning the Orchard 111, 259
Pruning, Open Head 196
Pruning, Systematic 59
Training Fruit Trees 268

QUESTIONS AND ANSWERS

Alternate the Blocks 289
About Planting Apples 220
Berries for Colorado.....289
Blackberry, How to Propagate.....597
Cedar Apple Fungus 218
Cedar Apple Rust 597
Corn in Young Orchard.....220
Crude Oil for Rabbits.....596
Evaporator, Wants Apple 596
Fertilizers for Strawberries 288
Fertilizers for Strawberries 414
Frost Cracks 288
Getting Rid of Alkali..... 55
Grape Scale 220
Growing Your Fence Posts 218
Hydraulic Ram 597
Home-made Con. Lime Sulphur....218
How Should Old Trees Be Cut?....289

Page

Kind of Legume to Use.....289
Late Pruning 414
Left-over Arsenate 290
Live Wood Bolts 219
Light in Relation to Insects 288
Mixing Varieties for Pollination..289
Mulberry Cuttings 219
Nitrate for Strawberries 289
Pecans and Orchard Grass 289
Peaches for Fall Planting 598
Peaches, Puny Growth 598
Pear Blight, Remedy for 598
Protecting from Borers 54
Protecting Bushes 598
Pruning Sweet Cherry.....598
Power Spraying 220
Pruning Currants 55
Public Markets 219
Rusty Nails and Other Questions....219
Several Important Questions 55
Shallow-Rooted Trees 598
Should Raspberries Be Fall Pruned? 596
Should Soil Be Analyzed? 54
Spraying Questions 414
Spray Pump Query 288
Should Young Trees Be Sprayed?...220
Shape for Apple Trees 219
Sheep Nibble Trees 220
Stayman Winesap and Dynamite...218
Tree Planting Wire 596
Tomato Catsup 414
Top Grafted Trees 597
Transplanting Large Trees 414
Trees Did Not Do Well 55
Trapping Auts 54
Transplanting Four-year Trees.....289
Varieties for Arkansas 54
Varieties to Plant 288
Vinegar, Wants Quick Method for...596
What Made the Apples Wormy?....218
What to Do for Aphis 289
Why Do Leaves Stay?.....288
Woolly Aphis in New Ground.....218

SMALL FRUITS

Berries at Lindenhurst 188
Berry Growing in Oregon 500
Berry Notes 74, 280, 330, 357, 382
Blackberries 198
Blackberry Culture 224
Currants for Profit 320
Fairview Berry Notes 327
Gooseberry, About the.....322
Gooseberries In Kentucky 322
Grapes in Washington..... 29
Grapes Pay, Making the 550
Grape Storage Experiments 129
Himalaya Berry, Growing the.....526
Himalaya Berry, Hardy 331
Himalaya Plants Killed 307
Himalaya Berries, More About.....352
Himalaya Berry Plants Coming Out 335
Himalaya Berry, What About.....274
In the Berry Field.....56, 132, 194
Raspberries, Support for 604
Red Raspberries in Tennessee 187
Strawberry Bed 227
Strawberry Bed, Handling a.....588
Strawberry, Badger's Farm 588
Strawberry Culture 182
Strawberry Culture, a Venture in....195
Strawberry Disease, to Study a.....177
Strawberries, Apply Nitrate to.....357
Strawberries at Judsonia 351
Strawberries at Neosho 324
Strawberries at Steamboat Springs 169
Strawberries in British Columbia 184
Strawberries in Rhode Island.....189
Strawberries, How to Plant 272
Strawberries, Kill Chickenweed in..386
Strawberries, Prominent 483
Strawberries Scarce In East.....271
Strawberries, Shipping 262
Strawberries, The Fall.....171
Small Fruits, Comments About.....523
Small Fruits in Colorado 176
Small Fruits in Michigan.....178
Small Fruit Notes.....437, 492
Vineyards in Michigan 284

SPRAYING

Antiseptic Wash 58
Arsenate of Lead 58
Arsenite of Zinc 403
Bordeaux Mixture, Formula 36
Compressed Air Outfits 199
Lead Arsenate, Mixing 217
Good Work at Spraying 10
Hose for Sprayers 74
Kerosene Emulsion, How to Make.. 49
Lime-Sulphur, Commercial 592
Lime-Sulphur Sprays 80
Lime-Sulphur Solution Formula... 49
Rex Lime-Sulphur Wins 68
Spray for Vineyards 20
Spray Outfit to Get, Kind of.....185
Spraying and Pruning 59
Spraying, Another View on 287
Spraying, Compressed Air 50
Spraying Experience 19
Spraying for Public 73
Spraying, Good Returns From 17
Spraying, High Pressure 48
Spraying Hints for Beginners 193
Spraying in Mo., Custom 287
Spraying Little Orchard 81
Spraying Machine Contest 515
Spraying Machinery, Use and Abuse 285
Sprayers, More on Compressed Air..190
Spraying, Notes on 58
Spraying Orchard, Cash for Spraying 327
Spraying Outfits, Care of.....587
Spraying, Prize Picture 69
Spraying, Successful 17, 49

VINEGAR

Vinegar, Easily Made 458
Vinegar Making, Principles of 545
Vinegar Making, Pure Cultures for..527

ON TIME all the time with this time keeper. Performs a two-fold service for less than the ordinary price of one. First, attractive desk, dresser or wall clock. Convenient to carry from place to place for a poultryman when keeping record time in operating incubators and brooders. Second, remove the gun metal case—easily done—and you have a good watch of convenient size. Satisfaction guaranteed, we give a combination clock and watch for only $1 and include a subscription to

GOOD POULTRY a quarterly magazine, devoted to special crops and intensive farming, with special attention to the care and handling of poultry. Tells how to make $200 per acre per year on any farm from 5 to 100 acres. **Good Poultry** alone, 10 cents a copy, 25c a year. It is free with $1.00 order for the clock-watch. Agents wanted, write today.

SHOREWOOD FARMS CO., Saugatuck, Mich.
City Office — 11 N. Market Street, Chicago, Illinois

Strawberry Plants

Ready After October 15
Fall Catalog Now Ready

J. A. Bauer, Judsonia, Ark.

Second-Hand Egg Cases

with fillers, 30-dozen size, until February 1st, $8.00 hundred. All supplies.
P. McKANNAS SONS, - HONESDALE, PA.

You Can Pay More, But You Cannot Buy Better Than

SPRAYS THAT PAYS
KEY BRAND

SCALE KILLER
(SOLUBLE OIL)

Easily Applied—Simply Mix with Water and Spray
Barrels (50 gal.)..$15.00 | ½ bbl. (30 gal.)....$9.90
10-gal. Can & Case 3.50 | 5-gal. Can & Case.. 2.00
F. o. b. New York
INTERSTATE CHEMICAL COMPANY
11 BAYVIEW AVE. JERSEY CITY, N. J.
Write for "Practical Spraying"—Best book on spraying
We Manufacture Arsenate of Lead—Dealers Wanted

The agricultural value of a fertilizer bears no strict relation to the commercial value. The one is determined by the soil, crop and climatic conditions, the others by the market and trade conditions only.

Renew your subscription today.

Tropical Mexico RANCHES

Have some splendid four to ten-section cattle ranches, which I am offering at attractive prices. Interested parties write
GEORGE G. WRIGHT
422 Grand Ave. Temple. Kansas City, Mo.

Here Comes Santa

Dear Old Santa Claus—The One Good Old Soul—Who Brings Joy and Pleasure To All—Young and Old.

—And when Santa comes to you and your family, and your friends, this Christmas—won't his coming be with a great deal of added pleasure to you when he leaves your Christmas packages all beautifully bedecked with dainty Christmas Seals—and with delightful Holly Greeting Cards?

—Won't it be a pleasant reminder to you of his thoughtfulness and love for you and your children—and for the folks at home—and your friends?

—It's great to know that you are well thought of.

—Perhaps you have forgotten to secure your Christmas Seals or your Christmas Greeting Cards, or perhaps you could not find them on sale at your stores.

—But it is not too late even yet to secure them—for we still have a large supply of them on hand—and they are beauties, too—all arranged in neat packages—containing over 225 pages.

—We secured these for your express purpose—and we want you to have your share of them—so send in your order for a complete package today.

What These Christmas Packages Contain

It was with the greatest care that we selected these beautiful assortments—quality and tone was our first consideration. Each package contains the following articles:

15 Beautiful Christmas and Holiday Post Cards, embossed and lithographed in gold and colors.
6 Large Cards, 4½x2¼ inches.
8 Medium Cards, 3⅝x1⅞ inches.
10 Small Cards, 1⅞x1⅛ inches.
2 Xmas Folders.
6 Large Tags, 4¼x2¼ inches.
8 Medium Tags, 3⅝x1⅞ inches.
10 Small Tags, 1⅞x1⅛ inches.
25 Large Seals.
50 Medium Seals.
50 Small Seals.
10 "Merry Christmas" Stickers, 3⅝x1⅞ inches.
10 "Do-Not-Open-Until-Christmas" Seals.
16 Stamps.
(The seals and stickers are all gummed.)

All are distinctly designed and highly colored. Most of them are prettily embossed and meet with the approval of the most particular purchaser.

How to Secure These Beautiful Assortments

Merely renew your subscription to The Fruit-Grower and Farmer for One Year at $1.00—and we will send you the complete package free of extra cost. At the same time we will include as a Special Gift a year's subscription to "Farm and Home" and "Kimball's Dairy Farmer," both excellent rural magazines, the price of which is 50 cents a year each. Send in your order immediately. Christmas is near, and we will be serving many with these packages, so take no risk about getting your supply.

The Fruit-Grower & Farmer, St. Joseph, Mo.

Did Your Spraying Pay?

Spraying for Profit will be the feature of the January number of The Fruit-Grower and Farmer. In that issue we would like for you to tell the results of your past season for the benefit of other growers.

Many improvements are yet to be made in profitable spraying. Every fruit grower gets experience and meets problems which are different from the other fellow. It is by comparing these experiences that opens the ways for better methods.

Tell about spraying your orchard, your berry field, your vineyard, your potato field. Tell how you sprayed, what kind of materials and what sprayer you used. Tell what insects or diseases you sought to control and what results were obtained.

Let your experience help others, and theirs help you.

Make your story personal. Tell how work was done on your own farm, or how your neighbor sprayed. Individual experiences are what count far more than theory.

Prizes will be awarded for these stories.

The best story will, of course, get the biggest prize. There will be three of these prizes—$5, $2.50, $1. These need not cover more than 700 words, and should be plainly marked as "prize story" when they are sent. Whenever possible accompany the story with a good photograph.

THE EDITORS

The Fruit-Grower and Farmer

ST. JOSEPH, MISSOURI

How to Save Fifty Per Cent on Your Bill for Advertising

Advertisers can save 50 per cent of their expenditure for space in *The Fruit-Grower and Farmer* by sending their order NOW for space in the January issue.

Here is how this can be done:

On all contracts for advertising space placed after January 1st, 1913, *The Fruit-Grower and Farmer's* rate will be 75c line, $10.50 an inch.

Until January 1, orders for space to be used before September 1, 1913, will be accepted at the present rate of 50c line, $7.00 an inch.

Act promptly, and effect this 50 per cent saving.

Now is the Time to Advertise in The Fruit-Grower and Farmer

The January number will be the first of special issues which are of extraordinary interest to our readers, and therefore of unusual value to advertisers. The January issue will tell about all new developments in spraying of trees and plants; it will be a resume of the year's work in fighting insects and diseases.

No advertiser who wants to reach the best farmers in America can afford to overlook the more than a hundred thousand readers of *The Fruit-Grower and Farmer.* They are up-to-date in every respect, and ours is their favorite publication. Send orders at once for January number. We will help you plan your campaign, if you desire.

Fruit-Grower & Farmer

ST. JOSEPH, MISSOURI

It's Easy to Save Money if You Buy the Right Way. Read the Letters Below:

We like the Thiery Piano you sent us very much. It is a beautiful instrument and all who see it, think it is just grand. We saw a piano soldhere the other day at $400.00 that can't compare with yours and we paid you $150.00 less money. Yours truly, E. GUSTNER. R. F. D. 3, Hopkins, Minnesota.

Find enclosed check in full for the style 40 Thiery Piano. Am much pleased with it. It beats all the pianos our local agents handle and besides, costs $100.00 less. I had it insured and the insurance agent said it was the finest piano he bad ever seen. Yours very truly, H. BEHN, Osborne, Iowa.

A piano as good as this would cost me from $600.00 to $700.00 here in town. The Thiery Piano is better than any piano could possibly be sold for at so low a figure. The tone aud workmanship are perfect. You have saved me $200.00. Yours truly, ADOLPH WAGNER, Reardan, Wasbington.

You will find draft enclosed for $30.00 as first payment on the Thiery Piano. I certainly am well pleased and I have saved money by dealing with you. My neighbor and music teacher say it is the finest piano they ever played on. Yours respectfully, EDNA DEBOLT, Putnam, Oklahoma.

You're Sure of Real Quality when You Buy a Thiery Piano. Read Statements Below:

I am well satisfied that I have saved at least $150.00 by sending to you for a Thiery Piano. After giving your instrument a thorough test for thirty days, I want to tell you that I am perfectly satisfied. The style, finish and tone are better than any other instrument around here. You can use this letter as a testimonial if you wish. Truly Yours, GEORGE FRY, Sedgwick, Kansas.

We couldn't have bougbt as good a piano in this vicinity for $500. and our friends who have come to visit us, say they wish they would have known about you before they bougbt theirs. You have done everything you promised and a child five years old would be safe in doing business with you. Yours truly, HAZEL ELSBERRY, Minot, North Dakota.

We received the piano alright and are more tban pleased with it. Thorough inspection shows us that it is the best our money could buy and others who have played on it, say we have saved $100.00 by dealing witb you. Yours, WILLIAM H. FIELDS, Lavalle, Wisconsin.

The above is a small picture of my Art Upright Style 40—a piano so good that I'll place it in comparison with any $400.00 or $500.00 upright in your neighborhood. But the price direct from me is surprisingly low. My new Art Style Book shows this piano in colors.

Here's a small picture of my full size Upright Piano style 30, made in genuine mahogany and genuine burl walnut cabinets, Empire Grand Top, brass pedals and hinges, copper overstrung bass. My Art Style Book shows this piano in colors.

My New Art Style Book is Ready. And my 1913 Buying Plans and Straight-to-you-prices—they are hummers! When You can Buy Quality Pianos on a "Nothing-to-Pay-for-but-Quality" basis—with agents' and middlemen's tidy profits left out—and have your choice of Thiery Quality Pianos in your home on Real Free Trial to Prove it—what's the best thing to do? Just fill out Coupon below and mail to me—what you'll receive by return mail will surprise you.

The statements from recent buyers of Thiery Pianos printed above, show you how easy it is to save money and get real piano quality when you buy the right way. Homes by the dozen lose $100.00 by not buying direct—by paying $100.00 too much for the quality received—by getting $100.00 less piano quality than the price paid should buy. It is pleasingly different when you buy a Thiery Piano.

"Nothing to pay for but Quality" when you buy a Thiery Piano. No big profits to hand out to agents or middlemen. Every dollar you invest in a Thiery Piano brings you full quality worth in return.

Scores of readers of this paper have Thiery Pianos in their homes and the output of Thiery Pianos this year will double over last.

My thirty days free trial is a real free trial. It means just what I say. Any Thiery Piano you want is yours, freight prepaid. Nothing to pay in advance—nothing to pay down—nothing to deposit. In other words, you are invited to test any Thiery Piano right in your home for one entire month, all at my expense. And if you're not glad you sent for it, just ship it back.

This thirty days free trial means more than merely playing the piano for thirty days. It means that you can compare it with any other piano in your vicinity costing more money, and if the result isn't pleasing to you, merely ship back at my expense. If you want credit you can have it. If you don't want to pay cash, there are a hundred and one different ways for you to buy. Not the commonly advertised so-much-a-month plan, but a payment plan arranged to suit your particular needs. Quarterly, semi-annual or yearly payments and dozens of other ways. My special letter will tell you all about them.

Every Thiery Piano is fully warranted; not merely for five or ten years, but a real guarantee that protects you as long as you keep the piano—a guarantee so strong that, as a purchaser of a piano, you couldn't write a better one yourself.

And here are some special features about the new 1913 Thiery Pianos that will interest you. They all have ivory keys, not celluloid or imitation ivory. They all have double veneered cases both inside and out, in genuine mahogany, burl walnut and finest English oak. NOTHING IMITATION ABOUT THEM.

They have polished brass hinges and trimmings and the pedals are the best quality brass. They have Empire Grand Tops. They have nickel plated tuning pins and the bass strings are copper overstrung.

And without extra charge, you can now have Thiery Pianos in the new and popular Art Finish.

Thiery pianos have quality points you don't find in cheap pianos and they are always up to the minute in design. They are greatest values offered direct to the home today.

Don't start a deal anywhere—don't even think of buying from an agent or any other house until you get my book and plans. What you receive will surprise you.

This Coupon brings you my New 1913 Art Piano Style Book, New Offers and Direct to You Prices by return mail postpaid . . . . FREE

Be Sure and check on the coupon below whether you want Organ or Piano Book so I will BE SURE to send you the right book and plans. Send coupon now.

From Two to Three Years Time to Pay If You Are Not a Cash Buyer.

J. B. THIERY, The Piano and Organ Man, Milwaukee, Wis.—Without slightest obligation on my part, please send to me at once, postpaid, your beautiful New 1913 Style Book, witb Special Letter, Net Price List and full particulars of your 1913 buying plans and offers, as advertised in THE FRUIT-GROWER AND FARMER.

☐ PIANO STYLE BOOK

☐ ORGAN STYLE BOOK 43

NAME _____

PLACE AN (X) MARK IN SQUARE OPPOSITE BOOK YOU WANT

Do You Want an Organ?

Thiery Organs are the real "music-makers" of all organs. 12000 sold direct to homes in the last two years. My Style Book of Organs, printed in colors, shows and tells all about them. 30 days trial and test in your own home—ship back at my expense if you are not more than pleased. No money in advance—from one to two years time to pay if you are not a cash buyer. $2.50 per month and up buys one. Choice of parlor, chapel and piano-case styles—at a saving of $25. to $50. If you want an organ, send coupon now and receive new Style Book free by return mail. Be sure and mention on coupon whether you want piano or organ book, so I can send you right book.

J. B. THIERY, MILWAUKEE, WIS.
THE PIANO AND ORGAN MAN

UNIVERSITY OF ILLINOIS-URBANA
Q. 634.05 WE C001 v.23(1912)
Western fruit-grower.
3 0112 089599309